GLOBAL TENDER ENQUIRY DOCUMENT

FOR PURCHASE OF MEDICAL EQUIPMENT

FOR & ON BEHALF OF

AIIMS, RAEBARELI

On E-Tender Basis

HSCC/AIIMS-RAEBARELI/HOSPITAL/2/2019

Dated 28.11.2019

HSCC (INDIA) LTD

(A GOVERNMENT OF INDIA ENTERPRISE)
Plot No. 6-A, Block-E, Sector-1, NOIDA (U.P.) – 201 301
PHONE: 0120-2540153
FAX: 0120-2542447
URL: www.hsccltd.com

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SECTION- I

NOTICE INVITING TENDERS (NIT)

For GLOBAL TENDER ENQUIRY DOCUMENT

HSCC (INDIA) LTD

(A GOVERNMENT OF INDIA ENTERPRISE)

Plot No. 6-A, Block-E, Sector-1, NOIDA (U.P.) – 201 301

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GOVT OF INDIA
MINISTRY OF HEALTH & FAMILY WELFARE

SECTION I

NOTICE INVITING TENDER (NIT)

Tender Enquiry No.: HSCC/AIIMS-RAEBARELI/Hospital/2/2019 Dated: 28.11.2019

Bids are invited on behalf of Ministry of Health & Family Welfare through HSCC (India) Ltd from eligible and qualified tenderers for supply of following Medical Equipments for AIIMS, Raebareli-229405, U.P., India:-

S. No.	Equipment Details	Qty./ Requirements	EMD (Rs.)
A	**Radiology Deptt. At Hospital Block**		
1	128-slice CT Scan	1 no. for Hospital Block	12,00,000.00
2	1.5 Tesla MRI Unit	1 no. for Hospital Block	17,00,000.00
3	Digital X-Ray 1000mA System	1 no. for Hospital Block	4,60,000.00
4	Mobile X-Ray (High Frequency)	2 no. for Hospital Block	3,20,000.00
5	Colour Doppler (2D & 3D)	2 no. for Hospital Block	1,80,000.00
6	Portable Colour Doppler System	2 no. for Hospital Block	48,000.00

7	CR System	1 no. for Hospital Block	60,000.00
8	Mammography System	1 no. for Hospital Block	80,000.00
9	Digital Radio-fluoroscopy System	1 no. for Hospital Block	4,50,000.00
B	**Orthopaedics Deptt. At Hospital Block**		
1	Orthopedic Table with Attachments	2 no. for Hospital Block	2,80,000.00
2	Tourniquet	2 no. for Hospital Block	8,000.00
3	Battery Operated Drills	2 no. for Hospital Block	56,000.00
4	General Orthopedic Instruments (Set 1-6)	2 Sets for Hospital Block	20,000.00
5	Arthroscopy System	1 no. for Hospital Block	1,20,000.00
C	**Urology Deptt. At Hospital Block**		
1	Pneumatic Lithotripter	1 no. for Hospital Block	40,000.00
2	ESWL	1 no. for Hospital Block	6,00,000.00
3	Urodynamic System	1 no. for Hospital Block	80,000.00
4	PCNL Set	1 no. for Hospital Block	50,000.00
5	Holmium Laser 100W	1 no. for Hospital Block	2,00,000.00
6	Tissue Morcellator	1 no. for Hospital Block	40,000.00
7	Digital Flexible Ureteroscope	1 no. for Hospital Block	50,000.00

8	Semi Rigid Uretero-renoscope	2 no. for Hospital Block	40,000.00
9	Cystoscope & Resectoscope	1 no. for Hospital Block	40,000.00
10	General Surgery Instruments Sets	2 no. for Hospital Block	60,000.00
11	Uroflowmetery	1 no. for Hospital Block	30,000.00
12	Laparoscopy Set	2 no. for Hospital Block	60,000.00
13	OT Table Electro-Hydraulic	1 no. for Urology	60,000.00
D	**For CTVS Deptt. at Hospital Block**		
1	Heart Lung Machine	2 no. for Hospital Block	3,20,000.00
2	Sternal Saw	2 no. for Hospital Block	24,000.00
3	Surgical Instruments Set for Various Procedures	2 Sets for Hospital Block	1,20,000.00
4	IABP Machine	3 no. for Hospital Block	1,50,000.00
5	ACT Machine	2 no. for Hospital Block	24,000.00
6	Pacemaker Single Chamber-External	2 no. for Hospital Block	10,000.00
7	Pacemaker Dual Chamber-External	2 no. for Hospital Block	12,000.00
E	**Neuro Surgery Deptt. At Hospital Block**		
1	ICP Monitor	2 no. for Hospital Block	8,000.00

2	Neuro Surgical Drill with all attachments.	1 no. for Hospital Block	30,000.00
3	Intra Operative Nerve Monitoring	1 no. for Hospital Block	60,000.00
4	Transcranial Doppler	1 no. for Hospital Block	24,000.00
5	Neuro Surgical Instruments set	2 sets for Hospital Block	1,60,000.00
6	Operating Microscope	1 no. for Hospital Block	5,00,000.00
F	**Surgery Deptt. At Hospital Block**		
1	Laparoscope Set	1 no. for Hospital Block	1,80,000.00
2	Open Surgery Instruments	1 Set for Hospital Block	80,000.00
3	Ultrasonic Cutting & Coagulation	1 no. for Hospital Block	44,000.00
G	**For Endocrionology Deptt. at Hospital Block**		
1	Dexa Scanner (BMD)	1 no. for Hospital Block	80,000.00
H	**For Dermatology Deptt. at Hospital Block**		
1	IPL(Intense Pulse Light System)	1 no. for Hospital Block	36,000.00
2	Radiofrequency ablation (RFA) machine	1 no. for Hospital Block	14,000.00
3	Trinocular Microscope with camera attachment	1 no. for Hospital Block	5,000.00
4	Full body UV phototherapy device	1 no. for Hospital Block	14,000.00

I	**For ENT Deptt. at Hospital Block**		
1	ENT Operating Microscope	1 no. for Hospital Block	1,00,000.00
2	Pure tone Audiometer	1 no. for Hospital Block	10,000.00
3	Tympanometer	1 no. for Hospital Block	11,000.00
4	OAE(screening)	1 no. for Hospital Block	7,000.00
5	BERA with ASSR	1 no. for Hospital Block	16,000.00
6	Endoscopic sinus surgery set	1 no. for Hospital Block	24,000.00
7	Shaver System cum micro drill	1 no. for Hospital Block	16,000.00
8	ENT Workstation	1 no. for Hospital Block	1,00,000.00
9	Surgical instruments- ear Surgical instruments- nose/rhinoplasty Surgical instruments- tonsils & adenoids Surgical instruments- tracheostomy Surgical instruments- microlaryngeal surgery General Surgical instruments- head & neck	1 no. for Hospital Block	50,000.00
10	Bronchoscopy (Adult)	1 no. for Hospital Block	7,000.00
11	Flexible rhino-pharyngo-laryngoscope	1 no. for Hospital Block	10,000.00
J	**For Gyn. & Obs. Deptt. at Hospital Block**		
1	Laparoscopic Surgery Set with Hysterestoscope & resectoscope with High Definition Camera & Monitor	1 no. for Hospital Block	1,50,000.00
2	Portable Ultrasound & Colour Doppler	1 no. for Hospital Block	24,000.00

3	Cardiotocography Machine	1 no. for Hospital Block	20,000.00
4	Gynae OT Table	1 no. for Hospital Block	36,000.00
5	Delivery Bed	1 no. for Hospital Block	10,000.00
6	LEEP SYSTEM with Smoke Evacuator & integrated cart	1 no. for Hospital Block	16,000.00
7	Cryo Surgical System	1 no. for Hospital Block	6,000.00
8	Caesarean set	1 no. for Hospital Block	9,200.00
9	MTP Suction	1 no. for Hospital Block	13,200.00
10	Abdominal/Vaginal Hysterectomy Set	2 no. for Hospital Block	22,000.00
K	**For Pediatrics Deptt. at Hospital Block**		
1	Neonatal open care system	6 no. for Hospital Block	24,000.00
2	Centrifuge machine with hematocrit reader(Capillary)	1 no. for Hospital Block	8,000.00
3	Transport Incubator	1 no. for Hospital Block	8,000.00
4	Bubble CPAP Machine	2 no. for Hospital Block	18,000.00
L	**For Blood Bank Deptt. at Hospital Block**		
1	BIOSEALER	4 no. for Hospital Block	8,000.00
2	BIOSEALER (HAND HELD)	2 no. for Hospital Block	6,000.00

3	DONOR COUCH	4 no. for Hospital Block	40,000.00
4	FOLDING DONOR COUCH (ONE SET - 2 CHAIR WITH ONE TROLLEY)	2 no. for Hospital Block	6,000.00
5	REFRIGERATED BLOOD BAG CENTRIFUGE (12 BAGS)	2 no. for Hospital Block	1,20,000.00
6	BLOOD BANK REFRIGERATOR	4 no. for Hospital Block	20,000.00
7	`-40 DEEP FREEZER Single Door	2 no. for Hospital Block	17,000.00
8	-80 DEEP FREEZER	2 no. for Hospital Block	22,000.00
9	PLATELET AGITATOR & INCUBATOR (96 BAGS)	2 no. for Hospital Block	16,000.00
10	REAGENT REFRIGERATOR (300L)	2 no. for Hospital Block	8,000.00
11	STERILE CONNECTING DEVICE	1 no. for Hospital Block	16,000.00
12	LAMINAR FLOW (SMALL)	1 no. for Hospital Block	6,000.00
13	ELISA READER AND WASHER	2 no. for Hospital Block	14,000.00
14	GEL / BEAD CENTRIFUGE AND INCUBATOR	2 no. for Hospital Block	22,000.00
15	CELL COUNTER (3 PART DIFF.)	1 no. for Hospital Block	7,000.00
16	MOBILE TRANSPORT BOX	4 no. for Hospital Block	10,800.00
17	APHERESIS MACHINE	1 no. for Hospital Block	60,000.00
18	TABLE TOP MICRPLATE CENTRUFUGE	1 no. for Hospital Block	5,000.00

M	**For Physical Medicine & Rehabilitation (PMR) Deptt. at Hospital Block**		
1	Operation theater instruments (as per requirement) See Separate Worksheet	1 SET for Hospital Block	10,000.00
2	Tilt Table (Motorized)	1 no. for Hospital Block	6,000.00
3	Bicycle Ergometry/Recumbent Cycle Excerciser	1 no. for Hospital Block	6,000.00
N	**Other Equipment At Hospital Block**		
1	Multipa Monitors	1 no. for General Medicine + 1no. for Psychiary + 1no. for Obs. & Gyn. + 1no. for Dentistry + 2no. for Cardiology + 4no. for CTVS + 2no. for Neurosurgery + 4no. for Gastroenterology + 5no. for Surgical Oncology + 6no. for Urology + 5no. for Nephrology + 5no. for Emengency & Trauma = 37 nos.	3,24,000.00
2	Syringe Infusion Pumps	64 no. for Aneasthesia + 20no. for Emengency & Trauma + 10no. for Cardiology + 10no. for CTVS + 5no. for Neurosurgery + 4no. for Gastroenterology + 5no. for Surgical Oncology + 5no. for Urology + 30no. for General Medicine & Immunology + 2no. for Obs. & Gyn. = 155 nos.	1,38,200.00
3	Electro Surgical Unit (ESU)	3 no. for Surgery + 1no. for Emengency & Trauma + 2no. for CTVS + 1no. for Neurosurgery + 1no. for Dentistry + 1no. for Gasenterology + 2no. for Urology + 1no. for Pediatric Surgery + 1no. for Dermatology + 2no. for Orthopedics = 15 nos.	2,67,000.00

4	Electro Surgical Unit (ESU) with Vessel Sealing	1 no. for Surgery + 1no. for Obs. & Gyn. + 2no. for Surgical Oncology = 4 nos.	1,48,000.00
5	Suction Machine	4 no. for Surgery + 4no. for General Medicine & Immunology + 2no. for Orthopaedics + 3no. for Cardiology + 2no. for CTVS + 2no. for Neurosurgery + 1no. for Surgical Oncology + 2no. for Pediatric Surgery + 12no. for Aneasthesia = 32 nos.	67,600.00
6	OT Table Electro-Hydraulic	1 no. for Surgery + 1no. for Ophthalmology + 2no. for Dematology + 2no. for CTVS + 1no. for Neurosurgery + 1no. for Surgical Oncology + 2no. for Emergency & Trauma = 10 nos.	4,86,000.00
7	OT Table Hydraulic	1 no. for Surgery	16,000.00
8	C-Arm with IITV	2 no. for Orthopaedics + 1no. for Neurosurgery + 1no. for Urology + 1no. for Nephrology = 5 nos.	3,90,000.00
9	Defibrillator	2 no. for General Medicine & Immunology + 2no. for Cardiology + 3no. for CTVS + 1no. for Neurosurgery + 1no. for Medical Oncology + 1 no. for Urology + 4no. for Emergency & Trauma = 15 nos.	1,26,000.00
10	BiPAP/CPAP	3 no. for General Medicine & Immunology	12,000.00
11	ECG Machine 12-channels	2 no. for General Medicine & Immunology + 1no. for Cardiology + 1no. for CTVS + 1no. for Medical Oncology + 5no. for Aneasthesia + 2 no. for Emergency & Trauma = 12 nos.	24,000.00

12	Pulse Oximeter	6 no. for Pediatrics + 2no. for Neurology = 8 nos.	20,000.00

(1)The bidders are required to be registered at HSCC e-tender portal www.tenderwizard.com/HSCC. Please log on to www.tenderwizard.com/HSCC only for downloading bid document and for participation through **E-tendering basis.** For submission and other details please refer HSCC e-tender portal www.tenderwizard.com/HSCC. For submission of the bids, the bidders are required to have Digital Signature Certificate (DSC) from the authorized Certifying Authorities.

Complete set of Bid Documents has been made available at E-Tender portal www.tenderwizard.com/HSCC, www.hsccltd.com , CPPP Portal for downloading from **03.12.2019 to 31.12.2019**. Prospective bidders are advised to regularly scan through HSCC E-tender portal www.tenderwizard.com/HSCC , www.hsccltd.com & CPPP as corrigendum/modification/amendments, if any, will be notified on these portal only and no separate advertisement will be made for this.

(2)**Tender Enquiry No.:** HSCC/AIIMS RAEBARELI/Hospital/2/2019 Dated 28.11.2019

Sl. No.	Description	Schedule
i.	Dates of sale of tender enquiry documents	**03.12.2019 to 31.12.2019 13.00 hrs to 1700 hrs IST**
ii.	Place of sale of Tender Enquiry Documents	HSCC (India) Ltd, Plot No. 6-A, Block-E, Sector-1, Noida (U.P)-201301
iii.	Cost of the Tender Enquiry Document	Nil
iv.	Pre Bid Meeting Date & Time	**12.12.2019, 10.30 AM IST**
v.	Pre Tender Meeting Venue	HSCC (India) Ltd, Plot No. 6-A, Block-E, Sector-1, Noida (U.P)-201301
vi.	Closing date & time for receipt of Tender	**31.12.2019, 1430 hrs IST**
vii.	Time and date of opening of Techno – Commercial tenders	**31.12.2019, 1500 hrs IST**
viii.	Venue of Opening of Techno Commercial Tender	Same as 2 (ii)

2. Interested tenderers may obtain further information about this requirement from this office inviting the tenders.
3. The prospective bidders who have not registered can register with E-procurement system of NIC by paying necessary registration charges. The bidders may prepare a banker cheque/Draft in favour of HSCC (India) Ltd. Office at Noida, payable at Noida/Delhi and deposit it. In order to submit the bids electronically bidders are required to have type-II Digital Signature Certificate. Digital Signature can be obtained from any of the certifying agency.

The tender shall be submitted all the necessary documents and in physical form (with respect to few documents as mentioned in the SIT) in parts/covers as mentioned below:

Part-I In Original Offline (In separate Envelope) & Copy Online

(i) Tender Fee and EMD
(ii) Affidavit as per Section XIX

(iii) Technical compliance for the quoted goods vis-à-vis the Technical specifications and with all related brochures/catalogues in the tender enquiry, technical bid.
(NOTE : Submit : *"Compliance report in a tabulated and point wise manner clearly highlighting the parameters in technical literature/data sheets /brochure/ Certificates.)*

Part-II Online

(i) Tender Fee and EMD
(ii) Power of Attorney
(iii)Tender Form as per section X.
(iv)Manufacturers Authorization Form
(iv) Affidavit as per Section XIX
(vi) Proforma A
(vii) Performance statement along with required PO copies and its corresponding end user‟s satisfactory performance certificate as per section IX.
Technical compliance for the quoted goods vis-à-vis the Technical specifications.
(NOTE : Submit : *"Compliance report in a tabulated and point wise manner clearly highlighting the parameters in technical literature/data sheets /brochure/ Certificates.)*
(viii) Name, address and details of account with respect to bidder and/or beneficiary of L/C. Copy of PAN. Certificate of Incorporation/Declaration being a proprietary firm.
(x) Audited Annual report of last 3 completed financial years (Balance sheet and Profit & Loss Account). Certificate of Regn. Issued by Directorate of Industries/NSIC, if SSI unit.
(xi) Quality Control Requirements as per Section VIII

Price Bid (Only online).
- Price Schedule
- CMC Price Schedule
- Turnkey Price Schedule

4. All prospective tenderers may attend the Pre Tender meeting. For all the above tender IDs, Pre-bid meeting shall be held as mentioned above.

5. To participate in the submission against the tender, it is mandatory for the Applicants to get digital signature and get themselves registered with e-tendering system.

6. Complete set of Bid Documents has been made available at E-Tender portal www.tenderwizard.com/HSCC, www.hsccltd.com for downloading. The cost the Tender Enquiry Document is **free of cost**. Tenderer may download the tender enquiry documents from the website and submit its tender online after logging in to their user ID. The bidders are required to be registered at HSCC e-tender portal www.tenderwizard.com/HSCC. Please log on to www.tenderwizard.com/HSCC only for uploading its tender on-line for participation through **E-Tendering basis**. For submission and other details, please refer HSCC e-tender portal www.tenderwizard.com/HSCC.

7. Tenderers shall ensure that their tenders, complete in all respects, are submitted online and desired hard copies in original dropped in the Tender Box located at HSCC (India) Ltd., E-6A, Sector-1, Noida, U.P.-201301 on or before the closing date and time indicated above, failing which the tenders will be treated as late and rejected.

8. In the event of any of the above mentioned dates being declared as a holiday /closed day for the purchase organisation, the physical form of tenders will be received/opened on the next working day at the appointed time. Bidders are requested to regularly visit website www.tenderwizard.com/HSCC & www.hsccltd.com for corrigendum/amendments etc., if any, as these there no separate advertisement for them.

9. Purchaser/HSCC reserves the right to annul the tendering process at any stage without assigning any reason thereof.

Sr. CGM-I
HSCC (India) Ltd
NOIDA

SECTION - II

GENERAL INSTRUCTIONS TO TENDERERS (GIT)
CONTENTS

GENERAL INSTRUCTIONS TO TENDERERS (GIT)

A. PREAMBLE

1. Definitions and Abbreviations

1.1 The following definitions and abbreviations, which have been used in these documents shall have the meanings as indicated below:

1.2. Definitions:

(i) "Purchaser" means the organization purchasing goods and services as incorporated in the Tender Enquiry document i.e. Director, AIIMS, Munshiganj, Raebareli-229405, U.P., India.
(ii) "Tender" means Bids / Quotation / Tender received from a Firm / Tenderer / Bidder.
(iii) "Tenderer" means Bidder/ the Individual or Firm submitting Bids / Quotation / Tender
(iii) "Supplier" means the individual or the firm supplying the goods and services as incorporated in the contract.
(iv) "Goods" means the instruments, machinery, equipment, medical equipment, etc. which the supplier is required to supply to the purchaser under the contract.
(v) "Services" means services allied and incidental to the supply of goods, such as transportation, installation, commissioning, provision of technical assistance, training, after sales service, maintenance service and other such obligations of the supplier covered under the contract.
(vi) "Earnest Money Deposit" (EMD) means Bid Security/ monetary or financial guarantee to be furnished by a tenderer along with its tender.
(vii) "Contract" means the written agreement entered into between the purchaser and/or consignee and the supplier, together with all the documents mentioned therein and including all attachments, annexure etc. therein.
(viii) "Performance Security" means monetary or financial guarantee to be furnished by the successful tenderer for due performance of the contract placed on it. Performance Security is also known as Security Deposit.
(ix) "Consignee" means Director, AIIMS Raebareli/person to whom the goods are required to be delivered as specified in the Contract. If the goods are required to be delivered to a person as an interim consignee for the purpose of despatch to another person as provided in the Contract then that "another" person is the consignee, also known as ultimate consignee.
(x) HSCC (India) Ltd is the executing agency for and on behalf of the Purchaser.
(xi) "Specification" means the document/standard that prescribes the requirement with which goods or service has to conform.
(xii) "Inspection" means activities such as measuring, examining, testing, gauging one or more characteristics of the product or service and comparing the same with the specified requirement to determine conformity.
(xiii) "Day" means calendar day.

1.3 Abbreviations:

(i) "TE Document" means Tender Enquiry Document
(ii) "NIT" means Notice Inviting Tenders.
(iii) "GIT" means General Instructions to Tenderers

(iv) "SIT" means Special Instructions to Tenderers
(v) "GCC" means General Conditions of Contract
(vi) "SCC" means Special Conditions of Contract
(vii) "DGS&D" means Directorate General of Supplies and Disposals
(viii) "NSIC" means National Small Industries Corporation
(ix) "PSU" means Public Sector Undertaking
(x) "CPSU" means Central Public Sector Undertaking
(xi) "LSI" means Large Scale Industry
(xii) "SSI" means Small Scale Industry
(xiii) "LC" means Letter of Credit
(xiv) "DP" means Delivery Period
(xv) "BG" means Bank Guarantee
(xvi) "ED" means Excise Duty
(xvii) "CD" means Custom Duty
(xviii) "VAT" means Value Added Tax
(xix) "CENVAT" means Central Value Added Tax
(xx) "CST" means Central Sales Tax
(xxi) "RR" means Railway Receipt
(xxii) "BL" means Bill of Lading
(xxiii) "FOB" means Free on Board
(xxiv) "FCA" means Free Carrier
(xxv) "FOR" means Free On Rail
(xxvi) "CIF" means Cost, Insurance and Freight
(xxvii) "CIP (Destinations)" means Carriage and Insurance Paid up to named port of destination. Additionally the Insurance (local transportation and storage) would be extended and borne by the Supplier from ware house to the consignee site for a period including 3 months beyond date of delivery.
(xxviii) "DDP" means Delivery Duty Paid named place of destination (consignee site)
(xxix) "INCOTERMS" means International Commercial Terms as on the date of Tender Opening
(xxx) "CMC" means Comprehensive maintenance Contract (labour, spare and preventive maintenance)
(xxxi) "RT" means Re-Tender.

2. Introduction

2.1 The Purchaser has issued these TE documents for purchase of goods and related services as mentioned in Section – VI – "List of Requirements", which also indicates, *interalia,* the required delivery schedule, terms and place of delivery.

2.2 This section (Section II - "General Instruction Tenderers") provides the relevant information as well as instructions to assist the prospective tenderers in preparation and submission of tenders. It also includes the mode and procedure to be adopted by the purchaser for receipt and opening as well as scrutiny and evaluation of tenders and subsequent placement of contract.

2.3 The tenderers shall also read the Special Instructions to Tenderers (SIT) related to this purchase, as contained in Section III of these documents and follow the same accordingly. Whenever there is a conflict between the GIT and the SIT, the provisions contained in the SIT shall prevail over those in the GIT.

2.4 Before formulating the tender and submitting the same to the purchaser, the tenderer should read and examine all the terms, conditions, instructions, checklist etc. contained in the TE documents. Failure to provide and/or comply with the required information,

instructions etc. incorporated in these TE documents may result in rejection of its tender.

3. Availability of Funds

3.1 Expenditure to be incurred for the proposed purchase will be met from the funds available with the purchaser/consignee.

4. Language of Tender

4.1 The tender submitted by the tenderer and all subsequent correspondence and documents relating to the tender exchanged between the tenderer and the purchaser, shall be written in the English language, unless otherwise specified in the Tender Enquiry. However, the language of any printed literature furnished by the tenderer in connection with its tender may be written in any other language provided the same is accompanied by an English translation and, for purposes of interpretation of the tender, the English translation shall prevail**.**

4.2 The tender submitted by the tenderer and all subsequent correspondence and documents relating to the tender exchanged between the tenderer and the purchaser, may also be written in the Hindi language, provided that the same are accompanied by English translation, in which case, for purpose of interpretation of the tender etc, the English translations shall prevail.

5. Eligible Tenderers

5.1 This invitation for tenders is open to all suppliers who fulfil the eligibility criteria specified in these documents.

6. Eligible Goods and Services

6.1 All goods and related services to be supplied under the contract shall have their origin in India or any other country with which India has not banned trade relations. The term "origin" used in this clause means the place where the goods are mined, grown, produced, or manufactured or from where the related services are arranged and supplied.

7. Tendering Expense

7.1 The tenderer shall bear all costs and expenditure incurred and/or to be incurred by it in connection with its tender including preparation, mailing and submission of its tender and for subsequent processing the same. The purchaser will, in no case be responsible or liable for any such cost, expenditure etc regardless of the conduct or outcome of the tendering process.

B. TENDER ENQUIRY DOCUMENTS

8. Content of Tender Enquiry Documents

8.1 In addition to Section I – "Notice inviting Tender" (NIT), the TE documents include:

- Section II – General Instructions to Tenderers (GIT)
- Section III – Special Instructions to Tenderers (SIT)
- Section IV – General Conditions of Contract (GCC)
- Section V – Special Conditions of Contract (SCC)
- Section VI – List of Requirements
- Section VII – Technical Specifications
- Section VIII – Quality Control Requirements
- Section IX – Qualification Criteria
- Section X – Tender Form

- Section XI – Price Schedules
- Section XII – Questionnaire
- Section XIII – Bank Guarantee Form for EMD
- Section XIV – Manufacturer's Authorisation Form
- Section XV – Bank Guarantee Form for Performance Security/CMC Security
- Section XVI – Contract Forms A & B
- Section XVII – Proforma of Consignee Receipt Certificate
- Section XVIII – Proforma of Final Acceptance Certificate by the consignee
- Section XIX – Affidavit
- Section XX – Check List
- Section XXI – Consignee

8.2 The relevant details of the required goods and services, the terms, conditions and procedure for tendering, tender evaluation, placement of contract, the applicable contract terms and, also, the standard formats to be used for this purpose are incorporated in the above-mentioned documents. The interested tenderers are expected to examine all such details etc to proceed further.

9. Amendments to TE documents

9.1 At any time prior to the deadline for submission of tenders, the purchaser may, for any reason deemed fit by it, modify the TE documents by issuing suitable amendment(s) to it.

9.2 Such an amendment will be notified in the referred website only.

9.3 In order to provide reasonable time to the prospective tenderers to take necessary action in preparing their tenders as per the amendment, the purchaser may, at its discretion extend the deadline for the submission of tenders and other allied time frames, which are linked with that deadline.

10. Clarification of TE documents

10.1 A tenderer requiring any clarification or elucidation on any issue of the TE documents may take up the same with the purchaser **in writing on or before the due date of pre-bid meeting**. No queries will be entertained later on. The purchaser will respond in writing to such request as per the schedule.

C. PREPARATION OF TENDERS

11. Documents Comprising the Tender

11.1 The bids shall be submitted online and in physical form in three parts/covers as mentioned below:
(i) Tender Fee, EMD, Pre-qualification as per Tender Terms and referred in checklist at section XIX and as mentioned in para A below.
(ii) Technical Bid
(iii) Price Bid (Only online).

Tenderers are requested not to submit the hard copy of Price Bid along with the physical form of tender. In case the hard copy of price bid is submitted in physical form, the tender shall be straightway rejected. Also, uploading of the price bid in prequalification bid or technical bid will result in rejection of the tender.

A) <u>Techno – Commercial Tender (Un priced Tender)</u>

i) Earnest money furnished in accordance with GIT clause 19.1 alternatively, documentary evidence as per GIT clause 19.2 for claiming exemption from payment of earnest money.
ii) Tender Form as per Section X (without indicating any prices).
iii) Documentary evidence, as necessary in terms of clauses 5 and 17 establishing that the tenderer is eligible to submit the tender and, also, qualified to perform the contract if its tender is accepted.
iv) Tenderer/Agent who quotes for goods manufactured by other manufacturer shall furnish Manufacturer's Authorisation Form.
v) Power of Attorney in favour of signatory of TE documents.
vi) Documents and relevant details to establish in accordance with GIT clause 18 that the goods and the allied services to be supplied by the tenderer conform to the requirement of the TE documents.
vii) Performance Statement as per section IX along with relevant copies of orders and end users' satisfaction certificate/Installation Reports.
viii) Certificate of Incorporation in the country of origin.

B) Price Tender:

1. Prices are to be quoted in the attached Price Bid format online as per the directionson the official website.

2. The price should be quoted for the accounting unit indicated on the website.

The bidder shall not submit hard copy of financial bid otherwise his tender shall be straightway rejected. Also, uploading the price bid in prequalification bid or technical bid will result in rejection of the tender.

Note:
It is the responsibility of tenderer to go through the TE document to ensure furnishing all required documents in addition to above, if any.

11.2 A person signing (manually or digitally) the tender form or any documents forming part of the contract on behalf of another shall be deemed to warrantee that he has authority to bind such other persons and if, on enquiry, it appears that the persons so signing had no authority to do so, the purchaser may, without prejudice to other civil and criminal remedies, cancel the contract and hold the signatory liable for all cost and damages

11.3 A tender, which does not fulfil any of the above requirements and/or gives evasive information/reply against any such requirement, shall be liable to be ignored and rejected.

11.4 Tender sent by fax/telex/cable/electronically shall be ignored.

12. Tender currencies

12.1 The tenderer supplying indigenous goods or already imported goods shall quote only in Indian Rupees.

12.2 For imported goods if supplied directly from abroad, prices shall be quoted in any freely convertible currency say US Dollar, Euro, GBP or Yen. As regards price(s) for allied services, if any required with the goods, the same shall be quoted in Indian Rupees only if such services are to be performed /undertaken in India. Commission for Indian Agent,

if any and if payable shall be indicated in the space provided for in the price schedule and will be payable in Indian Rupees only.

12.3 Tenders, where prices are quoted in any other way shall be treated as non -responsive and rejected.

13 Tender Prices

13.1 The Tenderer shall indicate on the Price Schedule provided under Section XI all the specified components of prices shown therein including the unit prices and total tender prices of the goods and services it proposes to supply against the requirement. All the columns shown in the price schedule should be filled up as required. If any column does not apply to a tenderer, same should be clarified as "NA" by the tenderer.

13.2 If there is more than one schedule in the List of Requirements, the tenderer has the option to submit its quotation for any one or more schedules and, also, to offer special discount for combined schedules. However, while quoting for a schedule, the tenderer shall quote for the complete requirement of goods and services as specified in that particular schedule.

13.3 The quoted prices for goods offered from within India and that for goods offered from abroad are to be indicated separately in the applicable Price Schedules attached under Section XI. Bidders must quote the prevailing taxes and duties as applicable.

13.4 While filling up the columns of the Price Schedule, the following aspects should be noted for compliance:

13.4.1 For domestic goods or goods of foreign origin located within India, the prices in the corresponding price schedule shall be entered separately in the following manner:

a) the price of the goods, quoted ex-factory/ ex-showroom/ ex-warehouse/ off-the-shelf, as applicable, including all taxes and duties like sales tax, CST VAT, CENVAT, Custom Duty, Excise Duty etc. already paid or payable on the components and raw material used in the manufacture or assembly of the goods quoted ex-factory etc. or on the previously imported goods of foreign origin quoted ex-showroom etc;
b) any sales or other taxes and any duties including excise duty, which will be payable on the goods in India if the contract is awarded;
c) charges towards Packing & Forwarding, Inland Transportation, Insurance (local transportation and storage) would be borne by the Supplier from ware house to the consignee site for a period including 3 months beyond date of delivery, Loading/Unloading and other local costs incidental to delivery of the goods to their final destination as specified in the List of Requirements and Price Schedule;
d) the price of Incidental Services, as mentioned in List of Requirements and Price Schedule;
e) the prices of Turnkey (if any), as mentioned in List of Requirements, Technical Specification and Price Schedule; and
f) the price of annual CMC, as mentioned in List of Requirements, Technical Specification and Price Schedule.

13.4.2 For goods offered from abroad, the prices in the corresponding price schedule shall be entered separately in the following manner:

a) The price of goods quoted FOB/FCA port of shipment, as indicated in the List of Requirements and Price Schedule;
b) the price of goods quoted CIP (name port of destination) in India as indicated in the List of Requirements, Price Schedule and Consignee List;
c) the charges for Insurance (local transportation and storage) would be extended and borne by the Supplier from ware house to the consignee site for a period including 3

months beyond date of delivery. Other local costs and Incidental costs, as specified in the List of Requirements and Price Schedule;

d) the charges for Incidental Services, as in the List of Requirements and Price Schedule;
e) the prices of Turnkey (if any), as mentioned in List of Requirements, Technical Specification and Price Schedule; and
f) the Total tender price of goods quoted CIP basis at consignee site in India as indicated in the List of Requirements, Price Schedule and Consignee List + quoted custom duty + quoted IGST
g) the price of annual CMC, as mentioned in List of Requirements, Technical Specification and Price Schedule.

13.5 Additional information and instruction on Duties and Taxes:

13.5.1 If the Tenderer desires to ask for excise duty, sales tax/ VAT, Service Tax, Works Contract Tax etc. to be paid extra, the same must be specifically stated. In the absence of any such stipulation the price will be taken inclusive of such duties and taxes and no claim for the same will be entertained later.

13.5.2 Excise Duty:

a) If reimbursement of excise duty is intended as extra over the quoted prices, the supplier must specifically say so also indicating the rate, quantum and nature of the duty applicable. In the absence of any such stipulation it will be presumed that the prices quoted are firm and final and no claim on account of excise duty will be entertained after the opening of tenders.
b) If a Tenderer chooses to quote a price inclusive of excise duty and also desires to be reimbursed for variation, if any, in the excise duty during the time of supply, the tenderer must clearly mention the same and also indicate the rate and quantum of excise duty included in its price. Failure to indicate all such details in clear terms may result in rejection of that tender.
c) Subject to sub clauses 13.5.2 (a) & (b) above, any change in excise duty upward/downward as a result of any statutory variation in excise duty taking place within contract terms shall be allowed to the extent of actual quantum of excise duty paid by the supplier. In case of downward revision in excise duty, the actual quantum of reduction of excise duty shall be reimbursed to the purchaser by the supplier. All such adjustments shall include all reliefs, exemptions, rebates, concession etc. if any obtained by the supplier.

13.5.3 Sales Tax:

If a tenderer asks for sales tax/ VAT, Service Tax and Works Contract Tax to be paid extra, the rate and nature of sales tax applicable should be shown separately. The sales tax / VAT, Service Tax and Works Contract Tax will be paid as per the rate at which it is liable to be assessed or has actually been assessed provided the transaction of sale is legally liable to sales tax / VAT, Service Tax and Works Contract Tax and is payable as per the terms of the contract. If any refund of Tax is received at a later date, the Supplier must return the amount forth-with to the purchaser.

13.5.4 Octroi Duty and Local Duties & Taxes:

Normally, goods to be supplied to government departments against government contracts are exempted from levy of town duty, Octroi duty, terminal tax and other levies of local bodies. However, on some occasions, the local bodies (like town body, municipal body etc.) as per their regulations allow such exemptions only on production of certificate to this effect from the concerned government department. Keeping this in

view, the supplier shall ensure that the stores to be supplied by the supplier against the contract placed by the purchaser are exempted from levy of any such duty or tax and, wherever necessary, obtain the exemption certificate from the purchaser.
However, if a local body still insists upon payment of such local duties and taxes, the same should be paid by the supplier to the local body to avoid delay in supplies and possible demurrage charges and obtain a receipt for the same. The supplier should forward the receipt obtained for such payment to the purchaser to enable the purchaser reimburse the supplier and take other necessary action in the matter.

13.5.5 Customs Duty:

The Purchaser will reimburse the Customs duty wherever applicable. Supplier shall be responsible for customs clearances of the consignments and custom clearance charges will be borne by the supplier.

13.6 For transportation of imported goods offered from abroad, relevant instructions as incorporated under GCC Clause 10 shall be followed.

13.7 For insurance of goods to be supplied, relevant instructions as provided under GCC Clause 11 shall be followed.

13.8 Unless otherwise specifically indicated in this TE document, the terms FCA, FOB, FAS, CIF, CIP, DDP etc. for imported goods offered from abroad, shall be governed by the rules & regulations prescribed in the current edition of INCOTERMS, published by the International Chamber of Commerce, Paris

13.9 The need for indication of all such price components by the tenderers, as required in this clause (viz., GIT clause 13) is for the purpose of comparison of the tenders by the purchaser and will no way restrict the purchaser's right to award the contract on the selected tenderer on any of the terms offered.

14. Indian Agent

14.1 If a foreign tenderer has engaged an agent in India in connection with its tender, the foreign tenderer, in addition to indicating Indian agent's commission, if any, in a manner described under GIT sub clause 12.2 above, shall also furnish the following information:

a) The complete name and address of the Indian Agent and its permanent income tax account number as allotted by the Indian Income Tax authority.
b) The details of the services to be rendered by the agent for the subject requirement.
c) Details of Service outlets in India, nearest to the consignee(s), to render services during Warranty and CMC period.
d) Copy of the agreement between Indian Agent & their principal detailing the scope of work/services during warranty & after sales periods.

15. Firm Price

15.1 Unless otherwise specified in the SIT, prices quoted by the tenderer shall remain firm and fixed during the currency of the contract and not subject to variation on any account.

15.2 However, as regards taxes and duties, if any, chargeable on the goods and payable, the conditions stipulated in GIT clause 13 will apply.

16. Alternative Tenders

16.1 Alternative Tenders are not permitted.

16.2 However the Tenderers can quote alternate models meeting the tender specifications of same manufacturer with single EMD.

17 Documents Establishing Tenderer's Eligibility and Qualifications

17.1 Pursuant to GIT clause 11, the tenderer shall furnish, as part of its tender, relevant details and documents establishing its eligibility to quote and its qualifications to perform the contract if its tender is accepted.

17.2 The documentary evidence needed to establish the tenderer's qualifications shall fulfil the following requirements:

a) in case the tenderer offers to supply goods, which are manufactured by some other firm, the tenderer has been duly authorised by the goods manufacturer to quote for and supply the goods to the purchaser. The tenderer shall submit the manufacturer's authorization letter to this effect as per the standard form provided under Section XIV in this document.
b) the tenderer has the required financial, technical and production capability necessary to perform the contract and, further, it meets the qualification criteria incorporated in the Section IX in these documents.
c) in case the tenderer is not doing business in India, it is duly represented by an agent stationed in India fully equipped and able to carry out the required contractual functions and duties of the supplier including after sale service, maintenance & repair etc. of the goods in question, stocking of spare parts and fast moving components and other obligations, if any, specified in the conditions of contract and/or technical specifications.

18. Documents establishing Good's Conformity to TE document.

18.1 The tenderer shall provide in its tender the required as well as the relevant documents like technical data, literature, drawings etc. to establish that the goods and services offered in the tender fully conform to the goods and services specified by the purchaser in the TE documents. For this purpose the tenderer shall also provide a clause-by-clause commentary on the technical specifications and other technical details incorporated by the purchaser in the TE documents to establish technical responsiveness of the goods and services offered in its tender.

18.2 In case there is any variation and/or deviation between the goods & services prescribed by the purchaser and that offered by the tenderer, the tenderer shall list out the same in a chart form without ambiguity and provide the same along with its tender.

18.3 If a tenderer furnishes wrong and/or misguiding data, statement(s) etc. about technical acceptability of the goods and services offered by it, its tender will be liable to be ignored and rejected in addition to other remedies available to the purchaser in this regard.

19. Earnest Money Deposit (EMD)

19.1 Pursuant to GIT clauses 8.1 and 11.1 the tenderer shall furnish along with its tender, earnest money for amount as shown in the List of Requirements. The earnest money is required to protect the purchaser against the risk of the tenderer's unwarranted conduct as amplified under sub-clause 19.7 below.

19.2 The tenderers who are currently registered and, also, will continue to remain registered during the tender validity period with Directorate General of Supplies & Disposals or with National Small Industries Corporation, New Delhi for the specific goods as per tender enquiry specification shall be eligible for exemption from EMD. Vague

stipulations in the Registration Certificate such as "to customers' specification" etc. will not be acceptable for exemption from furnishing of earnest money. In case the tenderer falls in these categories, it should furnish copy of its valid registration details (with DGS&D or NSIC, as the case may be)

19.3 The earnest money shall be denominated in Indian Rupees as per GIT clause 12.2. The earnest money shall be furnished in one of the following forms:

i) Account Payee Demand Draft
ii) Banker's cheque and
iii) Bank Guarantee
iv) FDR

19.4 The demand draft or banker's cheque shall be drawn on any commercial bank in India or country of the tenderer, in favour of the **"HSCC (India) Ltd"** payable at New Delhi/Noida. In case of bank guarantee, the same is to be provided from any commercial bank in India or country of the tenderer as per the format specified under Section XIII in these documents.

19.5 The earnest money shall be valid for a period of forty-five (45) days beyond the validity period of the tender. As validity period of Tender as per Clause 20 of GIT is 120 days, the EMD shall be valid for 165 days from the **original last date** for submission of the tender/bid.

19.6 Unsuccessful tenderers' earnest money will be returned to them without any interest, after expiry of the tender validity period, but not later than thirty days after conclusion of the resultant contract. Successful tenderer's earnest money will be returned without any interest, after receipt of performance security from that tenderer.

19.7 Earnest Money is required to protect the purchaser against the risk of the Tenderer's conduct, which would warrant the forfeiture of the EMD. Earnest money of a tenderer will be forfeited, if the tenderer withdraws or amends its tender or impairs or derogates from the tender in any respect within the period of validity of its tender or if it comes to notice that the information/documents furnished in its tender is incorrect, false, misleading or forged without prejudice to other rights of the purchaser. The successful tenderer's earnest money will be forfeited without prejudice to other rights of Purchaser if it fails to furnish the required performance security within the specified period.

19.8 In the case of Bank Guarantee furnished from banks outside India (i.e. foreign Banks), it should be authenticated and countersigned by any nationalised bank in India by way of back-to-back counter guarantee.

20. Tender Validity

20.1 If not mentioned otherwise in the SIT, the tenders shall remain valid for acceptance for a period of 120 days (One hundred and twenty days) after the date of tender opening prescribed in the TE document. Any tender valid for a shorter period shall be treated as unresponsive and rejected.

20.2 In exceptional cases, the tenderers may be requested by the purchaser to extend the validity of their tenders up to a specified period. Such request(s) and responses thereto shall be conveyed by surface mail or by fax/ telex/cable followed by surface mail. The tenderers, who agree to extend the tender validity, are to extend the same without any change or modification of their original tender and they are also to extend the validity period of the EMD accordingly. A tenderer, however, may not agree to extend its tender validity without forfeiting its EMD.

20.3 In case the day up to which the tenders are to remain valid falls on/ subsequently declared a holiday or closed day for the purchaser, the tender validity shall automatically be extended up to the next working day.

21. Signing and Sealing of Tender

21.1 The tenderers shall submit their tenders as per the instructions contained in GIT Clause 11.

21.2 The original and other copies of the tender shall either be typed or written in indelible ink and the same shall be signed by the tenderer or by a person(s) who has been duly authorized to bind the tenderer to the contract. The letter of authorization shall be by a written power of attorney, which shall also be furnished along with the tender.

21.3 The tender shall be duly signed at the appropriate places as indicated in the TE documents and all other pages of the tender including printed literature, if any shall be initialled by the same person(s) signing the tender. The tender shall not contain any erasure or overwriting, except as necessary to correct any error made by the tenderer and, if there is any such correction; the same shall be initialled by the person(s) signing the tender.

D. SUBMISSION OF TENDERS

22. Submission of Tenders

22.1 The tender shall be submitted online and in physical form (except price bid) in three parts/covers as mentioned below:

(i) Tender Fee and EMD (Both online and physical)

(ii) Pre-qualification and Technical compliance as per following documents (Online submissions for all the documents and physical submission only for affidavit as per point i) below and original Technical brochures/catalogues against point j):

a) Manufacturer‟s authorization in case bid is submitted by an Indian agent (A declaration must be attached here in case directly quoted by a manufacturer or a document establishing the relation of the Indian office with the manufacturer in case quoted by Indian office of the manufacturer).
b) b) Tender Form as per section X.
c) c) Copy of PAN.
d) Certificate of Incorporation/Declaration being a proprietary firm.
e) Annual report of last 3 years (Balance sheet and Profit & Loss Account)
f) Name, address and details of account with respect to bidder and/or beneficiary of L/C.
g) Quality Control Requirements as per Section VIII
h) Performance statement along with required PO copies and its corresponding end user‟s satisfactory performance certificate as per section IX.
i) Affidavit as per Section XIX
j) Technical Bid along with clause-by-clause technical compliance statement for the quoted goods vis-à-vis the Technical specifications in the tender enquiry (Both online and physical)

(iii) Price Bid (Only online).

Bidders are requested not to submit the hard copy of Price Bid along with the physical form of tender. Uploading of the price bid in prequalification bid or technical bid will result in rejection of the tender.
Unless otherwise specified, the tenderers are to submit its tender online and deposit the physical form of tenders in the tender box kept for this purpose at HSCC (India) Ltd., E-6A, Sector-1, Noida-201301, ((UP).

22.2 The tenderers must ensure that they deposit their tenders not later than the closing time and date specified for submission of tenders. It is the responsibility of the tenderer to ensure that their Tenders whether sent by post or by courier or by person, are dropped in the Tender Box by the specified clearing date and time. In the event of the specified date for physical submission of tender falls on /is subsequently declared a holiday or closed day for the purchaser, the tenders will be received up to the appointed time on the next working day.

23. Late Tender

23.1 A tender, which is received after the specified date and time for receipt of tenders will be treated as "late" tender and will be ignored.

24. Alteration and Withdrawal of Tender

24.1 The tenderer, after submitting its tender, is permitted to alter / modify its tender so long as such alterations / modifications are received duly signed, sealed and marked like the original tender, within the deadline for submission of tenders. Alterations / modifications to tenders received after the prescribed deadline will not be considered.

24.2 No tender should be withdrawn after the deadline for submission of tender and before expiry of the tender validity period. If a tenderer withdraws the tender during this period, it will result in forfeiture of the earnest money furnished by the tenderer in its tender.

E. TENDER OPENING

25. Opening of Tenders

25.1 The purchaser will open the tenders at the specified date and time and at the specified place as indicated in the NIT.

In case the specified date of tender opening falls on / is subsequently declared a holiday or closed day for the purchaser, the tenders will be opened at the appointed time and place on the next working day.

25.2 Authorized representatives of the tenderers, who have submitted tenders on time may attend the tender opening provided they bring with them letters of authority from the corresponding tenderers.
The tender opening official(s) will prepare a list of the representatives attending the tender opening. The list will contain the representatives' names & signatures and corresponding tenderers' names and addresses.

25.3 The **Techno - Commercial Tenders** are to be opened in the first instance, at the prescribed time and date as indicated in NIT. These Tenders shall be scrutinized and

evaluated by the competent committee/ authority with reference to parameters prescribed in the TE document. During the Techno - Commercial Tender opening, the tender opening official(s) will read the salient features of the tenders like brief description of the goods offered, delivery period, Earnest Money Deposit and any other special features of the tenders, as deemed fit by the tender opening official(s). Thereafter, in the second stage, the Price Tenders of only the Techno - Commercially acceptable offers (as decided in the first stage) shall be opened for further scrutiny and evaluation on a date notified after the evaluation of the Techno – Commercial tender. The prices, special discount if any of the goods offered etc., as deemed fit by tender opening official(s) will be read out.

F. SCRUTINY AND EVALUATION OF TENDERS

26. Basic Principle

26.1 Tenders will be evaluated on the basis of the terms & conditions already incorporated in the TE document, based on which tenders have been received and the terms, conditions etc. mentioned by the tenderers in their tenders. No new condition will be brought in while scrutinizing and evaluating the tenders.

27. Scrutiny of Tenders

27.1 The Purchaser will examine the Tenders to determine whether they are complete, whether any computational errors have been made, whether required sureties have been furnished, whether the documents have been properly signed stamped and whether the Tenders are generally in order.

27.2 Purchaser will determine the responsiveness of each Tender to the TE Document without recourse to extrinsic evidence.

27.3 The tenders will be scrutinized to determine whether they are complete and meet the essential and important requirements, conditions etc. as prescribed in the TE document. The tenders, which do not the meet the basic requirements, are liable to be treated as non – responsive and will be summarily ignored.

27.4 The following are some of the important aspects, for which a tender shall be declared non – responsive and will be summarily ignored;

(i) Tender form as per Section IX (signed and stamped) not enclosed
(ii) Tender is unsigned.
(iii) Tender validity is shorter than the required period.
(iv) Required EMD (Amount, validity etc.)/ exemption documents have not been provided.
(v) Tenderer has quoted for goods manufactured by other manufacturer(s) without the required Manufacturer's Authorisation Form as per Section XIV.
(vi) Tenderer has not agreed to give the required performance security.
(vii) Goods offered are not meeting the tender enquiry specification.
(viii) Tenderer has not agreed to other essential condition(s) specially incorporated in the tender enquiry like terms of payment, liquidated damages clause, warranty clause, dispute resolution mechanism applicable law.
(ix) Poor/ unsatisfactory past performance.
(x) Tenderers who stand deregistered/banned/blacklisted by any Govt. Authorities.
(xi) Tenderer is not eligible as per GIT Clauses 5.1 & 17.1.
(xii) Tenderer has not quoted for the entire quantity as specified in the List of Requirements in the quoted schedule.

27.5 The following are some of the important aspects, for which a tender shall be declared nonresponsive during the evaluation and will be ignored;

(i) The bidder has submitted hard copy of financial bid (only online submission price bids are allowed).
(ii) Tender validity is shorter than the required period.
(iii) Required EMD (Amount, validity etc.)/ exemption documents have not been provided.
(iv) Tenderer has quoted for goods manufactured by other manufacturer(s) without the required Manufacturer‟s Authorisation Form as per Section XIV.
(v) Tenderer has not agreed to give the required performance security of required amount in an acceptable form in terms of GCC clause 5, read with modification, if any, in Section - V – "Special Conditions of Contract", for due performance of the contract.
(vi) Tenderer has not agreed to other essential condition(s) specially incorporated in the tender enquiry like terms of payment, liquidated damages clause, warranty clause, dispute resolution mechanism applicable law.
(vii) Poor/ unsatisfactory past performance.
(viii) Tenderers who stand deregistered/banned/blacklisted by any Govt. Authorities.
(ix) Tenderer is not eligible as per GIT Clauses 5& 17.1.
(x) Tenderer has not quoted for the entire quantity as specified in the List of Requirements in the quoted schedule.
(xi) Tenderer has not agreed for the delivery terms and delivery schedule.

28. Minor Infirmity/Irregularity/Non-Conformity

28.1 If during the preliminary examination, the purchaser find any minor informality and/or irregularity and/or non-conformity in a tender, the purchaser will convey its observation on such 'minor' issues to the tenderer by registered/speed post etc. asking the tenderer to respond by a specified date. If the tenderer does not reply by the specified date or gives evasive reply without clarifying the point at issue in clear terms, that tender will be liable to be ignored.

29 Discrepancies in Prices

29.1 If, in the price structure quoted by a tenderer, there is discrepancy between the unit price and the total price (which is obtained by multiplying the unit price by the quantity), the unit price shall prevail and the total price corrected accordingly, unless the purchaser feels that the tenderer has made a mistake in placing the decimal point in the unit price, in which case the total price as quoted shall prevail over the unit price and the unit price corrected accordingly.

29.2 If there is an error in a total price, which has been worked out through addition and/or subtraction of subtotals, the subtotals shall prevail and the total corrected; and

29.3 If there is a discrepancy between the amount expressed in words and figures, the amount in words shall prevail, subject to sub clause 29.1 and 29.2 above.

29.4 If, as per the judgement of the purchaser, there is any such arithmetical discrepancy in a tender, the same will be suitably conveyed to the tenderer by registered / speed post. If the tenderer does not agree to the observation of the purchaser, the tender is liable to be ignored.

30. Discrepancy between original and copies of Tender

30.1 In case any discrepancy is observed between the text etc. of the original copy and that in the other copies of the same tender set, the text etc. of the original copy shall prevail.

Here also, the purchaser will convey its observation suitably to the tenderer by register / speed post and, if the tenderer does not accept the purchaser's observation, that tender will be liable to be ignored.

31. Qualification Criteria

31.1 Tenders of the tenderers, who do not meet the required Qualification Criteria prescribed in Section IX, will be treated as non - responsive and will not be considered further.

31.2 The Purchaser reserves the right to relax the Norms on Prior Experience for Start-ups and Micro & Small Enterprises in Public Procurement.

The Start-ups are defined in Annexure-A of the "Action Plan for Start-ups in India". The same is available on the website of Department of Industrial policy and Promotion (DIPP), Ministry of Commerce & Industry.

The Notification is available in the below link:

http://www.finmin.nic.in/the_ministry/dept_expenditure/ppcell/RelaxNorms_StarupMedEnterprise25072016.pdf

The FAQs are available in the below link:

http://dipp.nic.in/English/Investor/startupindia/FAQs_StartupIndia_30March2016.pdf

Note:- Definition of Start-up (only for the purpose of Government schemes)

(Ref: Ministry of Finance Office Memorandum No. F.20/2/2014-PPD(Pt.) dated 25th July 2016.)

Start-up means an entity, incorporated or registered in India not prior to five years, with annual turnover not exceeding INR 25 crore in any preceding financial year, working towards innovation, development, deployment or commercialization of new products, processes or services driven by technology or intellectual property.

Provided that such entity is not formed by splitting up, or reconstruction, of a business already inexistence.
Provided also that an entity shall cease to be a Start-up if its turnover for the previous financial years has exceeded INR 25 crore or it has completed 5 years from the date of incorporate on/ registration.

Provided further that a Start-up shall be eligible for tax benefits only after it has obtained certification from the Inter-Ministerial Board, setup for such purpose.

32. Conversion of tender currencies to Indian Rupees

32.1 In case the TE document permits the tenderers to quote their prices in different currencies, all such quoted prices of the responsive tenderers will be converted to a single currency viz., Indian Rupees for the purpose of equitable comparison and evaluation, as per the exchange rates established by the Reserve Bank of India for similar transactions, as on the date of 'Techno-commercial Tender' opening.

33. Equipment-wise Evaluation

33.1 The tenders will be evaluated and compared separately for each equipment. The tender for a schedule will not be considered if the complete requirements prescribed in that schedule are not included in the tender.

34. Comparison of Tenders

34.1 Unless mentioned otherwise in Section – III – Special Instructions to Tenderers and Section – VI – List of Requirements, the comparison of the responsive tenders shall be carried out on Delivery on DDP basis at Consignee site basis, inclusive of applicable taxes, duties, incidental services. The quoted turnkey prices and CMC prices will also be added for comparison/ranking purpose for evaluation.

35. Additional Factors and Parameters for Evaluation & Ranking of Responsive Tenders

35.1 Further to GIT Clause 34 above, the purchaser's evaluation of a tender will include and take into account the following:

i) In the case of goods manufactured in India or goods of foreign origin already located in India, sales tax & other similar taxes and excise duty & other similar duties, Customs Duties, Service Tax, Works Contract Tax etc which will be contractually payable (to the tenderer), on the goods if a contract is awarded on the tenderer; and

ii) in the case of goods of foreign origin offered from abroad, customs duty and other similar import duties/taxes, which will be contractually payable (to the tenderer) on the goods if the contract is awarded on the tenderer.

35.2 The purchaser's evaluation of tender will also take into account the additional factors, if any, incorporated in SIT in the manner and to the extent indicated therein.

35.3 The Purchaser reserves the right to give the price preference to small-scale sectors etc. and purchase preference to central public sector undertakings as per the instruction in vogue while evaluating, comparing and ranking the responsive tenders.

35.4 **Preference to Make in India**: As per the Order issued by Department of Industrial Policy and Promotion (DIPP) vide no. P-45021/2/2017-BE-II dated 15.6.2017 as attached the Purchaser reserves the right to give preference to the local supplier. A copy of this order is enclosed which will form a part of the Tender Enquiry Document for evaluation and ranking of the bids. A local supplier (definition of local supplier is given in Clause 2 of the aforesaid Order of DIPP) has to submit the following along with their tenders failing which their bid will be evaluated without considering such preference mentioned in the DIPP under Order dt. 15.06.207.

a. The local supplier at the time of tender, bidding or solicitation shall be required to provide self certification that the item offered meets the minimum local content and shall give details of the location(s) at which the local value addition is made.

b. In cases of procurement for a value in excess of Rs.10.00 crores, the local supplier shall be required to provide a certificate from the statutory auditor or cost auditor of the company (in the case of companies) or from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local content.

36. Tenderer's capability to perform the contract

36.1 The purchaser, through the above process of tender scrutiny and tender evaluation will determine to its satisfaction whether the tenderer, whose tender has been determined as the lowest evaluated responsive tender is eligible, qualified and capable in all respects to perform the contract satisfactorily. If, there is more than one schedule in the List of Requirements, then, such determination will be made separately for each schedule.

36.2 The above-mentioned determination will, interalia, take into account the tenderer's financial, technical and production capabilities for satisfying all the requirements of the purchaser as incorporated in the TE document. Such determination will be based upon scrutiny and examination of all relevant data and details submitted by the tenderer in its tender as well as such other allied information as deemed appropriate by the purchaser.

37. Contacting the Purchaser

37.1 From the time of submission of tender to the time of awarding the contract, if a tenderer needs to contact the purchaser for any reason relating to this tender enquiry and / or its tender, it should do so only in writing.

37.2 In case a tenderer attempts to influence the purchaser in the purchaser's decision on scrutiny, comparison & evaluation of tenders and awarding the contract, the tender of the tenderer shall be liable for rejection in addition to appropriate administrative actions being taken against that tenderer, as deemed fit by the purchaser.

G. AWARD OF CONTRACT

38. Purchaser's Right to accept any tender and to reject any or all tenders

38.1 The purchaser reserves the right to accept in part or in full any tender or reject any or more tender(s) without assigning any reason or to cancel the tendering process and reject all tenders at any time prior to award of contract, without incurring any liability, whatsoever to the affected tenderer or tenderers.

39. Award Criteria

39.1 Subject to GIT clause 38 above, the contract will be awarded to the lowest evaluated responsive tenderer decided by the purchaser in terms of GIT Clause 36.

40. Variation of Quantities at the Time of Award/ Currency of Contract

40.1 At the time of awarding the contract, the purchaser reserves the right to increase or decrease by up to twenty five (25) per cent, the quantity of goods and services mentioned in the schedule (s) in the "List of Requirements" (rounded of to next whole number) without any change in the unit price and other terms & conditions quoted by the tenderer.

40.2 If the quantity has not been increased at the time of the awarding the contract, the purchaser reserves the right to increase by up to twenty five (25) per cent, the quantity of goods and services mentioned in the contract (rounded of to next whole number) without any change in the unit price and other terms & conditions mentioned in the contract, during the currency of the contract after one year from the Date of Notification of Award.

Further, Purchaser reserves the rights to delete any of the tendered items without assigning any reason whatsoever. Purchaser as deemed fit, out of the total tendered

quantity for the tendered items may place Notification of Award for the quantity as per the requirements and may defer the balance quantity of the item(s) to be supplied later.

41. Notification of Award

41.1 Before expiry of the tender validity period, the purchaser will notify the successful tenderer(s) in writing, by registered/speed post/by fax/ telex/cable (to be confirmed by registered / speed post) that its tender for goods & services, which have been selected by the purchaser, has been accepted, also briefly indicating therein the essential details like description, specification and quantity of the goods & services and corresponding prices accepted. The successful tenderer must furnish to the purchaser the required performance security within thirty days from the date of dispatch of this notification, failing which the EMD will forfeited and the award will be cancelled. Relevant details about the performance security have been provided under GCC Clause 5 under Section IV.

41.2 The Notification of Award shall constitute the conclusion of the Contract.

42. Issue of Contract

42.1 Promptly after notification of award, the Purchaser/Consignee will mail the contract form (as per Section XV) duly completed and signed, in duplicate, to the successful tenderer by registered / speed post.

42.2 Within twenty one days from the date of the contract, the successful tenderer shall return the original copy of the contract, duly signed and dated, to the Purchaser/Consignee by registered / speed post.

42.3 The Purchaser/Consignee reserves the right to issue the Notification of Award consignee wise.

43. Non-receipt of Performance Security and Contract by the Purchaser/Consignee

43.1 Failure of the successful tenderer in providing performance security and / or returning contract copy duly signed in terms of GIT clauses 41 and 42 above shall make the tenderer liable for forfeiture of its EMD and, also, for further actions by the Purchaser/Consignee against it as per the clause 24 of GCC – Termination of default.

44. Return of E M D

44.1 The earnest money of the successful tenderer and the unsuccessful tenderers will be returned to them without any interest, whatsoever, in terms of GIT Clause 19.6.

45. Publication of Tender Result

45.1 The name and address of the successful tenderer(s) receiving the contract(s) will be mentioned in the notice board/bulletin/web site of the purchaser.

46. Corrupt or Fraudulent Practices

46.1 It is required by all concerned namely the Consignee/Tenderers/Suppliers etc to observe the highest standard of ethics during the procurement and execution of such contracts. In pursuance of this policy, the Purchaser: -

(a) defines, for the purposes of this provision, the terms set forth below as follows:

(i) "corrupt practice" means the offering, giving, receiving or soliciting of any thing of value to influence the action of a public official in the procurement process or in contract execution; and

(ii) "fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Purchaser, and includes collusive practice among Tenderers (prior to or after Tender submission) designed to establish Tender prices at artificial non-competitive levels and to deprive the Purchaser of the benefits of free and open competition;

(b) will reject a proposal for award if it determines that the Tenderer recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question;

(c) will declare a firm ineligible, either indefinitely or for a stated period of time, to be awarded a contract by the purchaser if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for, or in executing the contract.

47. <u>Integrity Pact.</u>

The Bidders/bidders may note that it is prescribed to use, practice and observe all the best, clean, ethical, honest and legal means & behaviour maintaining complete transparency and fairness in all activities concerning Bidding and performance thereto for which the "Integrity Pact" shall be executed between Firm and Purchaser as per the format provided as Section XXI to be attached with the bid duly signed.

SECTION - III
SPECIAL INSTRUCTIONS TO TENDERERS
(SIT)

Sl. No.	GIT Clause No.	Topic	SIT Provision	Page No.
A	1 to 7	Preamble	No Change	26
B	8 to 10	TE documents	No Change	26
C	11 to 21	Preparation of Tenders	No Change	26
D	22 to24	Submission of Tenders	No Change	26
E	25	Tender Opening	No Change	26
F	26 to 27	Scrutiny and Evaluation of Tenders	No Change	26
G	36 to 46	Award of Contract	No Change	26

The following Special Instructions to Tenderers will apply for this purchase. These special instructions will modify/substitute/supplement the corresponding General Instructions to Tenderers (GIT) incorporated in Section II. The corresponding GIT clause numbers have also been indicated in the text below: In case of any conflict between the provision in the GIT and that in the SIT, the provision contained in the SIT shall prevail.

Submission of Tenders

(i) All the necessary documents as prescribed in the NIT shall be prepared and scanned in different files (in PDF or JPEG format as prescribed) and uploaded for on-line submission of Proposal. However, physical documents as per NIT to be submitted in **"ORIGINAL"** to HSCC (India) Ltd. before the prescribed date & time for submission of physical tender restricted to the following documents only.

a) Demand Draft towards Tender Fee in favour of HSCC (India) Ltd.
b) EMD in the prescribed format in favour of HSCC (India) Ltd.
c) Technical Data Sheet and original technical literature/ Brochure (if any)
d) Affidavit as per Section XIX

(ii) All document(s)/ information(s) other than above including the Financial Proposal (i.e. FORMAT FOR SUBMISSION OF PRICE BID/FINANCIAL PROPOSAL) should be **uploaded online only** in the prescribed format given in the website. No other mode of submission shall be acceptable.

(iii)The prospective bidders may scan the documents in low resolution **(75 to 100 DPI)** instead of 200 DPI. The documents may be scanned for further lower resolution (if possible). This would reduce the size of the Cover and would be uploaded faster.

(iv) The prospective bidders may upload Drawing files, if any, in **".dwf" format** so that the size of document is less. This is a generic format and all software supports this format.

(v) At the time of cover content creation, the prospective bidders would have to define the document type as **".rar" format**.

(vi) The prospective bidders should be asked to zip all the .dwf files to a .rar file & upload it

SECTION - IV
GENERAL CONDITIONS OF CONTRACT (GCC)
TABLE OF CLAUSES

GENERAL CONDITIONS OF CONTRACT (GCC)

1. Application

1.1 The General Conditions of Contract incorporated in this section shall be applicable for this purchase to the extent the same are not superseded by the Special Conditions of Contract prescribed under Section V, List of requirements under Section VI and Technical Specification under Section VII of this document.
All documents submitted physically or uploaded as scanned copies must be self-attested, legible and numbered.

2. Use of contract documents and information

2.1 The supplier shall not, without the purchaser's prior written consent, disclose the contract or any provision thereof including any specification, drawing, sample or any information furnished by or on behalf of the purchaser in connection therewith, to any person other than the person(s) employed by the supplier in the performance of the contract emanating from this TE document. Further, any such disclosure to any such employed person shall be made in confidence and only so far as necessary for the purposes of such performance for this contract.

2.2 Further, the supplier shall not, without the purchaser's prior written consent, make use of any document or information mentioned in GCC sub-clause 2.1 above except for the sole purpose of performing this contract.

2.3 Except the contract issued to the supplier, each and every other document mentioned in GCC sub-clause 2.1 above shall remain the property of the purchaser and, if advised by the purchaser, all copies of all such documents shall be returned to the purchaser on completion of the supplier's performance and obligations under this contract.

3. Patent Rights

3.1 The supplier shall, at all times, indemnify and keep indemnified the purchaser, free of cost, against all claims which may arise in respect of goods & services to be provided by the supplier under the contract for infringement of any intellectual property rights or any other right protected by patent, registration of designs or trademarks. In the event of any such claim in respect of alleged breach of patent, registered designs, trade marks etc. being made against the purchaser, the purchaser shall notify the supplier of the same and the supplier shall, at his own expenses take care of the same for settlement without any liability to the purchaser.

4. Country of Origin

4.1 All goods and services to be supplied and provided for the contract shall have the origin in India or in the countries with which the Government of India has trade relations.

4.2 The word "origin" incorporated in this clause means the place from where the goods are mined, cultivated, grown, manufactured, produced or processed or from where the services are arranged.

4.3 The country of origin may be specified in the Price Schedule

5. Performance Security

5.1 Within fifteen (15) days from date of the issue of notification of award by the Purchaser/Consignee, the supplier, shall furnish performance security to the Purchaser/Consignee for an amount equal to ten percent (10%) of the total value of the contract, valid up to sixty (60) days after the date of completion of all contractual obligations by the supplier, including the warranty obligations, initially valid for a period of minimum 66 months (as applicable warranty period of 5 years) from the date of Notification of Award.

5.2 The Performance security shall be denominated in Indian Rupees or in the currency of the contract as detailed below:

a) It shall be in any one of the forms namely Account Payee Demand Draft or Fixed Deposit Receipt drawn from any Scheduled bank in India or Bank Guarantee issued by a Scheduled bank in India, in the prescribed form as provided in section XV of this document in favour of the Purchaser/Consignee. The validity of the Fixed Deposit receipt or Bank Guarantee will be for a period up to sixty (60) days beyond Warranty Period.

5.3 In the event of any failure /default of the supplier with or with out any quantifiable loss to the government including furnishing of consignee wise Bank Guarantee for CMC security as per Proforma in Section XV, the amount of the performance security is liable to be forfeited. The Administration Department may do the needful to cover any failure/default of the supplier with or without any quantifiable loss to the Government.

5.4 In the event of any amendment issued to the contract, the supplier shall, within twenty-one (21) days of issue of the amendment, furnish the corresponding amendment to the Performance Security (as necessary), rendering the same valid in all respects in terms of the contract, as amended.

5.5 The supplier shall enter into Annual Comprehensive Maintenance Contract as per the 'Contract Form – B' in Section XVI with respective consignees, 3 (three) months prior to the completion of Warranty Period. The CMC will commence from the date of expiry of the Warranty Period.

5.6 Subject to GCC sub – clause 5.3 above, the Purchaser/Consignee will release the Performance Security without any interest to the supplier on completion of the supplier's all contractual obligations including the warranty obligations & after receipt of Consignee wise bank guarantee for CMC security in favour of Head of the Hospital/ Institute/ Medical College of the consignee as per the format in Section XV.

6. Technical Specifications and Standards

6.1 The Goods & Services to be provided by the supplier under this contract shall conform to the technical specifications and quality control parameters mentioned in 'Technical Specification' and 'Quality Control Requirements' under Sections VII and VIII of this document.

Please ensure the following compliances are met for the Medical equipment:

1. For Radiology equipment i.e. X-Ray, Ultrasound, MRI & CT-Scan etc.

    a. Equipment should be DICOM (Digital Imaging and Communications in Medicine) enabled DICOM provides reliable protocols for integration of image data between imaging, non-imaging modalities, devices and systems.

    b. Equipment complied with HL7 (Health Level Seven) standards

    c. Capable to link with PACS & HMIS. Any Hardware/lock/software license required for interfacing with PACS & HMIS should be supplied with the equipment/device.

2. For Laboratory Equipment/device:

a. Equipment communicates in one of the following ways:

A. TCP/IP
B RS-232
C. USB

Any type of cable/hardware/lock/software/license required for integration with HMIS system should be provided.

Please provide configuration parameters to connect with HMIS successfully.

b. Data accepted/send by the device/equipment should be readable as standard data Type in ANSI C/C++.

c. Comprehensive list of all data structures imported and exported by the device should be documented with examples.

d. API of equipment should be provided.

e. Technical interface specification should be provided.

Above standards are required for interfacing of equipment with PACS (Picture Archiving & Communication System) & HMIS (Hospital Management & Information System) during the computerization of the Hospital.

7. Packing and Marking

7.1 The packing for the goods to be provided by the supplier should be strong and durable enough to withstand, without limitation, the entire journey during transit including transhipment (if any), rough handling, open storage etc. without any damage, deterioration etc. As and if necessary, the size, weights and volumes of the packing cases shall also take into consideration, the remoteness of the final destination of the goods and availability or otherwise of transport and handling facilities at all points during transit up to final destination as per the contract.

7.2 The quality of packing, the manner of marking within & outside the packages and provision of accompanying documentation shall strictly comply with the requirements as provided in Technical Specifications and Quality Control Requirements under Sections VII and VIII and in SCC under Section V. In case the packing requirements are amended due to issue of any amendment to the contract, the same shall also be taken care of by the supplier accordingly.

7.3 Packing instructions:

Unless otherwise mentioned in the Technical Specification and Quality Control Requirements under Sections VII and VIII and in SCC under Section V, the supplier shall make separate packages for each consignee (in case there is more than one consignee mentioned in the contract) and mark each package on three sides with the following-g with indelible paint of proper quality:

a. contract number and date
b. brief description of goods including quantity

c. packing list reference number
d. country of origin of goods
e. consignee's name and full address and
f. supplier's name and address

8. Inspection, Testing and Quality Control

8.1 The purchaser and/or its nominated representative(s) will, without any extra cost to the purchaser, inspect and/or test the ordered goods and the related services to confirm their conformity to the contract specifications and other quality control details incorporated in the contract. The purchaser shall inform the supplier in advance, in writing, the purchaser's programme for such pre-dispatch inspections, inspections and, also the identity of the officials to be deputed for this purpose. The cost towards the transportation, boarding & lodging will be borne by the purchaser and/or its nominated representative(s).

8.2 The Technical Specification and Quality Control Requirements incorporated in the contract shall specify what inspections and tests are to be carried out and, also, where and how they are to be conducted. If such inspections and tests are conducted in the premises of the supplier or its subcontractor(s), all reasonable facilities and assistance, including access to relevant drawings, design details and production data, shall be furnished by the supplier to the purchaser's inspector at no charge to the purchaser.

8.3 If during such inspections and tests the contracted goods fail to conform to the required specifications and standards, the purchaser's inspector may reject them and the supplier shall either replace the rejected goods or make all alterations necessary to meet the specifications and standards, as required, free of cost to the purchaser and resubmit the same to the purchaser's inspector for conducting the inspections and tests again.

8.4 In case the contract stipulates pre-despatch inspection of the ordered goods at supplier's premises, the supplier shall put up the goods for such inspection to the purchaser's inspector well ahead of the contractual delivery period, so that the purchaser's inspector is able to complete the inspection within the contractual delivery period.

8.5 If the supplier tenders the goods to the purchaser's inspector for inspection at the last moment without providing reasonable time to the inspector for completing the inspection within the contractual delivery period, the inspector may carry out the inspection and complete the formality beyond the contractual delivery period at the risk and expense of the supplier. The fact that the goods have been inspected after the contractual delivery period will not have the effect of keeping the contract alive and this will be without any prejudice to the legal rights and remedies available to the purchaser under the terms & conditions of the contract.

8.6 The purchaser's/consignee's contractual right to inspect, test and, if necessary, reject the goods after the goods' arrival at the final destination shall have no bearing of the fact that the goods have previously been inspected and cleared by purchaser's inspector during pre-despatch inspection mentioned above.

8.7 Goods accepted by the purchaser/consignee and/or its inspector at initial inspection and in final inspection in terms of the contract shall in no way dilute purchaser's/consignee's right to reject the same later, if found deficient in terms of the warranty clause of the contract, as incorporated under GCC Clause 15.

8.8 Principal/ Foreign supplier shall also have the equipment inspected by recognised/ reputed agency like SGS, Lloyd, Bureau Veritas, TUV prior to despatch at the supplier's cost and furnish necessary certificate from the said agency in support of their claim.

8.9 Third Party Inspection to include only Physical & Relevant records Inspection of the Ordered Goods. However, Dispatch Clearance Certificate is issued without prejudice to the Purchaser's right to accept/reject the Ordered Goods after it's arrival at site/destination, if not found in

accordance with the Purchase Order during the installation and testing at site and during the performance guarantee period. This dispatch clearance certificate will not absolve manufacturer from his responsibility to ensure that the Ordered Goods supplied are totally in accordance with the Purchase Order/Notification of Award.

8.10. The stores (both Indian & Import origin goods) should be dispatched only after the equipment inspected by recognized/reputed agency like SGS, Lloyd, TUV & Bureau Veritas prior to dispatch prior to dispatch at the supplier's cost and furnish necessary Certificate from the said agency in support of their claim.

To enable HSCC to issue Dispatch Clearance Certificate, supplier/manufacture is to furnish following documents:

1. Copy of supplier's invoice showing contract number, goods description, quantity, unit price & total amount.
2. Country of Origin Certificate
3. Quality & Quantity Certificate
4. Packing List with Complete contents.
5. Internal Factory Inspection Report
6. Warranty Certificate
7. Inspection certificate for the dispatched equipments issued by recognized/reputed agency like SGS, Lloyd, TUV & Bureau Veritas, prior to dispatch.

All such Certificates/Reports as mentioned above shall be addressed as:

Sr. CGM - I, HSCC (India) Ltd, E-6 (A) Sector -1 , Noida – 201301, UP INDIA

After scrutiny, if the documents found in order, **Dispatch Clearance Certificate** shall be issued to the supplier.

No goods (both Indians & Import origin goods) shall be dispatched before issue of Dispatch Clearance Certificate by HSCC.

9. Terms of Delivery

9.1 Goods shall be delivered by the supplier in accordance with the terms of delivery specified in the contract.

10. Transportation of Goods

10.1 Instructions for transportation of imported goods offered from abroad:

The supplier shall not arrange part-shipments and/or transhipment without the express/prior written consent of the purchaser. The supplier is required under the contract to deliver the goods under CIP (Named port of destination) terms; the shipment shall be made by Indian flag vessel or by vessels belonging to the conference lines in which India is a member country through India's forwarding agents/coordinators. In case the forwarding agent/coordinators are unable to provide timely adequate space in Indian flag vessel or by vessels belonging to the conference lines, the supplier shall arrange shipment through any available vessel to adhere to the delivery schedule given in the contract.

In case of airlifting of imported goods offered from abroad, the same will be done only through the National Carrier i.e. Air India wherever applicable. In case the National Carrier is not available, any other airlines available for early delivery may be arranged.

10.2 Instructions for transportation of domestic goods including goods already imported by the supplier under its own arrangement:

In case no instruction is provided in this regard in the SCC, the supplier will arrange transportation of the ordered goods as per its own procedure.

11. Insurance:

11.1 Unless otherwise instructed in the SCC, the supplier shall make arrangements for insuring the goods against loss or damage incidental to manufacture or acquisition, transportation, storage and delivery in the following manner:

i) in case of supply of domestic goods on Consignee site basis, the supplier shall be responsible till the entire stores contracted for arrival in good condition at destination. The transit risk in this respect shall be covered by the Supplier by getting the stores duly insured for an amount equal to 110% of the value of the goods from ware house to ware house (consignee site) on all risk basis. The insurance cover shall be obtained by the Supplier and should be valid till 3 months after the receipt of goods by the Consignee.

ii) in case of supply of the imported goods on CIP Named port of Destination Basis, the additional extended Insurance (local transportation and storage) would be borne by the Supplier from the port of entry to the consignee site for a period including 3 months beyond date of delivery for an amount equal to 110% of the overall expenditure to be incurred by the purchaser from ware house to ware house (consignee site) on all risk basis.

If the equipment is not commissioned and handed over to the consignee within 3 months, the insurance will be got extended by the supplier at their cost till the successful installation, testing, commissioning and handing over of the goods to the consignee. In case the delay in the installation and commissioning is due to handing over of the site to the supplier by the consignee, such extensions of the insurance will still be done by the supplier, but the insurance extension charges at actuals will be reimbursed.

12. Spare parts

12.1 If specified in the List of Requirements and in the resultant contract, the supplier shall supply/provide any or all of the following materials, information etc. pertaining to spare parts manufactured and/or supplied by the supplier:

a) The spare parts as selected by the Purchaser/Consignee to be purchased from the supplier, subject to the condition that such purchase of the spare parts shall not relieve the supplier of any contractual obligation including warranty obligations; and

b) In case the production of the spare parts is discontinued:

i) Sufficient advance notice to the Purchaser/Consignee before such discontinuation to provide adequate time to the purchaser to purchase the required spare parts etc., and

ii) Immediately following such discontinuation, providing the Purchaser/Consignee, free of cost, the designs, drawings, layouts and specifications of the spare parts, as and if requested by the Purchaser/Consignee.

12.2 Supplier shall carry sufficient inventories to assure ex-stock supply of consumable spares for the goods so that the same are supplied to the Purchaser/Consignee promptly on receipt of order from the Purchaser/Consignee.

13. Incidental services

13.1 Subject to the stipulation, if any, in the SCC (Section – V), List of Requirements (Section – VI) and the Technical Specification (Section – VII), the supplier shall be required to perform the following services.

i) Installation & commissioning, Supervision and Demonstration of the goods
ii) Providing required jigs and tools for assembly, minor civil works required for the completion of the installation.
iii) Training of Consignee's Doctors, Staff, operators etc. for operating and maintaining the goods
iv) Supplying required number of operation & maintenance manual for the goods

14. Distribution of Dispatch Documents for Clearance/Receipt of Goods

The supplier shall send all the relevant despatch documents well in time to the Purchaser/Consignee to enable the Purchaser/Consignee clear or receive (as the case may be) the goods in terms of the contract.

Unless otherwise specified in the SCC, the usual documents involved and the drill to be followed in general for this purpose are as follows.

A) For Domestic Goods, including goods already imported by the supplier under its own arrangement

Within 24 hours of despatch, the supplier shall notify the purchaser, consignee, and others concerned if mentioned in the contract, the complete details of despatch and also supply the following documents to them by registered post / speed post (or as instructed in the contract):

(i) Four copies of supplier's invoice showing contract number, goods description, quantity, unit price and total amount;
(ii) Consignee Receipt Certificate as per Section XVI in original issued by the authorized representative of the consignee;
(iii) Two copies of packing list identifying contents of each package;
(iv) Inspection certificate issued by the nominated Inspection agency, if any.
(v) Certificate of origin;
(vi) Insurance Certificate as per GCC Clause 11.
(vii) Manufacturers/Supplier's warranty certificate & In-house inspection certificate.

B) For goods imported from abroad

Within 24 hours of despatch, the supplier shall notify the purchaser, consignee, and others concerned if mentioned in the contract, the complete details of despatch and also supply the following documents to them by registered post / speed post (or as instructed in the contract). Any delay or demurrage occurred during the customs clearance on account of the non-availability of technical support/ clarifications /documents from the supplier shall be borne by the supplier:

(i) Four copies of supplier's invoice showing contract number, goods description, quantity, unit price and total amount;

(ii) Original and four copies of the negotiable clean, on-board Bill of Lading/Airway bill, marked freight pre paid and four copies of non-negotiable Bill of Lading/Airway bill;
(iii) Four Copies of packing list identifying contents of each package;
(iv) Insurance Certificate as per GCC Clause 11.
(v) Manufacturer's/Supplier's warranty certificate;
(vi) Inspection Certificate for the despatched equipments issued by recognized/ reputed agency like SGS, Lloyd, Bureau Veritas, TUV prior to despatch
(vii) Manufacturer's own factory inspection report;
(viii) Certificate of origin
(ix) Port of Loading;
(x) Port of Discharge and
(xi) Expected date of arrival.

15. Warranty

15.1 The supplier warrants comprehensively that the goods supplied under the contract is new, unused and incorporate all recent improvements in design and materials unless prescribed otherwise by the purchaser in the contract. The supplier further warrants that the goods supplied under the contract shall have no defect arising from design, materials (*except when the design adopted and / or the material used are as per the Purchaser's/Consignee's specifications*) or workmanship or from any act or omission of the supplier, that may develop under normal use of the supplied goods under the conditions prevailing in India.

15.2 The **warranty** shall remain valid for **60 months** from the date of installation & commissioning followed by a **CMC for a period of 5 (Five) Years** for all the equipments after the goods or any portion thereof as the case may be, have been delivered to the final destination and installed and commissioned at the final destination and accepted by the purchaser/CONSIGNEE in terms of the contract, unless specified otherwise in the SCC.

a. No conditional warranty will be acceptable.
b. Warranty as well as Comprehensive Maintenance contract will be inclusive of all accessories and Turnkey work and it will also cover the following:-

- X-ray and CT tubes and high-tension cables.
- Helium replacement
- Any kind of motor.
- Plastic & Glass Parts against any manufacturing defects.
- All kind of sensors including oxygen sensors.
- All kind of coils, probes and transducers
- All kind of flat panel sensors and cassettes for DR & CR systems and patients handling trolleys etc
- Printers and imagers including laser and thermal printers with all parts.
- UPS including the replacement of batteries.
- Air-conditioners

c. Replacement and repair will be under taken for the defective goods.
d. Proper marking has to be made for all spares for identification like printing of installation and repair dates.

15.3 In case of any claim arising out of this warranty, the Purchaser/Consignee shall promptly notify the same in writing to the supplier. The period of the warranty will be as per G.C.C clause number 15.2 above irrespective of any other period mentioned elsewhere in the bidding documents.

15.4 Upon receipt of such notice, the supplier shall, within 8 hours on a 24(hrs) X 7 (days) X 365 (days) basis respond to take action to repair or replace the defective goods or parts thereof, free of cost, at the ultimate destination. The supplier shall take over the replaced parts/goods after providing their replacements and no claim, whatsoever shall lie on the purchaser for such replaced parts/goods thereafter. The penalty clause for non rectification will be applicable as per tender conditions

15.5 In the event of any rectification of a defect or replacement of any defective goods during the warranty period, the warranty for the rectified/replaced goods shall be extended to a further period of sixty (60) months from the date such rectified / replaced goods starts functioning to the satisfaction of the purchaser.

15.6 If the supplier, having been notified, fails to respond to take action to repair or replace the defect(s) within 8 hours on a 24(hrs) X 7 (days) X 365 (days) basis, the purchaser may proceed to take such remedial action(s) as deemed fit by the purchaser, at the risk and expense of the supplier and without prejudice to other contractual rights and remedies, which the purchaser may have against the supplier.

15.7 During Warranty period, the supplier is required to visit at each consignee's site at least once in 3 months commencing from the date of the installation for preventive maintenance of the goods

15.8 The Purchaser/Consignee reserve the rights to enter into Annual Comprehensive Maintenance Contract between Consignee and the Supplier for the period as mentioned in Section VII, Technical Specifications after the completion of warranty period.

15.9 The supplier along with its Indian Agent and the CMC provider shall ensure continued supply of the spare parts for the machines and equipments supplied by them to the purchaser for 10 years from the date of installation and handing over.

15.10 The Supplier along with its Indian Agent and the CMC Provider shall always accord most favoured client status to the Purchaser vis-à-vis its other Clients/Purchasers of its equipments/machines/goods etc. and shall always give the most competitive price for its machines/equipments supplied to the Purchaser/Consignee.

16. Assignment

16.1 The Supplier shall not assign, either in whole or in part, its contractual duties, responsibilities and obligations to perform the contract, except with the Purchaser's prior written permission.

17. Sub Contracts

17.1 The Supplier shall notify the Purchaser in writing of all sub contracts awarded under the contract if not already specified in its tender. Such notification, in its original tender or later, shall not relieve the Supplier from any of its liability or obligation under the terms and conditions of the contract.

17.2 Sub contract shall be only for bought out items and sub-assemblies.

17.3 Sub contracts shall also comply with the provisions of GCC Clause 4 ("Country of Origin").

18. Modification of contract

18.1 If necessary, the purchaser may, by a written order given to the supplier at any time during the currency of the contract, amend the contract by making alterations and modifications within the general scope of contract in any one or more of the following:

a) Specifications, drawings, designs etc. where goods to be supplied under the contract are to be specially manufactured for the purchaser,
b) Mode of packing,
c) Incidental services to be provided by the supplier
d) Mode of despatch,
e) Place of delivery, and
f) Any other area(s) of the contract, as felt necessary by the purchaser depending on the merits of the case.

18.2 In the event of any such modification/alteration causing increase or decrease in the cost of goods and services to be supplied and provided, or in the time required by the supplier to perform any obligation under the contract, an equitable adjustment shall be made in the contract price and/or contract delivery schedule, as the case may be, and the contract amended accordingly. If the supplier doesn't agree to the adjustment made by the Purchaser/Consignee, the supplier shall convey its views to the Purchaser/Consignee within twenty-one days from the date of the supplier's receipt of the Purchaser's/Consignee's amendment / modification of the contract.

19. Prices

19.1 Prices to be charged by the supplier for supply of goods and provision of services in terms of the contract shall not vary from the corresponding prices quoted by the supplier in its tender and incorporated in the contract except for any price adjustment authorised in the SCC.

20. Taxes and Duties

20.1 Supplier shall be entirely responsible for all taxes, duties, fees, levies etc. incurred until final acceptance of the contracted goods to the purchaser. However, for goods directly imported shall be guided by the INCOTERM.

20.2 Further instruction, if any, shall be as provided in the SCC.

21. Terms and Mode of Payment

21.1 Payment Terms

Payment shall be made subject to recoveries, if any, by way of liquidated damages or any other charges as per terms & conditions of contract in the following manner.

A) Payment for Domestic Goods or Foreign Goods Located within India

Payment shall be made in Indian Rupees as specified in the contract in the following manner:

a) On delivery:

80% payment of the contract price shall be paid on receipt of goods in good condition and upon the submission of the following documents:

(i) Four copies of supplier's invoice showing contract number, goods description, quantity, unit price and total amount;
(ii) Consignee Receipt Certificate as per Section XVI in original issued by the authorized representative of the consignee;
(iii) Two copies of packing list identifying contents of each package;
(iv) Inspection certificate issued by the nominated Inspection agency, if any.

(v) Insurance Certificate as per GCC Clause 11 and documents also to be submitted for payment confirming that dispatch documents has already been sent to all concerned as per the contract within 24 hours;
(vi) Certificate of origin.
(vii) Dispatch Clearance Certificate issued by HSCC.

b) On Acceptance:

Balance 20% payment would be made against 'Final Acceptance Certificate' as per Section XVIII of goods to be issued by the consignees subject to recoveries, if any, either on account of non-rectification of defects/deficiencies not attended by the Supplier or otherwise. Final acceptance certificate will be released by the consignee on completion of installation, commissioning, training, successful running of equipment (at least 2-3 weeks) and handing over the equipment to the consignee.

B) Payment for Imported Goods:

Payment for foreign currency portion shall be made in the currency as specified in the contract in the following manner:

a) On Shipment:

80% of the net CIP price (CIP price less Indian Agency commission) of the goods shipped shall be paid through irrevocable, non-transferable Letter of Credit (LC) opened in favour of the supplier in a bank in his country and upon submission of documents specified hereunder:

(i) Four copies of supplier's invoice showing contract number, goods description, quantity, unit price and total amount;
(ii) Original and four copies of the negotiable clean, on-board Bill of Lading/ Airway bill, marked freight pre paid and four copies of non-negotiable Bill of Lading/Airway bill;
(iii) Four Copies of packing list identifying contents of each package;
(iv) Insurance Certificate as per GCC Clause 11 and documents also to be submitted for payment of LC confirming that dispatch documents has already been sent to all concerned as per the contract within 24 hours;
(v) Manufacturer's/Supplier's warranty certificate;
(vi) Inspection certificate issued by the nominated inspection agency, if applicable as per contract;
(vii) Manufacturer's own factory inspection report and
(viii) Certificate of origin by the chamber of commerce of the concerned country;
(ix) Inspection Certificate for the despatched equipments issued by recognized/ reputed agency like SGS, Lloyd, TUV & Beauru Varitus, prior to despatch.
(x) Dispatch Clearance Certificate issued by HSCC.

b) On Acceptance:

Balance payment of 20% of net CIP price of goods would be made against 'Final Acceptance Certificate' as per Section XVII to be issued by the consignees through irrevocable, non-transferable Letter of Credit (LC) opened in favour of the Foreign Principal in a bank in his country, subject to recoveries, if any. Final acceptance certificate will be released by the consignee on completion of installation, commissioning, training, successful running of equipment (at least 2-3 weeks) and handing over the equipment to the consignee.

c) **Payment of Incidental Costs** till consignee site & Incidental Services (including Installation & Commissioning, Supervision, Demonstration and Training) will be paid in Indian Rupees to the Indian Agent on proof of final installation, commission and acceptance of equipment by the consignee.

d) **Payment of Indian Agency Commission:** Indian Agency commission will be paid to the manufacturer‟s agent in the local currency for an amount in Indian rupees indicated in the relevant Price Schedule (as per prevailing rate of exchange ruling on the date of Contract) and shall not be subject to further escalation / exchange variation.

C) Payment of Turnkey, if any:

Turnkey payment will be made to the manufacturer's agent in Indian rupees indicated in the relevant Price Schedule (as per prevailing rate of exchange ruling on the date of Contract) and shall not be subject to further escalation / exchange variation.

D) Payment for Annual Comprehensive Maintenance Contract Charges:

The consignee will enter into CMC with the supplier at the rates as stipulated in the contract. The payment of CMC will be made on six monthly basis after satisfactory completion of said period, duly certified by the consignee on receipt of bank guarantee for an amount equivalent to 2.5 % of the cost of the equipment as per contract in the prescribed format given in Section XV valid till 2 months after expiry of entire CMC period.

21.2 The supplier shall not claim any interest on payments under the contract.

21.3 Where there is a statutory requirement for tax deduction at source, such deduction towards income tax and other tax as applicable will be made from the bills payable to the Supplier at rates as notified from time to time.

21.4 Irrevocable & non – transferable LC shall be opened by the respective consignees. However, if the supplier requests specifically to open confirmed LC, the extra charges would be borne by the supplier. If LC is required to be extended and/or amended for reasons not attributable to the purchaser/consignee, the charges thereof shall be borne by the supplier.

21.5 The payment shall be made in the currency / currencies authorised in the contract.

21.6 The supplier shall send its claim for payment in writing, when contractually due, along with relevant documents etc., duly signed with date, to respective consignees.

21.7 While claiming payment, the supplier is also to certify in the bill that the payment being claimed is strictly in terms of the contract and all the obligations on the part of the supplier for claiming that payment has been fulfilled as required under the contract.

21.8 While claiming reimbursement of duties, taxes etc. (like sales tax, excise duty, custom duty) from the Purchaser/Consignee, as and if permitted under the contract, the supplier shall also certify that, in case it gets any refund out of such taxes and duties from the concerned authorities at a later date, it (the supplier) shall refund to the Purchaser/Consignee forthwith.

21.9 In case where the supplier is not in a position to submit its bill for the balance payment for want of receipted copies of Inspection Note from the consignee and the consignee has not complained about the non-receipt, shortage, or defects in the supplies made, balance amount will be paid by the paying authority without consignee's receipt certificate after three months from the date of the preceding part payment for the goods in question, subject to the following conditions:

(a) The supplier will make good any defect or deficiency that the consignee (s) may report within six months from the date of despatch of goods.

(b) Delay in supplies, if any, has been regularized.

(c) The contract price where it is subject to variation has been finalized.

(d) The supplier furnishes the following undertakings:

"I/We, _____ certify that I/We have not received back the Inspection Note duly receipted by the consignee or any communication from the purchaser or the consignee about non-receipt, shortage or defects in the goods supplied. I/We _____ agree to make good any defect or deficiency that the consignee may report within three months from the date of receipt of this balance payment.

22. Delivery/Delay in the supplier's performance

22.1 The supplier shall deliver of the goods and perform the services under the contract within the time schedule specified by the Purchaser/Consignee in the List of Requirements and as incorporated in the contract. The time for and the date of delivery of the goods stipulated in the schedule shall be deemed to be of the essence of the contract and the delivery must be completed not later than the date (s) as specified in the contract.

22.2 Subject to the provision under GCC clause 26, any unexcused delay by the supplier in maintaining its contractual obligations towards delivery of goods and performance of services shall render the supplier liable to any or all of the following sanctions:

(i) imposition of liquidated damages,
(ii) forfeiture of its performance security and
(iii) termination of the contract for default.

22.3 If at any time during the currency of the contract, the supplier encounters conditions hindering timely delivery of the goods and performance of services, the supplier shall promptly inform the Purchaser/Consignee in writing about the same and its likely duration and make a request to the Purchaser/Consignee for extension of the delivery schedule accordingly. On receiving the supplier's communication, the Purchaser/ Consignee shall examine the situation as soon as possible and, at its discretion, may agree to extend the delivery schedule, with or without liquidated damages for completion of supplier's contractual obligations by issuing an amendment to the contract.

22.4 When the period of delivery is extended due to unexcused delay by the supplier, the amendment letter extending the delivery period shall, interalia contain the following conditions:

(a) The Purchaser/Consignee shall recover from the supplier, under the provisions of the clause 23 of the General Conditions of Contract, liquidated damages on the goods and services, which the Supplier has failed to deliver within the delivery period stipulated in the contract.

(b) That no increase in price on account of any ground, whatsoever, including any stipulation in the contract for increase in price on any other ground and, also including statutory increase in or fresh imposition of customs duty, excise duty, sales tax/ VAT, Service Tax and Works Contract Tax or on account of any other tax or duty which may be levied in respect of the goods and services specified in the contract, which takes place after the date of delivery stipulated in the contract shall be admissible on such of the said goods and services as are delivered and performed after the date of the delivery stipulated in the contract.

(c) But nevertheless, the Purchaser/Consignee shall be entitled to the benefit of any decrease in price on account of reduction in or remission of customs duty, excise duty, sales tax/ VAT, Service Tax and Works Contract Tax or any other duty or tax or levy or on account of any other grounds, which takes place after the expiry of the date of delivery stipulated in the contract.

22.5 The supplier shall not dispatch the goods after expiry of the delivery period. The supplier is required to apply to the Purchaser/Consignee for extension of delivery period and obtain the same before despatch. In case the supplier dispatches the goods without obtaining an extension, it would be doing so at its own risk and no claim for payment for such supply and / or any other expense related to such supply shall lie against the purchaser.

22.6 Passing of Property:

22.6.1 The property in the goods shall not pass to the purchaser unless and until the goods have been delivered to the consignee in accordance with the conditions of the contract.

22.6.2 Where there is a contract for sale of specific goods and the supplier is bound to do something to the goods for the purpose of putting them into a deliverable state the property does not pass until such thing is done.

22.6.3 Unless otherwise agreed, the goods remain at the supplier‟s risk until the property therein is transferred to the purchaser.

23. Liquidated damages

23.1 Subject to GCC clause 26, if the supplier fails to deliver any or all of the goods or fails to perform the services within the time frame(s) incorporated in the contract, the Purchaser/Consignee shall, without prejudice to other rights and remedies available to the Purchaser/Consignee under the contract, deduct from the contract price, as liquidated damages, a sum equivalent to 0.5% per week of delay or part thereof on delayed supply of goods and/or services until actual delivery or performance subject to a maximum of 10% of the contract price. Once the maximum is reached Purchaser/Consignee may consider termination of the contract as per GCC 24.

During the above-mentioned delayed period of supply and / or performance, the conditions incorporated under GCC sub-clause 22.4 above shall also apply.

23.2 In the event of delay in submission of Proforma Invoice beyond 7 working days from the date of notification of award, the delay shall be to the account of supplier & Purchaser shall deduct Liquidated damages, as per clause 23.1. Proforma Invoice should be strictly as per the terms & conditions mentioned in Notification of Award / Tender Conditions.

23.3 Proforma Invoice submitted by supplier is found to be deficient, because of which purchaser is unable to open the letter of credit, delay shall be to the account of supplier & purchaser shall deduct liquidated damages as per clause 23.1.

24. Termination for default

24.1 The Purchaser/Consignee , without prejudice to any other contractual rights and remedies available to it (the Purchaser/Consignee), may, by written notice of default sent to the supplier, terminate the contract in whole or in part, if the supplier fails to deliver any or all of the goods or fails to perform any other contractual obligation(s) within the time period specified in the contract, or within any extension thereof granted by the Purchaser/Consignee pursuant to GCC sub-clauses 22.3 and 22.4.

24.2 In the event of the Purchaser/Consignee terminates the contract in whole or in part, pursuant to GCC sub-clause 24.1 above, the Purchaser/Consignee may procure goods and/or services similar to those cancelled, with such terms and conditions and in such manner as it deems fit and the supplier shall be liable to the Purchaser/Consignee for the extra expenditure, if any, incurred by the Purchaser/Consignee for arranging such procurement.

24.3 Unless otherwise instructed by the Purchaser/Consignee, the supplier shall continue to perform the contract to the extent not terminated.

25. Termination for insolvency

25.1 If the supplier becomes bankrupt or otherwise insolvent, the purchaser reserves the right to terminate the contract at any time, by serving written notice to the supplier without any compensation, whatsoever, to the supplier, subject to further condition that such termination will not prejudice or affect the rights and remedies which have accrued and / or will accrue thereafter to the Purchaser/Consignee.

26. Force Majeure

26.1 Notwithstanding the provisions contained in GCC clauses 22, 23 and 24, the supplier shall not be liable for imposition of any such sanction so long the delay and/or failure of the supplier in fulfilling its obligations under the contract is the result of an event of Force Majeure.

26.2 For purposes of this clause, Force Majeure means an event beyond the control of the supplier and not involving the supplier's fault or negligence and which is not foreseeable and not brought about at the instance of , the party claiming to be affected by such event and which has caused the non – performance or delay in performance. Such events may include, but are not restricted to, acts of the Purchaser/Consignee either in its sovereign or contractual capacity, wars or revolutions, hostility, acts of public enemy, civil commotion, sabotage, fires, floods, explosions, epidemics, quarantine restrictions, strikes excluding by its employees , lockouts excluding by its management, and freight embargoes.

26.3 If a Force Majeure situation arises, the supplier shall promptly notify the Purchaser/Consignee in writing of such conditions and the cause thereof within twenty one days of occurrence of such event. Unless otherwise directed by the Purchaser/Consignee in writing, the supplier shall continue to perform its obligations under the contract as far as reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

26.4 If the performance in whole or in part or any obligation under this contract is prevented or delayed by any reason of Force Majeure for a period exceeding sixty days, either party may at its option terminate the contract without any financial repercussion on either side.

26.5 In case due to a Force Majeure event the Purchaser/Consignee is unable to fulfil its contractual commitment and responsibility, the Purchaser/Consignee will notify the supplier accordingly and subsequent actions taken on similar lines described in above sub-paragraphs.

27. Termination for convenience

27.1 The Purchaser/Consignee reserves the right to terminate the contract, in whole or in part for its (Purchaser's/Consignee 's) convenience, by serving written notice on the supplier at any time during the currency of the contract. The notice shall specify that the termination is for the convenience of the Purchaser/Consignee. The notice shall also indicate interalia, the extent to which the supplier's performance under the contract is terminated, and the date with effect from which such termination will become effective.

27.2 The goods and services which are complete and ready in terms of the contract for delivery and performance within thirty days after the supplier's receipt of the notice of termination shall be accepted by the Purchaser/Consignee following the contract terms, conditions and prices. For the remaining goods and services, the Purchaser/Consignee may decide:

a) To get any portion of the balance completed and delivered at the contract terms, conditions and prices; and / or

b) To cancel the remaining portion of the goods and services and compensate the supplier by paying an agreed amount for the cost incurred by the supplier towards the remaining portion of the goods and services.

28. Governing language

28.1 The contract shall be written in English language following the provision as contained in GIT clause 4. All correspondence and other documents pertaining to the contract, which the parties exchange, shall also be written accordingly in that language.

29. Notices

29.1 Notice, if any, relating to the contract given by one party to the other, shall be sent in writing or by cable or telex or facsimile and confirmed in writing. The procedure will also provide the sender of the notice, the proof of receipt of the notice by the receiver. The addresses of the parties for exchanging such notices will be the addresses as incorporated in the contract.

29.2 The effective date of a notice shall be either the date when delivered to the recipient or the effective date specifically mentioned in the notice, whichever is later.

30. Resolution of disputes

30.1 If dispute or difference of any kind shall arise between the Purchaser/Consignee and the supplier in connection with or relating to the contract, the parties shall make every effort to resolve the same amicably by mutual consultations.

30.2 If the parties fail to resolve their dispute or difference by such mutual consultation within twenty-one days of its occurrence, then, unless otherwise provided in the SCC, either the Purchaser/Consignee or the supplier may give notice to the other party of its intention to commence arbitration, as hereinafter provided the applicable arbitration procedure will be as per the Arbitration and Conciliation Act, 1996 of India. In the case of a dispute or difference arising between the Purchaser/Consignee and a domestic Supplier relating to any matter arising out of or connected with the contract, such dispute or difference shall be referred to the sole arbitration of an officer in the Ministry of Law and Justice, appointed to be the arbitrator by **AIIMS Raebareli**. The award of the arbitrator shall be final and binding on the parties to the contract subject to the provision that the Arbitrator shall give reasoned award in case the value of claim in reference exceeds Rupees One lakhs (Rs. 1,00,000/-)

30.3 Venue of Arbitration: The venue of arbitration shall be the place from where the contract has been issued, i.e., New Delhi, India.

30.4 Jurisdiction of the court will be from the place where the tender enquiry document has been issued, i.e., New Delhi, India

31. Applicable Law

The contract shall be governed by and interpreted in accordance with the laws of India for the time being in force.

32 Withholding and Lien in respect of sums claimed

Whenever any claim for payment arises under the contract against the supplier the purchaser shall be entitled to withhold and also have a lien to retain such sum from the security deposit or sum of money arising out of under any other contract made by the supplier with the purchaser, pending finalization or adjudication of any such claim. It is an agreed term of the contract that the sum of money so withheld or retained under the lien referred to above, by the purchaser, will be kept withheld or retained till the claim arising about of or under the contract is determined by the Arbitrator or by the competent court as the case may be, and the supplier will have no claim for interest or damages whatsoever on any account in respect of such withholding or retention.

33. General/ Miscellaneous Clauses

33.1 Nothing contained in this Contract shall be constructed as establishing or creating between the parties, i.e. the Supplier/its Indian Agent/CMC Provider on the one side and the Purchaser on the other side, a relationship of master and servant or principal and agent.

33.2 Any failure on the part of any Party to exercise right or power under this Contract shall not operate as waiver thereof.

33.3 The Supplier shall notify the Purchaser/Consignee /the Government of India of any material change would impact on performance of its obligations under this Contract.

33.4 Each member/constituent of the Supplier/its Indian Agent/CMC Provider, in case of consortium shall be **jointly and severally liable** to and responsible for all obligations towards the Purchaser/Consignee/Government for performance of contract/services including that of its Associates/Sub Contractors under the Contract.

33.5 The Supplier/its Indian Agent/CMC Provider shall at all times, indemnify and keep indemnified the Purchaser/Government of India against all claims/damages etc. for any infringement of any Intellectual Property Rights (IPR) while providing its services under CMC or the Contract.

33.6 The Supplier/its Agent/CMC Provider shall, at all times, indemnify and keep indemnified the Purchaser/Consignee/Government of India against any claims in respect of any damages or compensation payable in consequences of any accident or injury sustained or suffered by its employees or agents or by any other third party resulting from or by any action, omission or operation conducted by or on behalf of the supplier/its associate/affiliate etc.

33.7 All claims regarding indemnity shall survive the termination or expiry of the contract.

34. Additional Factors and Parameters for Evaluation and Ranking of Responsive Tenders

34.1 Further to GIT Clause 34 above, the purchaser's evaluation of a tender will include and take into account the following:

i) In the case of goods manufactured in India or goods of foreign origin already located in India, sales tax & other similar taxes and excise duty & other similar duties, Customs Duties, Service Tax, Works Contract Tax etc which will be contractually payable (to the tenderer), on the goods if a contract is awarded on the tenderer; and

ii) in the case of goods of foreign origin offered from abroad, customs duty and other similar import duties/taxes, which will be contractually payable (to the tenderer) on the goods if the contract is awarded on the tenderer.

34.2 The purchaser's evaluation of tender will also take into account the additional factors, if any, incorporated in SIT in the manner and to the extent indicated therein.

34.3 i. The Purchaser reserves the right to give the price preference to small-scale sectors etc. and purchase preference to central public sector undertakings as per the instruction in vogue while evaluating, comparing and ranking the responsive tenders.

i. In exercise of powers conferred in Section 11 of the Micro, Small and Medium Enterprises Development (MSMED) Act 2006, the Government has notified a new Public Procurement Policy for Micro & Small Enterprises effective from 1st April 2012. The policy mandates that 20% of procurement of annual requirement of goods and services by all Central Ministries/Public Sector Undertakings will be from the micro and small enterprises. The Government has also earmarked a sub-target of 4% procurement of goods & services from MSEs owned by SC/ST entrepreneurs out of above said 20% quantity.

ii. In accordance with the above said notification, the participating Micro and Small

Enterprises (MSEs) in a tender, quoting price within the band of L 1+15% would also be allowed to supply a portion of the requirement by bringing down their price to the L 1 price, in a situation where L 1 price is from someone other than an MSE. Such MSEs would be allowed to supply up to 20% of the total tendered value. In case there are more than one such eligible MSE, the 20% supply will be shared equally. Out of 20% of the quantity earmarked for supply from MSEs, 4% quantity is earmarked for procurement from MSEs owned by SC/ST entrepreneurs. However, in the event of failure of such MSEs to participate in the tender process or meet the tender requirements and the L 1 price, the 4% quantity earmarked for MSEs owned by SC/ST entrepreneurs will be met from other participating MSEs.

iii. The MSEs fulfilling the prescribed eligibility criteria and participating in the tender shall enclose with their tender a copy of their valid registration certificate with District Industries Centres or Khadi and Village Industries Commission or Khadi and Village Industries Board or Coir Board or National Small Industries Corporation or any other body specified by

Ministry of Micro and Small enterprises in support of their being an MSE, failing which their tender will be liable to be ignored.

iv. Special provision for Micro and Small Enterprise owned by women. Out of the total annual procurement from Micro and Small Enterprises, 3 per cent from within the 25 per cent target shall be earmarked for procurement from Micro and Small Enterprises owned by women.

Note: "If the bidder is a MSME, it shall declare in the bid document the Udyog Aadhar Memorandum Number issued to it under the MSMED Act, 2006. If a MSME bidder do not furnish the UAM Number along with bid documents, such MSME unit will not be eligible for the benefits available under Public Procurement Policy for MSEs Order 2012."

34.4 Preference to Make in India:

As per the order issued by

i) Department of Industrial Policy and Promotion (DIPP) vide No. P-45021/2/2017-BE-II dated 15.06.2017 &

ii) Department of Pharmaceuticals vide No. F- 31026/36/2016-MD dated 18.05.2018 and the subsequent orders thereof; the purchaser reserves the right to give preference to the local supplier. A copy of this order is enclosed at Appendix-A which will form a part of this TED for evaluation and ranking of bids. (copy attached)

SECTION – V

SPECIAL CONDITIONS OF CONTRACT (SCC)

The following Special Conditions of Contract (SCC) will apply for this purchase. The corresponding clauses of General Conditions of Contract (GCC) relating to the SCC stipulations have also been incorporated below.

These Special Conditions will modify/substitute/supplement the corresponding (GCC) clauses. Whenever there is any conflict between the provision in the GCC and that in the SCC, the provision contained in the SCC shall prevail.

SECTION - VI
LIST OF REQUIREMENTS

Part I

S. No.	Equipment Details	Qty./ Requirements	EMD (Rs.)
A	**Radiology Deptt. At Hospital Block**		
1	128-slice CT Scan	1 no. for Hospital Block	12,00,000.00
2	1.5 Tesla MRI Unit	1 no. for Hospital Block	17,00,000.00
3	Digital X-Ray 1000mA System	1 no. for Hospital Block	4,60,000.00
4	Mobile X-Ray (High Frequency)	2 no. for Hospital Block	3,20,000.00
5	Colour Doppler (2D & 3D)	2 no. for Hospital Block	1,80,000.00
6	Portable Colour Doppler System	2 no. for Hospital Block	48,000.00
7	CR System	1 no. for Hospital Block	60,000.00
8	Mammography System	1 no. for Hospital Block	80,000.00
9	Digital Radio-fluoroscopy System	1 no. for Hospital Block	4,50,000.00
B	**Orthopaedics Deptt. At Hospital Block**		
1	Orthopedic Table with Attachments	2 no. for Hospital Block	2,80,000.00
2	Tourniquet	2 no. for Hospital Block	8,000.00
3	Battery Operated Drills	2 no. for Hospital Block	56,000.00
4	General Orthopedic Instruments (Set 1-6)	2 Sets for Hospital Block	20,000.00

5	Arthroscopy System	1 no. for Hospital Block	1,20,000.00
C	**Urology Deptt. At Hospital Block**		
1	Pneumatic Lithotripter	1 no. for Hospital Block	40,000.00
2	ESWL	1 no. for Hospital Block	6,00,000.00
3	Urodynamic System	1 no. for Hospital Block	80,000.00
4	PCNL Set	1 no. for Hospital Block	50,000.00
5	Holmium Laser 100W	1 no. for Hospital Block	2,00,000.00
6	Tissue Morcellator	1 no. for Hospital Block	40,000.00
7	Digital Flexible Ureteroscope	1 no. for Hospital Block	50,000.00
8	Semi Rigid Uretero-renoscope	2 no. for Hospital Block	40,000.00
9	Cystoscope & Resectoscope	1 no. for Hospital Block	40,000.00
10	General Surgery Instruments Sets	2 no. for Hospital Block	60,000.00
11	Uroflowmetery	1 no. for Hospital Block	30,000.00
12	Laparoscopy Set	2 no. for Hospital Block	60,000.00
13	OT Table Electro-Hydraulic	1 no. for Urology	60,000.00
D	**For CTVS Deptt. at Hospital Block**		

1	Heart Lung Machine	2 no. for Hospital Block	3,20,000.00
2	Sternal Saw	2 no. for Hospital Block	24,000.00
3	Surgical Instruments Set for Various Procedures	2 Sets for Hospital Block	1,20,000.00
4	IABP Machine	3 no. for Hospital Block	1,50,000.00
5	ACT Machine	2 no. for Hospital Block	24,000.00
6	Pacemaker Single Chamber-External	2 no. for Hospital Block	10,000.00
7	Pacemaker Dual Chamber-External	2 no. for Hospital Block	12,000.00
E	**Neuro Surgery Deptt. At Hospital Block**		
1	ICP Monitor	2 no. for Hospital Block	8,000.00
2	Neuro Surgical Drill with all attachments.	1 no. for Hospital Block	30,000.00
3	Intra Operative Nerve Monitoring	1 no. for Hospital Block	60,000.00
4	Transcranial Doppler	1 no. for Hospital Block	24,000.00
5	Neuro Surgical Instruments set	2 sets for Hospital Block	1,60,000.00
6	Operating Microscope	1 no. for Hospital Block	5,00,000.00
F	**Surgery Deptt. At Hospital Block**		
1	Laparoscope Set	1 no. for Hospital Block	1,80,000.00

2	Open Surgery Instruments	1 Set for Hospital Block	80,000.00
3	Ultrasonic Cutting & Coagulation	1 no. for Hospital Block	44,000.00
G	**For Endocrionology Deptt. at Hospital Block**		
1	Dexa Scanner (BMD)	1 no. for Hospital Block	80,000.00
H	**For Dermatology Deptt. at Hospital Block**		
1	IPL(Intense Pulse Light System)	1 no. for Hospital Block	36,000.00
2	Radiofrequency ablation (RFA) machine	1 no. for Hospital Block	14,000.00
3	Trinocular Microscope with camera attachment	1 no. for Hospital Block	5,000.00
4	Full body UV phototherapy device	1 no. for Hospital Block	14,000.00
I	**For ENT Deptt. at Hospital Block**		
1	ENT Operating Microscope	1 no. for Hospital Block	1,00,000.00
2	Pure tone Audiometer	1 no. for Hospital Block	10,000.00
3	Tympanometer	1 no. for Hospital Block	11,000.00
4	OAE(screening)	1 no. for Hospital Block	7,000.00
5	BERA with ASSR	1 no. for Hospital Block	16,000.00
6	Endoscopic sinus surgery set	1 no. for Hospital Block	24,000.00

7	Shaver System cum micro drill	1 no. for Hospital Block	16,000.00
8	ENT Workstation	1 no. for Hospital Block	1,00,000.00
9	Surgical instruments- ear Surgical instruments- nose/rhinoplasty Surgical instruments- tonsils & adenoids Surgical instruments- tracheostomy Surgical instruments- microlaryngeal surgery General Surgical instruments- head & neck	1 no. for Hospital Block	50,000.00
10	Bronchoscopy (Adult)	1 no. for Hospital Block	7,000.00
11	Flexible rhino-pharyngo-laryngoscope	1 no. for Hospital Block	10,000.00
J	**For Gyn. & Obs. Deptt. at Hospital Block**		
1	Laparoscopic Surgery Set with Hysterestoscope & resectoscope with High Definition Camera & Monitor	1 no. for Hospital Block	1,50,000.00
2	Portable Ultrasound & Colour Doppler	1 no. for Hospital Block	24,000.00
3	Cardiotocography Machine	1 no. for Hospital Block	20,000.00
4	Gynae OT Table	1 no. for Hospital Block	36,000.00
5	Delivery Bed	1 no. for Hospital Block	10,000.00
6	LEEP SYSTEM with Smoke Evacuator & integrated cart	1 no. for Hospital Block	16,000.00
7	Cryo Surgical System	1 no. for Hospital Block	6,000.00
8	Caesarean set	1 no. for Hospital Block	9,200.00
9	MTP Suction	1 no. for Hospital Block	13,200.00

10	Abdominal/Vaginal Hysterectomy Set	2 no. for Hospital Block	22,000.00
K	**For Pediatrics Deptt. at Hospital Block**		
1	Neonatal open care system	6 no. for Hospital Block	24,000.00
2	Centrifuge machine with hematocrit reader(Capillary)	1 no. for Hospital Block	8,000.00
3	Transport Incubator	1 no. for Hospital Block	8,000.00
4	Bubble CPAP Machine	2 no. for Hospital Block	18,000.00
L	**For Blood Bank Deptt. at Hospital Block**		
1	BIOSEALER	4 no. for Hospital Block	8,000.00
2	BIOSEALER (HAND HELD)	2 no. for Hospital Block	6,000.00
3	DONOR COUCH	4 no. for Hospital Block	40,000.00
4	FOLDING DONOR COUCH (ONE SET - 2 CHAIR WITH ONE TROLLEY)	2 no. for Hospital Block	6,000.00
5	REFRIGERATED BLOOD BAG CENTRIFUGE (12 BAGS)	2 no. for Hospital Block	1,20,000.00
6	BLOOD BANK REFRIGERATOR	4 no. for Hospital Block	20,000.00
7	`-40 DEEP FREEZER Single Door	2 no. for Hospital Block	17,000.00
8	-80 DEEP FREEZER	2 no. for Hospital Block	22,000.00
9	PLATELET AGITATOR & INCUBATOR (96 BAGS)	2 no. for Hospital Block	16,000.00

10	REAGENT REFRIGERATOR (300L)	2 no. for Hospital Block	8,000.00
11	STERILE CONNECTING DEVICE	1 no. for Hospital Block	16,000.00
12	LAMINAR FLOW (SMALL)	1 no. for Hospital Block	6,000.00
13	ELISA READER AND WASHER	2 no. for Hospital Block	14,000.00
14	GEL / BEAD CENTRIFUGE AND INCUBATOR	2 no. for Hospital Block	22,000.00
15	CELL COUNTER (3 PART DIFF.)	1 no. for Hospital Block	7,000.00
16	MOBILE TRANSPORT BOX	4 no. for Hospital Block	10,800.00
17	APHERESIS MACHINE	1 no. for Hospital Block	60,000.00
18	TABLE TOP MICRPLATE CENTRUFUGE	1 no. for Hospital Block	5,000.00
M	**For Physical Medicine & Rehabilitation (PMR) Deptt. at Hospital Block**		
1	Operation theater instruments (as per requirement) See Separate Worksheet	1 SET for Hospital Block	10,000.00
2	Tilt Table (Motorized)	1 no. for Hospital Block	6,000.00
3	Bicycle Ergometry/Recumbent Cycle Excerciser	1 no. for Hospital Block	6,000.00
N	**Other Equipment At Hospital Block**		
1	Multipa Monitors	1 no. for General Medicine + 1no. for Psychiary + 1no. for Obs. & Gyn. + 1no. for Dentistry + 2no. for Cardiology + 4no. for CTVS + 2no. for Neurosurgery + 4no. for	3,24,000.00

		Gastroenterology + 5no. for Surgical Oncology + 6no. for Urology + 5no. for Nephrology + 5no. for Emengency & Trauma = 37 nos.	
2	Syringe Infusion Pumps	64 no. for Aneasthesia + 20no. for Emengency & Trauma + 10no. for Cardiology + 10no. for CTVS + 5no. for Neurosurgery + 4no. for Gastroenterology + 5no. for Surgical Oncology + 5no. for Urology + 30no. for General Medicine & Immunology + 2no. for Obs. & Gyn. = 155 nos.	1,38,200.00
3	Electro Surgical Unit (ESU)	3 no. for Surgery + 1no. for Emengency & Trauma + 2no. for CTVS + 1no. for Neurosurgery + 1no. for Dentistry + 1no. for Gasenterology + 2no. for Urology + 1no. for Pediatric Surgery + 1no. for Dermatology + 2no. for Orthopedics = 15 nos.	2,67,000.00
4	Electro Surgical Unit (ESU) with Vessel Sealing	1 no. for Surgery + 1no. for Obs. & Gyn. + 2no. for Surgical Oncology = 4 nos.	1,48,000.00
5	Suction Machine	4 no. for Surgery + 4no. for General Medicine & Immunology + 2no. for Orthopaedics + 3no. for Cardiology + 2no. for CTVS + 2no. for Neurosurgery + 1no. for Surgical Oncology + 2no. for Pediatric Surgery + 12no. for Aneasthesia = 32 nos.	67,600.00
6	OT Table Electro-Hydraulic	1 no. for Surgery + 1no. for Ophthalmology + 2no. for Dematology + 2no. for CTVS + 1no. for Neurosurgery + 1no. for Surgical Oncology + 2no. for Emergency & Trauma = 10 nos.	4,86,000.00

7	OT Table Hydraulic	1 no. for Surgery	16,000.00
8	C-Arm with IITV	2 no. for Orthopaedics + 1no. for Neurosurgery + 1no. for Urology + 1no. for Nephrology = 5 nos.	3,90,000.00
9	Defibrillator	2 no. for General Medicine & Immunology + 2no. for Cardiology + 3no. for CTVS + 1no. for Neurosurgery + 1no. for Medical Oncology + 1 no. for Urology + 4no. for Emergency & Trauma = 15 nos.	1,26,00.00
10	BiPAP/CPAP	3 no. for General Medicine & Immunology	12,000.00
11	ECG Machine 12-channels	2 no. for General Medicine & Immunology + 1no. for Cardiology + 1no. for CTVS + 1no. for Medical Oncology + 5no. for Aneasthesia + 2 no. for Emergency & Trauma = 12 nos.	24,000.00
12	Pulse Oximeter	6 no. for Pediatrics + 2no. for Neurology = 8 nos.	20,000.00

Part II: Required Delivery Schedule:

a) For Indigenous goods or for imported goods if supplied from India:

60 days from date of Notification of Award except, for MRI, CT Scan, DR System, DRF System, DSA, Gamma Knife, Gamma Camera, PET CT, Cath Lab. for which the delivery period will be 90 days from date of Notification of Award. The date of delivery will be the date of delivery at consignee site (Tenderers may quote earliest delivery period).

b) For Imported goods directly from foreign:

60 days from date of opening of L/C except, for MRI, CT Scan, DR System, DRF System, DSA, Gamma Knife, Gamma Camera, PET CT, Cath Lab. for which the delivery period will be 90 days from date of opening of L/C. The date of delivery will be the date of Bill of Lading/Airway Bill. (Tenderers may quote earliest delivery period).

c) Installation & commissioning within 15 days of receipt of goods at site except for MRI, CT Scan, DR System, DRF System, DSA, Gamma Knife, Gamma Camera, PET CT, Cath Lab. for which installation & commissioning to be done within 60 days of receipt of goods at site.

Note: Indigenous goods or imported goods if supplied from India (offered in INR) which are linked with supply of directly imported goods are to be supplied within the contractual delivery period as stated in para b) above.

For delayed delivery and/ or installation and commissioning liquidated damages will get applied As per GCC clause 23.

Part III: Scope of Incidental Services:

Installation & Commissioning, Supervision, Demonstration, Trial run and Training etc. as specified in GCC Clause 13

Part IV:

Turnkey (if any) as per details in Technical Specification.

Part V:

Warranty & Comprehensive Maintenance Contract (CMC) as per bid document.

Part VI:

Required Terms of Delivery and Destination.

a) For Indigenous goods or for imported goods if supplied from India:

At Consignee Site – Specified in the List of Requirements

Insurance (local transportation and storage) would be borne by the Supplier from ware house to the consignee site for a period including 3 months beyond date of delivery

b) For Imported goods directly from abroad:

The foreign tenderers are required to quote their rates on CIP Named Port of Destination Basis giving break up of the price as per the Proforma prescribed in the Price Schedule. Purchaser will place the order on Consignee site basis. The shipping arrangements shall be made by the supplier accordingly.

Insurance (local transportation and storage) would be extended and borne by the Supplier from ware house to the consignee site for a period including 3 months beyond date of delivery.

NOTE: For goods to be imported from abroad the Tender shall submit Proforma Invoice within 07 working days from the date of Award for establishing Letter of Credit process else Liquidated Damages as per tender conditions will be applied.

Consignee/destination details as mentioned in Section-XXI.

Turnkey Works:

The Tenderer shall examine the existing site where the equipment is to be installed to assess the site condition for Equipment placement and installation. Whether the scope of Turnkey Works is mentioned in the Technical Specifications or not, the bidder's offer should be on a "Turn Key" basis including all costs associated with the supply, installation and commissioning of the equipment.

For equipment, the major Turnkey work to be carried out are given at the end of Technical Specification. The Tenderer to quote prices indicating break-up of prices of the Machine and Turnkey Job of Hospital/Institution/Medical College. The Turnkey costs to be quoted in Indian Rupee will be added for Ranking Purpose. The taxes to be paid extra, to be specifically stated. In the absence of any such stipulation the price will be taken inclusive of such duties and taxes and no claim for the same will be entertained later. The Turnkey Work should completely comply with AERB requirement, if any.

Bidders must take into consideration in its bid, the costs to be incurred for any additional work pertaining to civil, Electrical, Plumbing, sanitary, Radiation protection as per Govt. regulation, furniture, servo stabilizers, U.P.S. etc. required for successful installation testing and commissioning of the Medical Equipment and the "All inclusive lump sum price" should include all such costs, each **schedule/package** is to be considered a package in itself and suppliers to execute the order package on a "turn key basis" including all civil, electrical, air – conditioning & allied requirement for the equipment, at the site.

For X-Ray and related equipment, bidders who have Type Approval/NOC of AERB/BARC shall only be considered with documentary evidence. It shall be bidder's responsibility to get the equipment installed and commissioned as per AERB / BARC guidelines and installed and commission on "Turn Key basis".

Bidders must take into consideration in its bid the costs to be incurred for any additional work viz. Electrical cabling, plugs of suitable ratings from the source, Electrical points of suitable ratings, water connection, water drainage, plumbing, air-conditioning, Radiation protection/shielding, mechanical & allied requirement for the equipment etc. required for successful installation, commissioning and running of the Equipment and the quoted "All inclusive lump sum price" should include all such costs.

Section – VII

Technical Specifications

Enclosed as Annexure-A

Section – VIII
Quality Control Requirements

(Proforma for equipment and quality control employed by the manufacturer(s)

Tender Reference No.
Date of opening
Time
Name and address of the Tenderer:
Note: All the following details shall relate to the manufacturer(s) for the goods quoted for.

01 Name of the manufacturer
- a. full postal address
- b. full address of the premises
- c. telegraphic address
- d. telex number
- e. telephone number
- f. fax number

02 Plant and machinery details
03 Manufacturing process details
04 Monthly (single shift) production capacity of goods quoted for
- a. normal
- b. maximum

05 Total annual turn-over (value in Rupees)
06 Quality control arrangement details
- a. for incoming materials and bought-out components
- b. for process control
- c. for final product evaluation

07 Test certificate held
- a . type test
- b . BIS/ISO certification
- c . any other

08 Details of staff
- a. technical
- b. b skilled
- c. c unskilled

Signature and seal of the Tenderer

Section – IX
Qualification Criteria

1. The tenderer must be a manufacturer. In case the manufacturer does not quote directly, they may authorize an agent as per Proforma of Manufacturer authorization form as given in the tender enquiry document to quote and enter into a contractual obligation.

2(a) The Manufacturer should have supplied and installed in last Five years from the date of Tender Opening, at least 25% of the quoted quantity (rounded off to next whole number) of the similar equipment meeting major parameters of technical specification which is functioning satisfactorily.

2(b) The Tenderers quoting as authorized representative of the manufacturer meeting the above criteria should have executed at least one contract in the last five years from the date of tender opening of medical equipment anywhere in India of the same manufacturer.

The bidders/ firms identifying as MSME and or start-up firms are exempted from fulfilling criteria at S. No. 2 (a) and 2(b) stated above. However, this does not exempt any bidder/ firm/ manufacturer from fulfilling the quality requirements.

Note: **"If the bidder is a MSME, it shall declare in the bid document the Udyog Aadhar Memorandum Number issued to it under the MSMED Act, 2006. If a MSME bidder do not furnish the UAM Number along with bid documents, such MSME unit will not be eligible for the benefits available under Public Procurement Policy for MSEs Order 2012." Traders/resellers/distributors/authorized agents will not be considered for availing benefits under PP Policy 2012 for MSEs as per MSE guidelines issued by MoMSME.**

Note

1. The tenderer shall give an affidavit as per Section-XIX of the TE document.

2. In support of 2(a) & 2(b), the Tenderer shall furnish Performance statement in the enclosed Proforma 'A'.

   The manufacturer/Indian Agent as Tenderer shall furnish Satisfactory Performance Certificate/Installation Reports in respect of above, duly notarized in the country of origin, along with the tender.

   The Tenderer shall furnish a brief write-up, packed with adequate data explaining and establishing his available capacity/capability (both technical and financial) to perform the Contract (if awarded) within the stipulated time period, after meeting all its current/present commitments. The Tenderer shall also furnish details of Equipment and Quality Control in the enclosed Section VIII.

3. Notwithstanding anything stated above, the Purchaser reserves the right to assess the Tenderer's capability and capacity to perform the contract satisfactorily before deciding on award of Contract, should circumstances warrant such an assessment in the overall interest of the Purchaser.

4. Tender shall submit audited balance sheets for the last three years. Annual Turnover statements should be certified by chartered accountant bearing their membership No.

5. The Purchaser reserves the right to ask for a free demonstration of the quoted equipment at a pre determined place acceptable to the purchaser for technical acceptability as per the tender specifications, before the opening of the Price Tender.

6. The Tenderer shall furnish copy of all Purchase Orders (complete with specifications and prices) in their Technical Bid for the same model supplied to Govt. Hospitals/PSU Hospitals/UN Agencies/Govt. Labs/Corporate Hospitals in the last one year from the date of Technical Bid opening.

PROFORMA 'A'

PROFORMA FOR PERFORMANCE STATEMENT

(For the period of last five years)

Tender Reference No. : _____

Date of opening : _____

Time : _____

Name and address of the Tenderer : _____

Name and address of the manufacturer : _____

Order placed by (full address of Purchaser / Consignee)	Order number and date	Description and quantity of ordered goods and services	Value of order (Rs.)	Date of completion of Contract		Remarks indicating reasons for delay if any	Have the goods been functioning Satisfactorily (attach documentary proof)**
				As per contract	Actual		
1	2	3	4	5	6	7	8

We hereby certify that if at any time, information furnished by us is proved to be false or incorrect, we are liable for any action as deemed fit by the purchaser in addition to forfeiture of the earnest money.

Signature and seal of the Tenderer

**** The documentary proof will be a certificate from the consignee/end user with cross-reference of order no. and date in the certificate along with a notarized certification authenticating the correctness of the information furnished.**

Section – X
TENDER FORM

Date_____

To

Sr. CGM - I,
HSCC (India) Ltd
E-6 (A) Sector -1 ,
Noida - 201301
UP INDIA

Ref. Your TE document No. _____dated _____

We, the undersigned have examined the above mentioned TE document, including amendment/corrigendum No. _____, dated _____, the receipt of which is hereby confirmed.

We now offer to supply and deliver_____ *(Description of goods and services)* in conformity with your above referred document for the sum as shown in the price schedule(s), attached herewith and made part of this tender.

If our tender is accepted, we undertake to supply the goods and perform the services as mentioned above, in accordance with the delivery schedule specified in the List of Requirements.
We further confirm that, if our tender is accepted, we shall provide you with a performance security of required amount in an acceptable form in terms of GCC clause 5, read with modification, if any, in Section - V – "Special Conditions of Contract", for due performance of the contract.

We agree to keep our tender valid for acceptance as required in the GIT clause 20, read with modification, if any in Section - III – "Special Instructions to Tenderers" or for subsequently extended period, if any, agreed to by us. We also accordingly confirm to abide by this tender up to the aforesaid period and this tender may be accepted any time before the expiry of the aforesaid period. We further confirm that, until a formal contract is executed, this tender read with your written acceptance thereof within the aforesaid period shall constitute a binding contract between us.

We further understand that you are not bound to accept the lowest or any tender you may receive against your above-referred tender enquiry.
We confirm that we do not stand deregistered/banned/blacklisted by any Govt. Authorities.
We confirm that we fully agree to the terms and conditions specified in above mentioned TE document, including amendment/ corrigendum if any

(Signature with date)

(Name and designation) Duly authorised to sign tender for and on behalf of

SECTION – XI PRICE SCHEDULE

A) PRICE SCHEDULE FOR DOMESTIC GOODS or GOODS OF FOREIGN ORIGIN LOCATED WITHIN INDIA

1	2	3	4	5						6
Schedule	Brief Description of Goods	Country of Origin	Quantity (Nos.)	Price per unit (Rs.)						Total Price (at Consignee Site) basis (Rs.)
				Ex - factory/ Ex - warehouse /Ex-showroom /Off - the shelf (a)	GST (b)	Packing and Forwarding charges (c)	Inland Transportation, Insurance for a period including 3 months beyond date of delivery, loading/ unloading and Incidental costs till consignee's site (d)	Incidental Services (including Installation & Commissioning, Supervision, Demonstration and Training) at the Consignee's site (e)	Unit Price (at Consignee Site) basis (Rs.) (f) =a+b+c+d +e	4 x 5(f)

Total Tender price in Rupees: _____

In words: _____

Note: -

1. If there is a discrepancy between the unit price and total price THE UNIT PRICE shall prevail.
2. The charges for Annual CMC after warranty shall be quoted separately as per Section – XI – Price Schedule C
3. Specify HSN Codes: ( )

Name_____

Business Address_____

Place: _____ **Signature of Tenderer**_____

Date: _____ **Seal of the Tenderer**_____

SECTION – XI PRICE SCHEDULE

B) PRICE SCHEDULE FOR GOODS TO BE IMPORTED FROM ABROAD

1	2	3	4	5						6
Schedule	Brief Description of Goods	Country of Origin	Quantity (Nos.)	Price per unit (Currency)						
				FOB/FCA price at port/ airport of Lading (a)	Carriage & Insurance (port of loading to port of destination) and other Incidental costs (b)	CIP Price (name place/port of destination in India (c) =a+b	Loading & unloading at name place/port of entry in India + local transportation and storage to the consignee site + Extended Insurance for a period including 3 months beyond date of delivery in INR (d)	Incidental Services (including installation, commissioning, supervision, demonstration & training) at consignee's site in INR (e)	Unit Price on CIP Port of destination + Extended Insurance+ local transportation and storage at consignee site) (f)=c+d+e	Total price on CIP Port of destination + Extended Insurance+ local transportation and storage at consignee site) 4X 5 (f)

Total CIP Price in words: _____

Bidder must specify Custom Duty : INR.....

Bidder must specify IGST: INR.....

Note: -

1. If there is a discrepancy between the unit price and total price THE UNIT PRICE shall prevail.
2. The charges for Annual CMC after warranty shall be quoted separately as per Section – XI – Price Schedule C
3. The Tenderer will be fully responsible for the safe arrival of the goods at destination (consignee site) in good condition as per CIP at Consignee's site
4. Custom Duty & IGST quoted as applicable as per Item HSN Code will be added to Total CIP Price to arrive at Price at consignee site for evaluation purpose.
5. Specify HSN Codes : ( ).

Indian Agency Commission - __% of FOB/FCA.

Name_____
Business Address_____
Place: _____ **Signature of Tenderer_____**
Date: _____ **Seal of the Tenderer_____**

For price bid evaluation bidder must quote actual custom duty and IGST as applicable on the imported equipment offered.

Note : Reimbursement of Custom Duty & IGST: The Custom Duty & IGST amount as mentioned in the price schedule in INR will be compared with the actual total Custom Duty amount paid to custom department & actual IGST paid and the same will be reimbursed to the supplier as per the following:

a). If the custom duty & IGST amount as mentioned in the price schedule is **equal** to the actual total custom duty amount levied by the custom department & actual IGST paid, the actual total custom duty amount levied by custom department & actual IGST paid shall prevail and reimbursed to the supplier in INR accordingly on submission of original documentary evidence.

b). If the custom duty & IGST amount as mentioned in the price schedule is **more** than the actual total custom duty amount levied by the custom department, the actual total custom duty amount levied by custom department & actual IGST paid shall prevail and reimbursed to the supplier in INR accordingly on submission of original documentary evidence.

c). If the custom duty & IGST amount as mentioned in the price schedule is **less** than the actual total custom duty amount levied by the custom department and the actual IGST paid, the custom duty amount and IGST as mentioned in the price schedule shall prevail only and reimbursed to the supplier in INR accordingly.

d). Any upward/downward change in custom duty & IGST as a result of any statutory variation in custom duty & IGST taking place within the contract terms shall be allowed to the extent of actual quantum of custom duty paid by the supplier. In case of downward revision in the custom duty, the actual quantum of reduction shall be reimbursed to the purchaser by the supplier. All such adjustments shall include all reliefs, exemptions, rebates, concessions etc. Obtained by the supplier.

SECTION – XI PRICE SCHEDULE

C) PRICE SCHEDULE FOR ANNUAL COMPREHENSIVE MAINTENANCE CONTRACT AFTER WARRANTY PERIOD

1	2	3	4					5
Schedule No.	**BRIEF DESCRIPTION OF GOODS**	**QUANTITY. (Nos.)**	**Annual Comprehensive Maintenance Contract Cost for Each Unit year wise*.**					**Total Annual Comprehensive Maintenance Contract Cost for 5 Years [3 x (4a+4b+4c+4d+4e)]**
			1st	**2nd**	**3rd**	**4th**	**5th**	
			a	**B**	**c**	**d**	**E**	

*** After completion of Warranty period**

NOTE:-

1. In case of discrepancy between unit price and total prices, THE UNIT PRICE shall prevail.
2. The cost of Comprehensive Maintenance Contract (CMC) which includes preventive maintenance including testing & calibration as per technical/ service /operational manual, labour and spares, after satisfactory completion of Warranty period may be quoted for next 5 years on yearly basis for complete equipment and Turnkey (if any).
3. The cost of CMC may be quoted along with taxes applicable on the date of Tender Opening. The taxes to be paid extra, to be specifically stated. In the absence of any such stipulation the price will be taken inclusive of such taxes and no claim for the same will be entertained later.
4. Cost of CMC will be added for Ranking/Evaluation purpose.
5. The payment of CMC will be made as per clause GCC clause 21.1 (D).
6. The uptime warranty will be 98 % on 24 (hrs) X 7 (days) X 365 (days) basis or as stated in Technical Specification of the TE document.
7. All software updates should be provided free of cost during CMC period.
8. The stipulations in Technical Specification will supersede above provisions
9. The supplier shall keep sufficient stock of spares required during Annual Comprehensive Maintenance Contract period. In case the spares are required to be imported, it would be the responsibility of the supplier to import and get them custom cleared and pay all necessary duties.

Name_____
Business Address_____
Signature of Tenderer_____
Seal of the Tenderer_____

Place: _____
Date: _____

SECTION XI– PRICE SCHEDULE
D) PRICE SCHEDULE FOR TURNKEY

Schedule No.	BRIEF TURNKEY DESCRIPTION OF GOODS	CONSIGNEE	Turnkey price

Note: -

1. The cost of Turnkey as per Technical Specification (Section VII) may be quoted on lump sum along with taxes applicable on the date of Tender Opening. The taxes to be paid extra, to be specifically stated. In the absence of any such stipulation the price will be taken inclusive of such taxes and no claim for the same will be entertained later.
2. Cost of Turnkey will be added for Ranking/Evaluation purpose.
3. The payment of Turnkey will be made as per clause GCC clause 21.1 (c).
4. The stipulations in Technical Specification will supersede above provisions

Name_____

Business Address_____

Place: _____ **Signature of Tenderer**_____

Date: _____ **Seal of the Tenderer**_____

SECTION – XII
QUESTIONNAIRE

Fill up the Section XX – Check List for Tenderers and enclose with the Tender

1. The tenderer should furnish specific answers to all the questions/issues mentioned in the Checklist. In case a question/issue does not apply to a tenderer, the same should be answered with the remark "not applicable".

2. Wherever necessary and applicable, the tenderer shall enclose certified copy as documentary proof/ evidence to substantiate the corresponding statement.

3. In case a tenderer furnishes a wrong or evasive answer against any of the question/issues mentioned in the Checklist, its tender will be liable to be ignored.

SECTION – XIII
BANK GUARANTEE FORM FOR EMD

Whereas _____ (hereinafter called the "Tenderer") has submitted its quotation dated _____ for the supply of _____ (hereinafter called the "tender") against the purchaser's tender enquiry No. _____ Know all persons by these presents that we _____ of _____ (Hereinafter called the "Bank") having our registered office at _____ are bound unto _____ (hereinafter called the "Purchaser) in the sum of _____ for which payment will and truly to be made to the said Purchaser, the Bank binds itself, its successors and assigns by these presents. Sealed with the Common Seal of the said Bank this _____ day of _____ 20____. The conditions of this obligation are:

(1) If the Tenderer withdraws or amends, impairs or derogates from the tender in any respect within the period of validity of this tender.

(2) If the Tenderer having been notified of the acceptance of his tender by the Purchaser during the period of its validity:-

a) fails or refuses to furnish the performance security for the due performance of the contract.

or

b) fails or refuses to accept/execute the contract.

or

c) if it comes to notice that the information/documents furnished in its tender is incorrect, false, misleading or forged

We undertake to pay the Purchaser up to the above amount upon receipt of its first written demand, without the Purchaser having to substantiate its demand, provided that in its demand the Purchaser will note that the amount claimed by it is due to it owing to the occurrence of one or both the two conditions, specifying the occurred condition(s).

This guarantee will remain in force for a period of forty-five days after the period of tender validity and any demand in respect thereof should reach the Bank not later than the above date.

(Signature of the authorised officer of the Bank)

Name and designation of the officer

Seal, name & address of the Bank and address of the Branch

SECTION – XIV
MANUFACTURER'S AUTHORISATION FORM

To

Sr. CGM - I,
HSCC (India) Ltd
E-6 (A) Sector -1 ,
Noida - 201301
UP INDIA

Dear Sirs,

Ref. Your TE document No _____, dated _____

We, _____ who are proven and reputable manufacturers of_____(*name and description of the goods offered in the tender*) having factories at_____, hereby authorise Messrs_____(*name and address of the agent*) to submit a tender, process the same further and enter into a contract with you against your requirement as contained in the above referred TE documents for the above goods manufactured by us.

We further confirm that no supplier or firm or individual other than Messrs. _____ (*name and address of the above agent*) is authorised to submit a tender, process the same further and enter into a contract with you against your requirement as contained in the above referred TE documents for the above goods manufactured by us.

We also hereby extend our full warranty, CMC as applicable as per clause 15 of the General Conditions of Contract, read with modification, if any, in the Special Conditions of Contract for the goods and services offered for supply by the above firm against this TE document.

Yours faithfully,

[*Signature with date, name and designation*]
for and on behalf of Messrs_____

[*Name & address of the manufacturers*]

Note: 1. This letter of authorisation should be on the letter head of the manufacturing firm and should be signed by a person competent to legally bind the manufacturer.
2. Original letter may be sent.

SECTION – XV

BANK GUARANTEE FORM FOR PERFORMANCE SECURITY/ CMC SECURITY

Sr. CGM - I,
HSCC (India) Ltd
E-6 (A) Sector -1 ,
Noida - 201301
UP INDIA

WHEREAS _____ (Name and address of the supplier) (Hereinafter called "the supplier") has undertaken, in pursuance of contract no_____ dated _____ to supply (description of goods and services) (herein after called "the contract").
AND WHEREAS it has been stipulated by you in the said contract that the supplier shall furnish you with a bank guarantee by a scheduled commercial bank recognised by you for the sum specified therein as security for compliance with its obligations in accordance with the contract;
AND WHEREAS we have agreed to give the supplier such a bank guarantee;

NOW THEREFORE we hereby affirm that we are guarantors and responsible to you, on behalf of the supplier, up to a total of. _____ (Amount of the guarantee in words and figures), and we undertake to pay you, upon your first written demand declaring the supplier to be in default under the contract and without cavil or argument, any sum or sums within the limits of (amount of guarantee) as aforesaid, without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the supplier before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the contract to be performed there under or of any of the contract documents which may be made between you and the supplier shall in any way release us from any liability under this guarantee and we hereby waive notice of any such change, addition or modification.

This guarantee shall be valid up to 30/66 months from the date of Notification of Award i.e. up to ---------- (indicate date)

……
(Signature with date of the authorised officer of the Bank)
……
Name and designation of the officer
……
……
Seal, name & address of the Bank and address of the Branch

SECTION – XVI
CONTRACT FORM - A

CONTRACT FORM FOR SUPPLY, INSTALLATION, COMMISSIONING, HANDING OVER, TRIAL RUN, TRAINING OF OPERATORS & WARRANTY OF GOODS

(Address of the Purchaser's/Consignee's
office issuing the contract)

Contract No_____ dated_____

This is in continuation to this office's Notification of Award No_____ dated _____

1. Name & address of the Supplier: _____
2. Purchaser's TE document No_____ dated_____ and subsequent Amendment No_____, dated_____ (if any), issued by the purchaser
3. Supplier's Tender No_____ dated_____ and subsequent communication(s) No_____ dated _____ (if any), exchanged between the supplier and the purchaser in connection with this tender.
4. In addition to this Contract Form, the following documents etc, which are included in the documents mentioned under paragraphs 2 and 3 above, shall also be deemed to form and be read and construed as integral part of this contract:

   (i) General Conditions of Contract;
   (ii) Special Conditions of Contract;
   (iii) List of Requirements;
   (iv) Technical Specifications;
   (v) Quality Control Requirements;
   (vi) Tender Form furnished by the supplier;
   (vii) Price Schedule(s) furnished by the supplier in its tender;
   (viii) Manufacturers' Authorisation Form (if applicable for this tender);
   (ix) Purchaser's Notification of Award

   Note: The words and expressions used in this contract shall have the same meanings as are respectively assigned to them in the conditions of contract referred to above. Further, the definitions and abbreviations incorporated under clause 1 of Section II – 'General Instructions to Tenderers' of the Purchaser's TE document shall also apply to this contract.
5. Some terms, conditions, stipulations etc. out of the above-referred documents are reproduced below for ready reference:
   (i) Brief particulars of the goods and services which shall be supplied/ provided by the supplier are as under:

Schedule No.	Brief description of goods/services	Accounting unit	Quantity to be supplied	Unit Price	Total price	Terms of delivery

Any other additional services (if applicable) and cost thereof: _____

Total value (in figure) _____ (In words) _____

2. Delivery schedule

(iii) Details of Performance Security

(iv) Quality Control

(a) Mode(s), stage(s) and place(s) of conducting inspections and tests.

(b) Designation and address of purchaser's inspecting officer

(v) Destination and despatch instructions

(vi) Consignee, including port consignee, if any

3. Warranty clause
4. Payment terms
5. Paying authority

_____

(Signature, name and address
of the Purchaser's/Consignee's authorised official)
For and on behalf of_____

Received and accepted this contract

(Signature, name and address of the supplier's executive
duly authorised to sign on behalf of the supplier)
For and on behalf of _____
(Name and address of the supplier)

(Seal of the supplier)
Date: _____

Place: _____

SECTION – XVI
CONTRACT FORM – B
CONTRACT FORM FOR ANNUAL COMPREHENSIVE MAINTENANCE CONTRACT

Annual CM Contract No._____ dated_____
Between

(Address of Head of Hospital/Institute/Medical College)
And

(Name & Address of the Supplier)

Ref: Contract No_____ dated_____ (Contract No. & date of Contract for supply, installation, commissioning, handing over, Trial run, Training of operators & warranty of goods)

In continuation to the above referred contract

6. The Contract of Annual Comprehensive Maintenance is hereby concluded as under: -

1	2	3	4					5
Schedule No.	**BRIEF DESCRIPTION OF GOODS**	**QUANTITY. (Nos.)**	**Annual Comprehensive Maintenance Contract Cost for Each Unit year wise*.**					**Total Annual Comprehensive Maintenance Contract Cost for 5 Years [3 x (4a+4b+4c+4d+4e)]**
			1st	**2nd**	**3rd**	**4th**	**5th**	
			a	**b**	**c**	**d**	**e**	

Total value (in figure) _____ (In words) _____

b) The CMC commence from the date of expiry of all obligations under Warranty i.e. from_____ (date of expiry of Warranty) and will expire on _____ (date of expiry of CMC)

c) The cost of Annual Comprehensive Maintenance Contract (CMC) which includes preventive maintenance, labour and spares, after satisfactory completion of Warranty period may be quoted for next 5 years as contained in the above referred contract on yearly basis for complete equipment (including X ray tubes, Helium for MRI, Batteries for UPS, other vacuumatic parts, _____ & _____) and Turnkey (if any).

d) There will be 98% uptime warranty during CMC period on 24 (hrs) X 7 (days) X 365 (days) basis, with penalty, to extend CMC period by double the downtime period.

e) During CMC period, the supplier shall visit at each consignee's site for preventive maintenance including testing and calibration as per the manufacturer's service/ technical/ operational manual. The supplier shall visit each consignee site as recommended in the manufacturer's manual, but at least once in 6 months commencing from the date of the successful completion of warranty period for preventive maintenance of the goods.

f) All software updates should be provided free of cost during CMC.

g) The bank guarantee valid till _____ [(fill the date) 2 months after expiry of entire CMC period] for an amount of Rs. _____ [(fill amount) equivalent to 2.5 % of the cost of the equipment as per contract] shall be furnished in the prescribed format given in Section XV of the TE document, along with the signed copy of Annual CMC within a period of 21 (twenty one) days of issue of Annual CMC failing which the proceeds of Performance Security shall be payable to the Purchaser/Consignee.

h) If there is any lapse in the performance of the CMC as per contract, the proceeds Annual CMC bank guarantee for an amount of Rs. _____ (equivalent to 2.5 % of the cost of the equipment as per contract) shall be payable to the Consignee.

i) **Payment terms:** The payment of Annual CMC will be made against the bills raised to the consignee by the supplier on six monthly basis after satisfactory completion of said period, duly certified by the HOD concerned. The payment will be made in Indian Rupees.

j) **Paying authority:** _____ (name of the consignee i.e. Hospital/ Institute /Medical College's authorised official)

_____

(Signature, name and address
of Hospital/Institute/Medical College's authorised official)
For and on behalf of_____

Received and accepted this contract

(Signature, name and address of the supplier's executive
duly authorised to sign on behalf of the supplier)
For and on behalf of _____
(Name and address of the supplier)

(Seal of the supplier)
Date: _____
Place: _____

SECTION – XVII
CONSIGNEE RECEIPT CERTIFICATE
(To be given by consignee's authorized representative)

The following store (s) has/have been received in good condition:

1) Contract No. & date :_____

2) Supplier's Name :_____

3) Consignee's Name & Address with telephone No. & Fax No. : _____

4) Name of the item supplied :_____

5) Quantity Supplied :_____

6) Date of Receipt by the Consignee :_____

7) Name and designation of Authorized Representative of Consignee :_____

8) Signature of Authorized Representative of Consignee with date :_____

9) Seal of the Consignee :_____

SECTION – XVIII

Proforma of Final Acceptance Certificate by the Consignee

No_____
Date_____

To

M/s _____
_____
_____

Subject: Certificate of commissioning of equipment/plant.

This is to certify that the equipment(s)/plant(s) as detailed below has/have been received in good conditions along with all the standard and special accessories and a set of spares (subject to remarks in Para no.02) in accordance with the contract/technical specifications. The same has been installed and commissioned.

(a) Contract No_____ dated_____

(b) Description of the equipment(s)/plants: _____

(c) Equipment(s)/ plant(s) nos.:_____

(d) Quantity: _____

(e) Bill of Loading/Air Way Bill/Railway Receipt/ Goods Consignment Note no_____ dated _____

(f) Name of the vessel/Transporters:_____
(g) Name of the Consignee:_____
(h) Date of commissioning and proving test:_____

Details of accessories/spares not yet supplied and recoveries to be made on that account.

Sl. No.	Description of Item	Quantity	Amount to be recovered No.

The proving test has been done to our entire satisfaction and operators have been trained to operate the equipment(s)/plant(s).
The supplier has fulfilled its contractual obligations satisfactorily ## or
The supplier has failed to fulfil its contractual obligations with regard to the following:
He has not adhered to the time schedule specified in the contract in dispatching the documents/drawings pursuant to 'Technical Specifications'.
He has not supervised the commissioning of the equipment(s)/plant(s)in time, i.e. within the

period specified in the contract from date of intimation by the Purchaser/Consignee in respect of the installation of the equipment(s)/plant(s).
The supplier as specified in the contract has not done training of personnel.

The extent of delay for each of the activities to be performed by the supplier in terms of the contract is
The amount of recovery on account of non-supply of accessories and spares is given under Para no.02.
The amount of recovery on account of failure of the supplier to meet his contractual obligations is_____ (here indicate the amount).
Signature
Name
Designation with stamp

Explanatory notes for filling up the certificate:

i.He has adhered to the time schedule specified in the contract in dispatching the documents/drawings pursuant to 'Technical Specification'.

ii.He has supervised the commissioning of the equipment(s)/plant(s) in time, i.e. within the time specified in the contract from date of intimation by the Purchaser/Consignee in respect of the installation of the equipment(s)/plant(s).

iii.Training of personnel has been done by the supplier as specified in the contract

iv.In the event of documents/drawings having not been supplied or installation and commissioning of the equipment(s)/plant(s) having been delayed on account of the supplier, the extent of delay should always be mentioned in clear terms.

SECTION – XIX
AFFIDAVIT/UNDERTAKING

I/ We have read and understood the instructions and the terms and conditions contained in the document. I/We accordingly accept all terms and conditions of the tender enquiry document including the essential conditions specially incorporated in the tender enquiry like terms of terms of payment, liquidated damages clause, warranty clause, dispute resolution mechanism applicable law. I/ We confirm that we do not stand deregistered/debarred/banned/blacklisted by any Govt. Authorities. I/ We do hereby declare that the information furnished/ uploaded is correct to the best of my/our knowledge and belief. I/We hereby certify that the prices offered by us in this tender is not higher than the prices we had offered to any other Govt. of India Organisation(s)/PSU(s) during the last one year and shall provide the justification for reasonableness of our offered price whenever asked during evaluation of our submitted bid. I/ We also hereby certify that if at any time, information furnished by us is proved to be false or incorrect; I/ We are liable for any action as deemed fit by the purchaser in addition to forfeiture of the earnest money.

Date:

(Signature of the bidder)
NAME & ADDRESS OF THE BIDDER

NOTE: To be submitted on non-judicial stamp paper of Rs. 10/- duly certified by Public Notary

SECTION – XX
CHECKLIST
Name of Tenderer:
Name of Manufacturer:

Sl No.	Activity	Yes/ No/ NA	Page No. in the TE document	Remarks
1. a.	Have you enclosed EMD of required amount for the quoted schedules?			
b.	In case EMD is furnished in the form of Bank Guarantee, has it been furnished as per Section XIII?			
c.	In case Bank Guarantee is furnished, have you kept its validity of 165 days from Techno Commercial Tender Opening date as per clause 19 of GIT?			
2. a.	Have you enclosed duly filled Tender Form as per format in Section X?			
b.	Have you enclosed Power of Attorney in favour of the signatory?			
3.	Are you a SSI unit, if yes have you enclosed certificate of registration issued by Directorate of Industries/NSIC			
4. a.	Have you enclosed clause-by-clause technical compliance statement for the quoted goods vis-à-vis the Technical specifications?			
b.	In case of Technical deviations in the compliance statement, have you identified and marked the deviations?			

Sl No.	Activity	Yes/ No/ NA	Page No. in the TE document	Remarks
5. a.	Have you submitted satisfactory performance certificate/ Installation Reports as per the Proforma for performance statement in Sec. IX of TE document in respect of all orders?			
b.	Have you submitted copy of the order(s) and end user certificate/ Installation Reports?			
6.	Have you submitted manufacturer's authorization as per Section XIV?			
7.	Have you submitted prices of goods, turnkey (if any), CMC etc. in the Price Schedule as per Section XI?			
8.	Have you kept validity of 120 days from the Techno Commercial Tender Opening date as per the TE document?			
9. a.	In case of Indian Tenderer, have you furnished Income Tax Account No. as allotted by the Income Tax Department of Government of India?			
b.	In case of Foreign Tenderer, have you furnished Income Tax Account No. of your Indian Agent as allotted by the Income Tax Department of Government of India?			
10.	Have you intimated the name an full address of your Banker (s) along with your Account Number			
11.	Have you fully accepted payment terms as per TE document?			
12.	Have you fully accepted delivery period as per TE document?			

Sl No.	Activity	Yes/ No/ NA	Page No. in the TE document	Remarks
13.	Have you submitted the certificate of incorporation?			
14.	Have you accepted the warranty as per TE document?			
15.	Have you accepted terms and conditions of TE document?			
16.	Have you furnished documents establishing your eligibility & qualification criteria as per TE documents?			
17.	Have you furnished Annual Report (Balance Sheet and Profit & Loss Account) for last three years prior to the date of Tender opening duly certified by chartered accountant bearing their membership no.?			
18.	Have you enclosed the Affidavit as per Section XIX of the TE Document?			

N.B.

1. All pages of the Tender should be page numbered and indexed.
2. The Tenderer may go through the checklist and ensure that all the documents/confirmations listed above are enclosed in the tender and no column is left blank. If any column is not applicable, it may be filled up as NA.
2. It is the responsibility of tendered to go through the TE document to ensure furnishing all required documents in addition to above, if any.

(Signature with date)

(Full name, designation & address of the person duly authorised sign on behalf of the Tenderer)
For and on behalf of

(Name, address and stamp of the tendering firm)

Section – XXI
Consignee List

Consignee	Medical Institutions	Contact Address.
Director, AIIMS, Raebareli-229405. U.P., India.	Director, AIIMS, Raebareli-229405. U.P., India.	Director, AIIMS, Munshiganj, Raebareli-229405. U.P., India.

NB: The Purchaser/consignee will ensure timely issue of CDEC, Octroi Exemption Certificates, Road Permits & Entry Tax Exemption Certificates, wherever applicable, to the suppliers.

INTEGRITY PACT

Section – XXII

To,

……
…….
…….

Sub: NIT No. ……. for the work …….....

Dear Sir,

It is here by declared that the Medical Superintendent, AIIMS Raebareli (Purchaser) is committed to follow the principle of transparency, equity and competitiveness in public procurement.

The subject Notice Inviting Tender (NIT) is an invitation to offer made on the condition that the Bidder will sign the integrity Agreement, which is an integral part of tender/bid documents, failing which the tenderer/bidder will stand disqualified from the tendering process and the bid of the bidder would be summarily rejected.

This declaration shall form part and parcel of the Integrity Agreement and signing of the same shall be deemed as acceptance and signing of the Integrity Agreement on behalf of the Purchaser.

Yours faithfully

Medical Superintendent,
AIIMS, Raebareli

To,

Medical Superintendent,
AIIMS Raebareli

Sub: Submission of Tender for the work of ……...……....

Dear Sir,

I/We acknowledge that the AIIMS Raebareli (Purchaser) is committed to follow the principles thereof as enumerated in the Integrity
Agreement enclosed with the tender/bid document.

I/We agree that the Notice Inviting Tender (NIT) is an invitation to offer made on the condition that I/We will sign the enclosed integrity Agreement, which is an integral part of tender documents, failing which I/We will stand disqualified from the tendering process. I/We acknowledge that the making of the bid shall be regarded as an unconditional and absolute acceptance of this condition of the NIT.

I/We confirm acceptance and compliance with the Integrity Agreement in letter and spirit and further agree that execution of the said Integrity Agreement shall be separate and distinct from the main contract, which will come into existence when tender/bid is finally accepted by the Purchaser. I/We acknowledge and accept the duration of the Integrity Agreement, which shall be in the line with Article 1 of the enclosed Integrity Agreement.

I/We acknowledge that in the event of my/our failure to sign and accept the Integrity Agreement, while submitting the tender/bid, the Purchaser / HSCC (India) Limited shall have unqualified, absolute and unfettered right to disqualify the tenderer/bidder and reject the tender/bid in accordance with terms and conditions of the tender/bid.

Yours faithfully

(Duly authorized signatory of the Bidder)

To be signed by the bidder and same signatory competent / authorized to sign the relevant contract on behalf of the Purchaser

INTEGRITY AGREEMENT

This Integrity Agreement is made at ..... on this ..... day of ..... 20....

BETWEEN

AIIMS Raebareli (Hereinafter referred as the "Purchaser", which expression shall unless repugnant to the meaning or context hereof include its successors and permitted assigns)

AND

.....(Name and Address of the Individual/firm/Company)Through…..... (Details of duly authorized signatory)…… (Hereinafter referred to as the "Bidder/Supplier" and which expression shall unless repugnant to the meaning or context hereof include its successors and permitted assigns)

Preamble

WHEREAS HSCC on behalf of Purchaser has floated the Tender (NIT No. .....) (Hereinafter referred to as "Tender/Bid") and intends to award, under laid down organizational procedure, contract for .....(Name of work)hereinafter referred to as the "Contract".

AND WHEREAS the Purchaser values full compliance with all relevant laws of the land, rules, regulations, economic use of resources and of fairness/transparency in its relation with its Bidder(s) and Supplier(s).

AND WHEREAS to meet the purpose aforesaid both the parties have agreed to enter into this Integrity Agreement (hereinafter referred to as "Integrity Pact" or "Pact"), the terms and conditions of which shall also be read as integral part and parcel of the Tender/Bid documents and Contract between the parties.

NOW, THEREFORE, in consideration of mutual covenants contained in this Pact, the parties hereby agree as follows and this Pact witnesses as under:

Article 1: Commitment of the Purchaser/ HSCC

(1) The Purchaser commits itself to take all measures necessary to prevent corruption and to observe the following principles:

(a) No employee of the Purchaser/ HSCC, personally or through any of his/her family members, will in connection with the Tender, or the execution of the Contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.

(b) The Purchaser/ HSCC will, during the Tender process, treat all Bidder(s) with equity and reason. The Purchaser will, in particular, before and during the Tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential / additional information through which the Bidder(s) could obtain an advantage in relation to the Tender process or the Contract execution.

(c) The Purchaser/ HSCC shall endeavor to exclude from the Tender process any person, whose conduct in the past has been of biased nature.

(2) If the Purchaser obtains information on the conduct of any of its employees which is a criminal offence under the Indian Penal code (IPC)/Prevention of Corruption Act, 1988 (PC Act) or is in violation of the principles herein mentioned or if there be a substantive suspicion in this regard, the Purchaser will inform the Chief Vigilance Officer of the Purchaser/ HSCC and in addition can also initiate disciplinary actions as per its internal laid down policies and procedures.

Article 2: Commitment of the Bidder(s)/Supplier(s)

(1) It is required that each Bidder/Supplier (including their respective officers, employees and agents) adhere to the highest ethical standards, and report to the Government / Department all suspected acts of fraud or corruption or Coercion or Collusion of which it has knowledge or becomes aware, during the tendering process and throughout the negotiation or award of a contract.

(2) The Bidder(s)/ Supplier (s) commits himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the Tender process and during the Contract execution:

(a) The Bidder(s)/ Supplier (s) will not, directly or through any other person or firm, offer, promise or give to any of the Purchaser's/ HSCC's employees involved in the Tender process or execution of the Contract or to any third person any material or other benefit which he/she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the Tender process or during the execution of the Contract.

(b) The Bidder(s)/ Supplier (s) will not enter with other Bidder(s) into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to cartelize in the bidding process.

(c) The Bidder(s)/ Supplier (s) will not commit any offence under the relevant IPC/PC Act. Further the Bidder(s)/Contractor(s) will not use improperly, (for the purpose of competition or personal gain), or pass on to others, any information or documents provided by the Purchaser as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.

(d) The Bidder(s)/ Supplier (s) of foreign origin shall disclose the names and addresses of agents/ representatives in India, if any. Similarly Bidder(s)/ Supplier (s) of Indian Nationality shall disclose names and addresses of foreign agents/representatives, if any. Either the Indian agent on behalf of the foreign principal or the foreign principal directly could bid in a tender but not both. Further, in cases where an agent participate in a tender on behalf of one manufacturer, he shall not be allowed to quote on behalf of another manufacturer along with the first manufacturer in a subsequent/parallel tender for the same item.

(e) The Bidder(s)/ Supplier (s) will, when presenting his bid, disclose any and all payments he has made, is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the Contract.

(3) The Bidder(s)/ Supplier (s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.

(4) The Bidder(s)/ Supplier (s) will not, directly or through any other person or firm indulge in fraudulent practice means a willful misrepresentation or omission of facts

or submission of fake/forged documents in order to induce public official to act in reliance thereof, with the purpose of obtaining unjust advantage by or causing damage to justified interest of others and/or to influence the procurement process to the detriment of the Government interests.

(5) The Bidder(s)/ Supplier (s) will not, directly or through any other person or firm use Coercive Practices (means the act of obtaining something, compelling an action or influencing a decision through intimidation, threat or the use of force directly or indirectly, where potential or actual injury may befall upon a person, his/ her reputation or property to influence their participation in the tendering process).

Article 3: Consequences of Breach

Without prejudice to any rights that may be available to the Purchaser/ HSCC under law or the Contract or its established policies and laid down procedures, the Purchaser shall have the following rights in case of breach of this Integrity Pact by the Bidder(s)/ Supplier (s) and the Bidder/ Supplier accepts and undertakes to respect and uphold the Purchaser's absolute right:

(1) If the Bidder(s)/ Supplier (s), either before award or during execution of Contract has committed a transgression through a violation of Article 2 above or in any other form, such as to put his reliability or credibility in question, the Purchaser after giving 14 days' notice to the Supplier shall have powers to disqualify the Bidder(s)/ Supplier (s) from the Tender process or terminate/determine the Contract, if already executed or exclude the Bidder/ Supplier from future contract award processes.
The imposition and duration of the exclusion will be determined by the severity of transgression and determined by the Purchaser. Such exclusion may be forever or for a limited period as decided by the Purchaser.

(2) Forfeiture of EMD/Performance Guarantee/Security Deposit: If the Purchaser has disqualified the Bidder(s) from the Tender process prior to the award of the Contract or terminated/determined the Contract or has accrued the right to terminate/determine the Contract according to Article 3(1), the Purchaser apart from exercising any legal rights that may have accrued to the Purchaser, may in its considered opinion forfeit the entire amount of Earnest Money Deposit, Performance Guarantee and Security Deposit of the Bidder/Supplier.

(3) Criminal Liability: If the Purchaser obtains knowledge of conduct of a Bidder or Supplier, or of an employee or a representative or an associate of a Bidder or Supplier which constitutes corruption within the meaning of IPC Act, or if the Purchaser has substantive suspicion in this regard, the Purchaser will inform the same to law enforcing agencies for further investigation.

Article 4: Previous Transgression

(1) The Bidder declares that no previous transgressions occurred in the last 5 years with any other Company in any country confirming to the anticorruption approach or with Central Government or State Government or any other Central/State Public Sector Enterprises in India that could justify his exclusion from the Tender process.

(2) If the Bidder makes incorrect statement on this subject, he can be disqualified from the Tender process or action can be taken for banning of business dealings/ holiday listing of the Bidder/ Supplier as deemed fit by the Principal/ Owner.

(3) If the Bidder/ Supplier can prove that he has resorted / recouped the damage caused by him and has installed a suitable corruption prevention system, the Purchaser may, at its own discretion, revoke the exclusion prematurely.

Article 5: Equal Treatment of all Bidders/ Supplier /Subsuppliers

(1) The Bidder(s)/ Supplier (s) undertake(s) to demand from all subsuppliers a commitment in conformity with this Integrity Pact. The Bidder/ Supplier shall be responsible for any violation(s) of the principles laid down in this agreement/Pact by any of its Subsuppliers/sub-vendors.
(2) The Purchaser will enter into Pacts on identical terms as this one with all Bidders and Suppliers.
(3) The Purchaser will disqualify Bidders, who do not submit, the duly signed Pact between the Principal/ Owner and the bidder, along with the Tender or violate its provisions at any stage of the Tender process, from the Tender process.

Article 6- Duration of the Pact

The validity of this Integrity Pact shall be from the date of its signing and extend upto 5 years or the complete execution of the Contract to the satisfaction of both the Purchaser and Bidder/ Supplier, including warranty period, whichever is later. In case Bidder is unsuccessful, this Integrity Pact shall expire after six months from the date of signing of the Contract.
If any claim is made/lodged during the time, the same shall be binding and continue to be valid despite the lapse of this Pacts as specified above, unless it is discharged/determined by the Competent Authority.

Article 7- Other Provisions

(1) This Pact is subject to Indian Law, place of performance and jurisdiction is the Headquarters of the Purchaser, who has floated the Tender.
(2) Changes and supplements need to be made in writing. Side agreements have not been made.
(3) If the Supplier is a partnership or a consortium, this Pact must be signed by all the partners or by one or more partner holding power of attorney signed by all partners and consortium members. In case of a Company, the Pact must be signed by a representative duly authorized by board resolution.
(4) Should one or several provisions of this Pact turn out to be invalid; the remainder of this Pact remains valid. In this case, the parties will strive to come to an agreement to their original intentions.
(5) It is agreed term and condition that any dispute or difference arising between the parties with regard to the terms of this Integrity Agreement / Pact, any action taken by the Owner/Principal in accordance with this Integrity Agreement/ Pact or interpretation thereof shall not be subject to arbitration.

Article 8- LEGAL AND PRIOR RIGHTS

All rights and remedies of the parties hereto shall be in addition to all the other legal rights and remedies belonging to such parties under the Contract and/or law and the same shall be deemed to be cumulative and not alternative to such legal rights and remedies

aforesaid. For the sake of brevity, both the Parties agree that this Integrity Pact will have precedence over the Tender/Contract documents with regard any of the provisions covered under this Integrity Pact.

IN WITNESS WHEREOF the parties have signed and executed this Integrity Pact at the place and date first above mentioned in the presence of following witnesses:

..... (For and on behalf of Purchaser)

..... (For and on behalf of Bidder/Supplier)

WITNESSES:

1. .....
(signature, name and address)

2. .....
(signature, name and address)

Place: Date:

F.No.31026/36/ 2016-MD
Ministry of Chemicals & Fertilizers
Government of India
Department of Pharmaceuticals

Dated 18th May, 2018
Janpath Bhawan, New Delhi

Subject: Guidelines for implementing the provisions of Public Procurement (Preference to Make in India) Order (PPO), 2017, related to procurement of Goods & Services in Medical Devices - reg.

No. 31026/36/2016-MD: Whereas Department of Industrial Policy and Promotion (DIPP), pursuant to Rule 153(iii) of the General Financial Rules 2017, has issued Public Procurement(Preference to Make in India) Order (PPO), 2017 vide no. P-4502/2/2017-B.E.-II dated 15.06.2017.

Whereas DIPP, in order to facilitate the implementation of the PPO, 2017, vide D.O. No. P-45021/2/2017-BE-II dated 14.08.2017 has identified Department of Pharmaceuticals (DoP) as the Nodal Department for implementing the provisions of the PPO 2017 relating to goods &services related to Pharmaceuticals Sector. DIPP vide Office Memorandum no. P-45021/13/2017-PP Section BE-II dated 23.03.2018 has decided that the Nodal Ministry for product category Medical Devices shall be Department of Pharmaceuticals.

Whereas Para 3 of PPO, 2017 makes it mandatory for procuring entities to give purchase preference to local suppliers, Para 5 of PPO, 2017 empowers Nodal Ministry to prescribe percentage and the manner of calculation of minimum local content in respect of any particular item relating to medical devices and Para 9 of PPO, 2017 deals with verification of local content.

Now, therefore, DoP issues the following guidelines for implementation of the provisions of PPO, 2017 with respect to public procurement of Goods & Services in Medical Devices:

1) **Percentage of Minimum Local Content:** Medical Device Industry (MDI) is a multi-product industry responsible for provisioning of wide variety of crucial medical products ranging from simple tongue depressors & glucometer strips to large radiology & electronic medical equipment. The medical devices industry can be broadly classified as consisting of (a) medical disposables and consumables; (b) medical electronics, hospital equipment, surgical instruments; (c) Implants; and (d) In-Vitro Devices/Diagnostic Reagents. Individually there are around 5000 different kinds of medical devices and it is not practical to prescribe the local content and percentage of preference in domestic procurement for each medical device.

   Moreover, DoP needs accurate and reliable data regarding total capacity and production of various categories of medical devices in India, regarding the level

of competition in the market in different segment of medical devices and regarding the processes involved in the manufacture of medical devices for prescribing the percentage of minimum local content for each category of medical devices, for determining the manner of calculation of local content in the medical devices and for determining the purchase preference to be given to local suppliers in the procurement by the public agencies. The percentage of local content, the manner of calculation of the local content and the provision of supplies to be procured from local suppliers may be revised after relevant data in this regard becomes available.

However for the time being, based on the present level of understanding of the medical device market in India and discussion with various industry representatives, DoP in accordance with Para 5 of PPO, 2017 prescribes the following percentages of minimum local content for various categories of medical devices for preference in public procurement:

Category of Medical Devices	% of Minimum Local Content	% of Local Content proposed to be increased in phased manner over next three years
Medical disposables and consumables	50%	50% to 75%
Medical electronics, hospital equipment, surgical instruments	25%	25% to 45%
Implants	40%	40% to 60%
Diagnostic Reagents/IVDs	25%	25% to 45%

2) **Manner of calculation of Local Content:** DoP in accordance with Para 5 of PPO, 2017 prescribes the following manner of calculation of local content:

i. Local content of Medical Device shall be computed on the basis of the cost of domestic components in the device/service compared to the total cost of the device/service. The total cost of product shall be the cost incurred for the production of the medical device including direct component i.e. material cost, manpower cost and overhead costs including profit but excluding taxes and duties.

ii. The determination of local content cost shall be based on the following:
   a) In the case of direct component (material), based on the country of origin
   b) In the case of manpower, based on domestic manpower

iii. The calculation of local content of the combination of several kinds of goods shall be based on the ratio of the sum of multiplication of local content of each goods with the acquisition price of each goods to the acquisition price of combination of goods.

iv. Format of calculation of local content shall be as contained in **Enclosure-I**.

3) **Requirement of Purchase Preference**: Purchase preference shall be given to local suppliers by all procuring entities as per provisions laid down in para 3 of PPO, 2017. Further, as per provisions of Para 3(a) of the PPO 2017 i.e. in procurement of goods where sufficient local capacity and local competition exists and estimated value of procurement is Rs 50 Lakhs or less, a list of goods will be issued by this Department in due course. Till the time such a list is issued, provisions of para 3(b) or para 3(c) of PPO, 2017, as applicable, shall apply for all procurements without regard to value of procurement.

4) **Verification of Local Content**:

a) The local supplier at the time of tender, bidding or solicitation shall be required to furnish self-certification of local content in the format as contained in **Enclosure-II**.

b) In cases of procurement for a value in excess of Rs. 10 crores, the local supplier shall be required to provide a certificate from the statutory auditor or cost auditor of the company (in the case of companies) or from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local content.

c) In each tender, procuring entity shall clearly mention the details of its competent authority which is empowered to look into procurement related complaints and the fees for such complaints, relating to implementation of PPO, 2017.

d) In case a complaint is received by the procuring entity against the claim of a bidder regarding domestic value addition in medical device, the procuring entity shall have full rights to inspect and examine all the related documents and take a decision. In case any clarification is needed, matter may be referred to DoP to the Grievance Redressal Committee consisting of the following:
   1. Chairman - Joint Secretary (Medical Device) in DoP
   2. Member - Director / Deputy Secretary (Medical Devices) in DoP
   3. Member - Representative (not below the rank of Deputy Secretary) from M/o Health & Family Welfare / CDSCO

e) Any complaint referred to the procuring entity shall be submitted along with all necessary documentation in support of the complaint regarding domestic value addition claimed in medical device and shall be disposed of within 4 weeks of the reference by the procuring entity.

f) In case, the complaint is referred to DoP by a bidder or procuring entity, the grievance redressal committee shall dispose of the complaint within 4 weeks of its reference and receipt of all documents from the bidder after taking in consideration, the view of the procuring entity. The bidder shall be required to furnish the necessary documentation in support of the local content claimed in medical devices to the grievance redressal committee under DoP within 2 weeks of the reference of the matter. If no information is furnished by the bidder, the grievance redressal committee may take further necessary action, in consultation with procuring entity to establish the bonafides of the claim.

g) In case of reference of any complaint by the concerned bidder, there would be a fee of Rs. 2 Lakh or 1% of the value of the medical devices being procured (subject to a maximum of Rs. 5 Lakh), whichever is higher, to be paid by way of a Demand Draft to be deposited with the procuring entity, along with the

complaints by the complainant. In case, the complaint is found to be incorrect, the complaint fee shall be forfeited. In case, the complaint is upheld and found to be substantially correct, deposited fee of the complainant would be refunded without any interest.

5) All other provisions of PPO, 2017 shall be applicable as such and shall be adhered to by all procuring agencies for procurement of any medical device.

6) These guidelines shall remain applicable for one year or until further orders from the date of its issuance.

(Dinesh Kapila)
Economic Adviser
Ph. 23381927

Enclosure-I

Calculation of Local Content

Name of manufacturer	Calculation by Manufacturer (Cost per unit of product)		
Cost Component	Cost (Domestic Component) a	Total Cost b	Percentage of Local Content c=(a/b)*100
I. .... II. .... III. Total Cost (Excluding tax and duties)			

Note:

I. **Cost (Domestic Component)**: Cost of domestic component may be calculated based on one of the followings depending on data available. Each of these calculations should provide consistent result.

a. Sum of the costs of all inputs which go into the product (including duties and taxes levied on procurement of inputs except those for which credit/ set-off can be taken) and which have not been imported directly or through a domestic trader or an intermediary.

b. Ex-Factory Price of product minus profit after tax minus sum of imported Bill of Material used (directly or indirectly) as inputs in producing the product (including duties and taxes levied on procurement of inputs except those for which credit/ set-off can be taken) minus warranty costs.

c. Market price minus post-production freight, insurance and other handling costs minus profit after tax minus warranty costs minus sum of Imported Bill of Material used as inputs in producing the product (including duties and taxes levied on procurement of inputs except those for which credit / set-off can be taken) minus sales and marketing expenses.

II. **Total Cost**: Total cost may be calculated based on one of the following depending on data available. Each of these calculations should provide consistent result.

a. Sum of the costs of all inputs which go into the product (including duties and taxes levied on procurement of inputs except those for which credit / set-off can be taken).

b. Ex-Factory Price of product minus profit after tax, minus warranty costs.

c. Market price minus post-production freight, insurance and other handling costs minus profit after tax, minus warranty costs minus sales and marketing expenses.

Enclosure-II

Format for Affidavit of Self Certification regarding Local Content in a Medical Device to be provided on Rs. 100/- Stamp Paper

Date:_____

I_____ **S/o,D/o,W/o**_____, Resident of

_____

do hereby solemnly affirm and declare as under:

That I will agree to abide by the terms and conditions of the policy of Government of India issued vide Notification No:

That the information furnished hereinafter is correct to best of my knowledge and belief and I undertake to produce relevant records before the procuring entity or any authority so nominated by the Department of Pharmaceuticals, Government of India for the purpose of assessing the local content.

That the local content for all inputs which constitute the said medical device has been verified by me and I am responsible for the correctness of the claims made therein.

That in the event of the domestic value addition of the product mentioned herein is found to be incorrect and not meeting the prescribed value-addition norms, based on the assessment of an authority so nominated by the Department of Pharmaceuticals, Government of India for the purpose of assessing the local content, action will be taken against me as per Order No. P-45021/2/2017-B.E.-II dated 15.06.2017 and Guidelines issued vide letter no. 31026/36/2016-MD dated 18.05.2018.

I agree to maintain the following information in the Company's record for a period of 8 years and shall make this available for verification to any statutory authority:

i) Name and details of the Domestic Manufacturer (Registered Office, Manufacturing unit location, nature of legal entity)
ii) Date on which this certificate is issued
iii) Medical devices for which the certificate is produced
iv) Procuring entity to whom the certificate is furnished
v) Percentage of local content claimed
vi) Name and contact details of the unit of the manufacturer
vii) Sale Price of the product
viii) Ex-Factory Price of the product
ix) Freight, insurance and handling
x) Total Bill of Material
xi) List and total cost value of inputs used for manufacture of the medical device
xii) List and total cost of inputs which are domestically sourced. Value addition certificates from suppliers, if the input is not in- house to be attached.
xiii) List and cost of inputs which are imported, directly or indirectly

For and on behalf of **(Name of firm/entity)**

Authorized signatory (To be duly authorized by the Board of Director)

F. No. Z.28018/67/2017-EPW
Government of India
Ministry of Health & Family Welfare
(EPW Division)

Nirman Bhawan, New Delhi
Dated: 05.11.2019

OFFICE MEMORANDUM

Sub: Implementation of Public Procurement (Preference to Make in India) Order, 2017 issued by DPIIT -reg.

The undersigned is directed to refer to minutes of 8th Standing Committee meeting of DPIIT held on 10.10.2019 to review the implementation of Public Procurement (Preference to Make in India) Order, 2017 (PPP-MII). It is observed that in-spite of this office OMs dated 14.01.2018, 23.02.2018, 26.02.2018, 02.11.2018 & 25.10.2019, procuring entities are still incorporating restrictive and discriminatory clause of mandatory USFDA/European CE certification in procurement of health sector goods.

Standing Committee has directed that stipulation of mandatory exclusion clause like USFDA/European CE certified products is restrictive and discriminatory for local manufacturers and hence policy should be discontinued forthwith.

All the procuring entities under MoHFW are requested to strictly comply with the provisions of PPP-MII Order, 2017 and desist from such restrictive and discriminatory clauses.

(Rajendran Nair M.B.)
Under Secretary (EPW)
Tel:-23061436

To:

1. PPS to DGHS, Nirman Bhawan, New Delhi
2. PPS to AS&FA, AS&MD, AS(H), AS&DG, MoHFW, Nirman Bhawan, New Delhi.
3. JS(SP)/ JS(LA)/ JS(SK)/ JS(MA)/ JS(RS)/ JS(SS)/ JS(VG)/ JS(MKB)/JS(NACO)/ JS(PP)/ JS(GM)/JS(RS)/ EA (PN)/EA(NS).
4. The Director, AIIMS, New Delhi/ Patna/ Bhubaneshwar/ Raipur/ Bhopal/ Jodhpur/ Rishikesh.

*HSCC (I) LTD
E-6(A), Sector-1 Noida
Dt. 15/11/19
Sl.No. 1533

Annexure-A, Technical Specification

CT 128 Slice	
SN	**Technical Specification**
	The system should be latest state of art, independent 64 or more rows of detectors with capable of generating at least 128 slices per rotation and with capability of coronary CTA. The system should be capable of integrating with any PACS/HIS system. The system should be DICOM - ready with true isotropic volume acquisition and sub millimeter resolution. The model quoted should be, AERB Type approved
	The essential requirements of the system are as follows:-
1)	**Gantry:**
a	Aperture: 70 cms or more
b	FOV: 50 cms or more
c	3-D laser lights for positioning.
2)	**X-Ray Generator:**
	High Frequency type.
	Power output : **70 kW** or higher. The generator with the higher power output would be preferred. Also the bidder should mention whether the system would be capable of tackling the dual energy applications if there is an upgrade.
	mA Range: 20-600 mA (With incremental steps of 10 mA)
	KV Range: 80-130KV or more
3)	**X-Ray Tube:**
	a. Tube Voltage: 80-130 kV or more
	b. Anode Heat Storage Capacity of at least 7.0 MHU or direct cooling tube
4)	**Patient Table:**
	a. Load carrying capacity at least of 140 Kg with positional accuracy of 1 mm or less. b. Metal free scan-able range of 150 cm or more c. Floating table top with foot pedal/hand control for positioning.
5)	**Spiral Acquisition:**
	a. Scan Time should be 0.4 sec or less for full 360 degree rotation.
	b. Minimum slice thickness should be 0.625 mm or less.
	c. Pitch Factor (volume pitch): freely selectable in auto mode and also manually variable between 0.5 to 1.5 or more. Specify all possible pitch selections.
	d. Bolus Triggered or bolus chase spiral acquisition should be available.
	e. Real time x-ray dose reduction which combines both Z axis and angular tube current modulation to adjust the dose to the size and shape of individual.
	f. Radiation dose reduction technique i.e. mA modulation in X, Y & Z axis, etc.
	g. It should have iterative image reconstruction capabilities.
6)	**Image Resolution:**
	a. High contrast resolution should be at least 15 lp/cm for axial and spiral scan at 0% MTF with full FOV.

	b. Low contrast resolution – 5mm or less at 3.0 HU using 20 cm CATPHAN phantom on 10 mm slice thickness.
7)	**Data Acquisition System:**
	a. Detector- Capable of acquiring 64 slices per 360 degree of rotation.
	b. At least 64 rows of independent detectors with generation of at least 128 slices per rotation with maximum Z-axis coverage
	c. Solid state or rare earth detectors of latest technology free from repeated calibration.
8)	**Image Reconstruction:**
	a. High speed real time reconstruction with display matrix of 1024x1024 or more.
	Reconstructed slice thickness should be sub-millimeter to 10mm freely selectable
9)	**Operator Console:**
	a. High resolution medical grade LCD/TFT color monitors.
	b. Should perform Registration, scheduling, protocol selection, Volume rendering, volume measurements, Multi-planar Reconstruction, and standard evaluation application and all available post processing functions without the help of the satellite workstation.
	c.Latest Branded computer with minimum with i5 & 8GB RAM.
	d. Image storing capacity of 2,50,000 or more.
	e. Auto-voice capability with custom designed key board and mouse.
	f. Archiving options: CD-R, DVD, should be available. 500 DVDs should be provided.
10	**Workstations & Server: A multimodality client server architecture based solution with minimum concurrent 24000 slices rendering capacity, with 64GB RAM with storage of minimum 2TB and Additional online storage of 10 TB on the server.** **Client hardware specification- 2 no.s Workstations with two licences: dual quad core processor, 16 GB RAM, 1TB hard drive, DVD Writing with medical grade monitor of minimum 3 MP resolution & 3 button mouse.**
	MPR
	Minimum and maximum intensity projection.
	3D volume rendering.
	3D SSD (Shaded Surface Display).
	Advanced vessel analysis.
	Auto bone removal.
	Virtual endoscopy.
	Dedicated colonoscopy.
	Time point comparison.
	Whole organ (brain & body) perfusion CT.
	Coronary tree analysis: automated 3D processing of coronary arteries, calcium scoring, stent analysis, LV analysis.
	Neuro DSA with automated bone removal.
	Fusion CT: fusion of morphological data of CT & MRI.
	Application:

a	a. The system should have standard software like 3D Volume rendering , MIP,CT angio, color angio Display, CT Perfusion , should be available as standard on the system
b	The following soft ware should be offered as standard (MPR , ROI , VOLUME CALCULATION , CT NUMBER DISPLAY , WINDOW WIDTH , WINDOW LEVEL , TOPOGRAM DISPLAY , CINE DISPLAY , HRCT LUNG, DYNAMIC SCAN)
c	Cardiac Scan Attachment with ECG Gated Segmented Recon , Calcium score , Vessel Flythrough of the Coronaries should be available with software package.
d	Automatic display of MPR images after scan will be preferred.
e	Bolus triggered Brain Perfusion CT study (at least 3-level) with automatic CBF, CBV, MTT, TTP maps, ROI placing, comparing ROI, saving maps
f	Neuro DSA with automatic bone removal software
h	Fusion CT: fusion of morphological data obtained on CT, MR or DSA.
11	**Patient communication system:**
	An integrated intercom and Automated Patient Instruction System (API) should be provided.
12	**Accessories: (Make and Model of all the quoted accessories should be specified)**
a)	Dry chemistry camera of DPI 500 or more of any reputed make.
b)	Lead Glass(As per AERB Norm) of size : 120 x 90 cm or more
c)	UPS with Maintenance free batteries capable of 30 minutes back up to run the entire CT, Computers, Dry chemistry camera, Work Stations etc.
d)	**Dual Head Pressure Injector of reputed make with 50 nos of Syringes & 200 sets of tubings. Specify the make of Injector.**
e)	Multi Para monitor 10 inch monitor , ECG , SPO2 , NIBP module of a reputed make for monitoring vitals.
g)	LIGHT WEIGHT lead aprons(0.25mm lead equivalent) with hangers - 4 Nos.
h)	Lead apron stand — 1 No.
j)	Thyroid Shields – 2 nos.
k)	Gonadal Shields – 2 nos.
13	Training for a period of Two Weeks.
14	**Certifications:**
I	**Deleted**
	The system should be AERB type approved and the copy of E-LORA Listing should be submitted along with bid.
	Regular QA according to AERB norms will be responsibility of bidder during warranty and CMC period.
	The Scope of Work- Site Modification Work - CT
1	**The scope of work includes complete Civil work, Electrical, Plumbing, Furnishing, Air-conditioning and Fire fighting for the construction of CT Scan Centre**
2	While preparing the plan, the following aspects have to be addressed.

a)	Care should be taken to provide easy negotiation of the patient stretchers/ trolleys through corridors and doors. Adequate steel railing like protection of the CT table to avoid hit by the incoming stretchers to be done.
b)	Radiation shielding for doors, walls, windows etc.
c)	Furniture like desk, chairs, shelves etc.
d)	Patient stretcher and other furniture/ accessory to make the scan centre functional.
3	**The cost of Site modification work for the area of 1200 sq.ft and Air-conditioning of Tonnage 15 TR will be considered for Ranking / Evaluation purpose.**
4	**Moreover Bidders will have to quote the Unit Rates of the following components of Site modification work.**
a)	Civil works
b)	Electrical work
c)	Public health (plumbing and sanitary fittings).
d)	Air Conditioning (HVAC)
e)	Interior Furnishing & Furniture
f)	Miscellaneous
	Scope of work for **Site modification work** CT unit works:-
	The scope of work includes complete Civil work, Electrical, Plumbing, Furnishing, Air-conditioning and Fire fighting for the installation of CT centre
	The CT SCAN CENTRE shall consist of the following rooms:
a.	CT Gantry Room
b.	Console room
c.	Equipment room
d.	**Patient preparation room cum change room**
f.	Patient waiting area
g.	Radiologist room
	The actual area of Site modification work done will be considered for payment, based on the unit rates and site measurements
	Civil work
a)	Civil construction work including construction of brick wall if any, plastering, flooring as per the approved plan and equipment layout plan.
b)	Concrete bed at CT equipment area.
c)	Platform for unloading and shifting the CT should be provided if necessary.
d)	Cable tray, trench & channel – necessary trenches, cable tray and channels at required location would be provided.
e)	All the construction work to be done as per the final plan approved by the Consignee.
f)	Active and passive room shielding for magnetic, fringe field should be provided as per the requirement of the equipment.
a)	**Flooring**
1	600 x 600 mm vitrified tiles with 100mm tile skirting to match in console room, lobby and patient preparation areas, Radiologist room etc.

2	50 mm thick cement concrete flooring with Vinyl flooring in CT equipment / UPS room.
b)	**Painting**
1	Two coats Plastic Emulsion Paint over 2 coats of wall putty including primer in patient preparation area, Lobby area, console room, CT Gantry & Equipment room etc.
c)	False Ceiling
1	Acoustical tile for ceiling with light weight insulating material of high quality supported on grid or finished seamless with support above ceiling. Finished with white paint or powder coated with white paint, if metallic. Ceiling height to suit the equipment mount and clearances.
	Plumbing work
1	All water pipes and fittings shall be of high density polythene of approved and standard make. The gratings shall be brass chrome plated. All plumbing accessories should be of standard make.
2	Hot water service to be provided if required.
	Electrical work
1	The supplier shall be required to specify the total load requirements for the CT scan centre including the load of air conditioning , room lighting and for the accessories if any. The supply line will be provided by the Institute up to one point within the CT Scan centre area. The distribution panel shall be provided by the vendor. Few lights in each room shall be connected to the UPS to provide emergency lighting.
2	The electrical work shall include the following:
a.	Wiring – All interior electrical wiring- with main distribution panel board, necessary MCBs, DB, joint box, switch box etc. the wires shall be of copper of different capacity as per the load and should be renowned make as listed below.
b.	Switches light and power points should be of modular type and of standard make as listed below.
c.	General lights –LED light fittings with 500 Lux Illumination
3	**AIR CONDITIONING:**
	Ductable package air conditioners and split AC units may be used according to room requirement and suitability. Humidity control should be effective to eliminate moisture condensation on equipment surface. The Air conditioning should be designed with standby provision to function 24 hours a day.
	The outdoor units of AC should have grill coverings to prevent theft and damage.
	Ventilation is required in toilet.
2	**Environment specifications:**
a)	Relative Humidity range: To be maintained between 60% and 80% in all areas except equipment room which shall be as per requirement of the equipment.
b)	Temperature ranges: 22± 2° C in all areas except equipment room which shall be as per requirement of the equipment.

c)	Air conditioning load: The heat load calculations and maintaining the desired temperature and humidity shall be the responsibility of the bidder.
	Furniture:
a)	Revolving chairs height adjustable, medium-back with hand-rest in the Control room, Radiologist room and viewing area. – 4 NO.S
b)	Chairs for patient waiting area – Three seater (chrome plated). - 10 NO.S
c)	Cupboard with laminate door shutters for storage of spare parts and accessories and records as per requirement. – 3 NO.S
d)	Drug trolleys 1 numbers for patient preparation area.
e)	Patient trolley with rubber foam mattress to be kept in the patient preparation room.
f)	Name boards for all rooms
g)	Tables for Workstation and Radiologist - 2 NO.S
h)	Changing rooms should have change lockers and dressing table.
i)	Dustbins: 10 no.s
j)	Any other furniture item as per requirement.
	All furniture items should be of standard make as mentioned in the table below.
	Miscellaneous:
1	LED X-ray Film viewer with adjustable brightness ; capable of holding 3 films of 14"x17" size. – 2 no.s
2	Cabling of Network (LAN) connectivity for camera system, console system, workstation and computers etc.
3	Broadband connection: for REMOTE SERVICE of CT system.
4	Fire extinguisher Dry CO2 type as required for the building safety.

	LIST OF ITEMS AND SUGGESTED MANUFACTURERS.	
SL NO	**ITEMS**	**PREFERRED MAKES**
A	**FLOORING VITRIFIED TILES**	-Somany, Kajaria , H&R Johnson, RAK india
B	**PAINT**	- Dulux, Asian Paints , Nerolac
C	**PLUMBING**	- Kohler, Jaguar , Grohe , Roca
D	**SANITARY ITEMS**	- CERA, Hindware, Parryware
E	**ELECTRICAL**	
1	**CABLES**	- Finolex, Havells ,V-Guard
2	**SWITCHES**	- Legrand, L&T, Crabtree , Roma
3	**DISTRIBUTION BOX , MCB**	- Legrand, L&T, Siemens, Havels
4	**LIGHT FITTINGS**	- Philips / Crompton / Wipro/Syska
F	**AIR CONDINTIONING**	- Daikin, Hitachi, Blue Star, Voltas,
G	**FURNITURE**	- Hermen Miller , Godrej , Featherlite,Geeken

Sl No	**BILL OF QUANTITY**
1	CT Scanner 128 SLICE CT ,as specified
2	Cardiac package (including Hardware & Software)
3	Servers: as specified
4	Workstation Nodes: as specified
5	Dry Chemistry camera : as specified

17	Antivirus software for Server / Node	2	No
18	Cardiac Package - License	1	No
	ACCESSORIES		
1	Storage box for all coils	1	No
2	Dual Syringe Pressure injector	1	No
3	Dual Syringe Pressure injector syringes	20	No
4	Dual Syringe Pressure injector syringe connector	100	No
5	**MRI Compatible ECG electrodes (disposable)**	100	No
6	MRI Compatible Anaesthesia Machine with integrated Ventilator, 2 vaporiser, circle absorber	1	No
7	**MRI Compatible Multiparmeter Vital Signs Patient Monitor of 5000 Gauss Compliance & Slave monitor**	1	No
8	**MRI compatible syringe pump**	2	No
9	MRI Compatible sets of Laryngoscope : 4 sizes blades- Neonatal, paediatrics, adult, extra large	1	No
10	MRI compatible Magill forceps : Adult size-	2	No
11	MRI compatible Magill forceps : Paediatric size-	2	No
12	Stylet for endotracheal tube : Adult size	3	No
13	Stylet for endotracheal tube : Paediatric size	3	No
14	MRI compatible Clamps : Either towel clip or artery forceps.	2	No
15	MRI Compatible IV stands	2	No
16	MRI compatible suction apparatus	2	No
17	Non-magnetic patient transfer trolleys	2	No
18	Metal detectors : Handheld	2	No
19	Metal detector: Walk-through	1	No
20	Phantoms to be provided for regular QA studies.	1	LS
21	**Endocavitary Coil - Prostrate Study**	1	No
22	**MRI Compatible Dual Syringeless Pressure injectors (Optional)**	1	No
23	**Tube connectors for Syringeless Pressure injector (Optional)**	100	No
24	**Walk through Metal detector with multiple sensor and multiple location LED (Zone III type) - (Optional)**	1	No
25	**Dry Chemistry laser camera as specified**	1	No
	Components of Site Modification Work :		
1	Civil works	1500	ft^2
2	Electrical work	1500	ft^2
3	Public health (plumbing and sanitary fittings).	1500	ft^2
4	Air Conditioning	20	TR
	Furniture:		
1	Revolving chairs height adjustable, medium-back with hand-rest in the Control room, Radiologist room and viewing area	8	No
2	Chairs for patient waiting area – Three seater (chrome plated). -	10	No
3	Cupboard with laminate door shutters for storage of spare parts and accessories and records as per requirement.	3	No
4	Drug trolleys for patient preparation area.	1	No
5	Patient trolley with rubber foam mattress to be kept in the patient preparation room.	2	No
6	Tables for Workstation Nodes.	2	No
7	Changing rooms (with change lockers and dressing table).	1	set
8	Dustbins (plastic with lid) to be provided as required.	10	No
9	Room Signage	1	LS
10	Venetian Blinds	1	LS
	Miscellaneous:		
1	LED X-ray Film viewer with adjustable brightness; capable of holding 3 films of 1	2	No
2	Cabling of Network (LAN) connectivity for camera system, console system, workstat	1	LS
3	Dry chemical powder type fire extinguisher of 5kgs capacity	3	No

MRI 1.5 T	
SN	**Technical Specification**
	1.5 Tesla MRI System with state-of-the-art latest features commercially available at the time of supply should be quoted. The bidder should submit an undertaking that the system and any part thereof is not recycled/refurbished. The system should be based on user friendly platform, reliable and capable of providing excellent performance for clinical imaging and research. The detailed specification that follows shall be understood to be minimum requirement.
1	**MAGNET**
	a. Whole Body 1.5 Tesla Magnetic Resonance Imaging System optimized for higher performance in Whole Body and Vascular examinations with superconducting magnet, high performance gradients and digital Radio Frequency System.
	b. * 1.5T active shielded super conductive magnet should be short bore and non-claustrophobic.
	c. It should have at least 70 cm patient bore with flared opening.
	e. Homogeneity of magnet should be less than 3.5 ppm over 40cm DSV
	f. The magnet should be well ventilated and illuminated with built-in 2 way intercom for communication with patient.
g	Cryogen vessel to be of Helium only with appropriate super thermal shielding and refrigeration facility for minimum Helium boil-off, Specify the Helium tank capacity and boil-off rate.
h	Helium level monitoring equipment in the magnet and facility for appropriate quick shutdown of the magnet in the event of emergency
i	Helium refill time should not be not less than 2years. Please mention the helium refill time.
2	**SHIM SYSTEM**
	a. High performance, highly stable shim system with global and localized automated shimming for high homogeneity magnetic field for imaging and spectroscopy.
	b. Auto shim should be available to shim the magnet with patient in position
3	**GRADIENT SYSTEM**
	a. Actively shielded Gradient system
	b. The gradient should be actively shielded with each axis having independently a slew rate of at least 200 T/m/s and a peak amplitude of 44mT/m.
	c. The system should have efficient and adequate Eddy current compensation
	d. Effective cooling system for gradient coil and power supply
4	**RF SYSTEM**
	a. A fully digital RF system capable of transmitting power of at least 15kw.
	b. It should also have at least 32 independent RF receiver channels with each having bandwidth of 1 MHz or more along with necessary hardware to support quadrature ICP array/Matrix coils.

	c. It should support Parallel acquisition techniques with a factor of up to 2 in 2D.
	d. Should allow remote selection of coils and / or coil elements.
5	**Patient Table**
a	The table should be fully motorized, MRI Compatible computer controlled table movement in vertical and horizontal directions Position accuracy should be +/- 1.0 C mm or better.
b	Should be able to take at least 140 kg load.
c	The table should have facility for manual traction in case of emergency.
d	Cushions and other patient comfort accessories. All parts of the table should be protected from liquid spill
e	The table should have patient hand-held alarm system.
f	The table should deliver the protocols for automatic bolus chasing in peripheral angio with automatic table movement.
6	**COMPUTER SYSTEM /IMAGE PROCESSOR / OPERATOR CONSOLE**
	a. The main Host computer should have a 19 inches or more high resolution LCD TFT color monitor with minimum 2MP matrix display
	b. The system should have image storage capacity of at least 2,00,000 images in 256x256 matrix.
	c. The main console should have facility for music system for patient in the magnet room. The system should have DVD / CD / Flash drive archiving facility. Supply 500 DVD along with the system.
	d. Two way intercom system for patient communication.
	e.Latest Branded computer with minimum with i5 & 8GB RAM. included with 21" or more TFT/LCD monitor
	f. MRI System should be enabled and networked to RIS/HIS/PACS
7	**MEASUREMENT SYSTEM**
	a. Largest Field of View should be at least 45 cm in all three axis.
	b. The measurement matrix should be from 128x128 to 1024x1024.
	c. Minimum 2D slice thickness mm should be equal to or less than 0.5
	d. Minimum 3D slice thickness mm should be equal to or less than 0.1
8	**COIL SYSTEM**
a	The main body coil integrated to the magnet must be Quadrature / CP. In addition to this following coils should be quoted. Separate coil should be provided with respect toeach application mentioned below. There will be no overlap of a single coil on multiple application. Each coil would be supplied with its individual connector. The overlap of the connector with the coils is also not permissible.
b	**DELETED**
c	Neuro-vascular Coil with 16 or more channels or Head / Neck Coil , capable of high resolution neuro-vascular imaging
d	**DELETED**
e	Spine Array/Matrix Coils with atleast 32 channels for thoracic and lumbar spine imaging.
f	Body Array/Matrix coil with 18 – 32 channels with at least 38 cm Z- axis coverage for imaging of abdomen, angiograms and heart.
g	**DELETED**
h	**Dedicated 32 channel Peripheral Angio Coil or 32 channel whole body coil with coverage of minimum 80 cm with max combination of 2 coils**
i	**Bilateral Breast Coil with at least 16 channels.**

j	**SHOULDER coils** **a. Dedicated Shoulder coil – Multi channel - 1 No** **b. Flex coils – 2nos. (One large and one small)**
k	Dedicated Knee Coil with atleast 15 channels.
l	High resolution foot/ ankle coil – 8 channels or more
	The system should continuously monitor the RF coils used during scanning to detect failure modes. RF coils should not require either set up time or coil tuning; Multi coil connection for up to 2 or more coils simultaneous scanning without patient repositioning i.e. like 4GTIM/ GEM/D stream coil combination should be quoted as standard.
	Suitable Coil Storage Cart should be supplied for keeping the all supplied coils.
9	**APPLICATION SEQUENCES**
	a. The system should have basic sequences package with Spin Echo, InversionRecovery, Turbo Spin Echo with high turbo factor of 256 or more, Gradient Echo with ETL of 255 or more, FLAIR.
	b. Single slice, multiple single slice, multiple slice, multiple stacks, radial stacks and 3D acquisitions for all applications.
	c. Single and Multi shot EPI imaging techniques with ETL factor of 255 or more
	d. Fat suppression for high quality images both STIR and SPIR.
	e. The system should acquire motion artifact free images in T2 studies of brain in restless patients (Propeller, Multivane, Blade etc)
	f. Dynamic study for pre and post contrast scans and time intensity studies
	g. MR angio Imaging: Should have 2D/3D TOF, 2D/3D PC , MTS and TONE, CE-MRA, Facilities for Accelerated time resolved vascular imaging with applications like Treats/Tracks/Tricks sequences.
	h. Fat and water excitation package. Diffusion Weighted Imaging, with at least b value of 5000 or more.
	i. Bolus chasing with automatic and manual triggering from fluro mode to 3D acquisition mode.with moving table facility.
	j. Non contrast enhanced peripheral angiography for arterial flow with Native/Trance/Inhance sequences
	k. Whole body screening imaging studies for metastasis
	l. High resolution Abdominal and Liver imaging in breathold and free breathing modes with respirator triggered volume acquisitions
	m. The system should have basic and advanced MRCP packages including free breathing and 3D techniques.
	n. The system should have facility for flow quantification of CSF, vessel flow and hepatobiliary system.
	o. The system should have the Hydrogen, Single Voxel spectroscopy, Multivoxel,Multislice & Multiangle 2D, 3D Spectroscopy and Chemical shift imaging in 2D/3D. The complete processing/post-processing software including color metabolite maps should be available on main console. Complete prostate spectroscopy hardware and applications should be provided.

	p. Advanced Cardiac Applications: VCG gating, Morphology/wall motion; Cine perfusion imaging; Myocardial viability imaging; Arrhythmia rejection techniques, Advanced Cardiac Ventricular Measurement Analysis; Cine Cardiac Tagging Techniques; Coronary artery techniques; real time interactive imaging, 2D/3D fast field echo/balanced/steady state techniques and evaluation package on workstation
	q. Advanced Breast imaging Package.
	r. Perfusion imaging of brain (both contrast and T1 perfusion)
	Iron quantification software for liver heart, etc
	T1 and T2 relaxation values
	s. Susceptibility weighted imaging (i.e.SWI) /FMRI / Venous BOLD imaging.
	t. Multi Direction DWI and DTI with minimum of 32 directions(Complete package including quantification and tractography software). The post processing software should be able to quantify the FA, ADC, number of Fibres through a ROI. The Fibre depiction should be editable as per the angular and FA threshold.
	u. High resolution imaging for inner ear
8	**Workstation**
1	**One server with 2 node with concurrent licenses to be supplied with the system.** **Licenses: Two Concurrent license here implies the capability to process all the loaded software to be accessible and usable on all the systems simultaneously without any processing delay. The software should also include a reputed antivirus software of a perpetual type or renewed by the supplier.** **Hardware: Node: The vendor has to supply the hardware in the form of CPU and Medical grade monitor 18" or more of 2MP resolution.** **Hardware Server: The server (single/dual configuration) should have image storage capacity of at least 4 Tera bytes, minimum 20,000 concurrent slice processing power and at least 64GB RAM. The server hardware to be included with 21" or more TFT/LCD monitor with dual processor. DICOM 3.0 compatibility and interfacing with other modalities must be possible. The workstation shall have the resolution, software and all functionality of a stand-alone workstation**
2	All necessary software including post-processing software for all offered applications including evaluation for fMRI, perfusion (T1 perfusion and T2* perfusion), diffusion, DTI with fibre tracking, cardiac evaluation, and other associated post processing like MIP, MPR, surface reconstruction should be provided.
	The workstation should have the following features: **a. Cardiac perfusion analysis, quantitative T1 mapping with colour metabolite mapping, quantification of the CSF flow data.**
	b. Image Fusion software should be provided for Inter-modality and Intra-modality fusion.
	c. Software for vascular properties like IAUC, KEP as standard.
	d. DSA images should be viewable in Subtraction mode.

	e. Necessary and adequate hardware and software for sending and receiving the patient data (text + images). Printing of films should be possible from both main console and workstation.
	f. Workstation should also be able to function independent of the main console. Post processing of the MRS data including for CSI with paramagnetic metabolic mapping
	g. Capability to calculate colour display of real MTT, real CBV, and real CBF
	h. Compatibility with data from other MRI system for post processing.
	i. Output in the form of jpeg, avi / equivalent formats should be possible.
	Cardiac Package: two licenses: The workstation should have display of Cardiac cine images in movie mode with rapid avi creation and should have comprehensive cardiac post processing software including for coronary MRA with regular free updates in future. Calculation of ventricular area and volume, stroke volume, ejection fraction and relative ejection fraction, Time volume diagram generation, filling rates and myocardial wall motion, Graphic display of output calculation of flow and velocity parameter with colour coded display of velocity parameters. Diffusion tensor Imaging, 3D myocardial tagging should be possible.
11	**SAFETY FEATURES**
	The System should have following safety features
	a. The magnet system should include an Emergency Ramp Down unit (ERDU) for fast reduction of the magnetic field with Ramp Down time below 3 minutes
	b. The magnet should have quench bands that contain the fringe fields to a specified value in the event of a magnet quench
	c. Real time SAR calculation should be performed by software to ensure that RF power levels comply with regulatory guidelines and are displayed on each image
	d. The system shall have manual override of the motor drive for quick removal of the patients from the magnet bore
	e. Temperature sensor (built in) for magnet refrigeration efficiency must be provided.
	f. A CCTV system with colour LCD display to observe the patient should be provided:
12	**DOCUMENTATION**
	a. DICOM compatible Dry Chemistry laser camera with integrated processor for filming from main console & workstation.
	b. Printing on films of 14" x 17",11" x 14" and 10" x 8" sizes in a resolution of 500 or more dpi. It should be possible to connect other imaging modalities to the printer. 500 no.s of each-size films to be provided.
13	**UPS**
	a. The system should be provided with UPS system for the complete system with at least 30 minute back up.
14	**SUITABLE RF ENCLOSURE**

	RF Cabin: The system should be supplied with the imported RF cabin with RF room shielding, RF Door, RF window, and interiors for the same should be carried out suitably.
16	**ACCESSORIES**
	1. Storage box for all coils
	2. (i) MRI Compatible Dual Syringe Pressure injector : Independent dual-Syringe Pressure injector with following Features; Non-ferrous, automatic syringe size detection, performs single and dual phase contrast injections, provides Saline flush delivery and allows timed contrast delivery Must be compatible with 5, 7.5 &10ml pre-filled contrast syringes and 50 ml syringes for both saline & contrast (20 Nos of 50 ml Syringes with 100 nos. of tube connectors should be provided) Must be able to observe progress of injection and view injection result (ii) (Optional) - MRI Compatible Dual Syringeless Pressure injectors with pump hose : Independent Dual Syringeless Pressure injector with following Features; **5000 gauss** Compliant, Non-ferrous, performs single and dual phase contrast injections, provides Saline flush delivery and allows timed contrast delivery. Must be able to observe progress of injection and view injection result. 100 nos. of tube connectors should be provided
	3. MRI Compatible ECG electrodes (100 no.s Disposable Electrodes for MRI Image gating)
	4. MRI Compatible Anaesthesia Machine with integrated Ventilator, 2 vaporiser, circle absorber
	a) Capable of ventilating adult, pediatric and neonates.
	b) Soft ware for ventilation should support Volume control, Pressure control and Pressure support modes.
	c) Should have oxygen, nitrous oxide and air flow meters
	d) Isoflurane and sevoflurane vaporisers
	e) All safety alarms
	f) All consumables required for Adult-10Set, Pediatrics-3Set, Neonates -02Set
	5. One MRI compatible Multiparmeter Vital Signs Patient Monitor of 5000 Gauss Compliance in MRI Room and One Slave monitor in console room with following modules provision to monitor the following
	a. Heart rate
	b. ECG
	c. NIBP – Size of Cuffs (adult & pediatric neonatal)
	d. Respiration (Capnograph)
	e. Deleted
	f. Oxygen saturation – Pulse oximeter with adult, pediatric probe, and neonatal probes - 2 sets (with the spare probes), Should have plethysmograph perfusion factor.
	g. ETCO2 and ETAA (end tidal anesthetic agents)
	h. Temperature (adult and pediatric)
	i) All consumables required for Adult-10Set, Pediatrics-3Set, Neonates -02Set
	7. MRI compatible syringe pump – 2 Nos

	8. Arrangement of Gas lines (complying with the best in quality and safety as per the existing international norms) in recovery room and magnet room. Any problem / maintainence will be a part of the complete warranty and CMC and hence these works should be undertaken accordingly. – MRI compatible high pressure gas outlet for :
	a. Oxygen
	b. Air
	c. Nitrous Oxide with MRI compatible indexed system.
	d. Vacuum suction
	9. MRI Compatible 1 set of Laryngoscope :4 sizes blades- Neonatal, paediatrics, adult, extra
	10. MRI compatible Magill forceps : Adult & paediatric size- Two each.
	11. Stylet for endotracheal tube : Adult, paediatric size- Three each
	12. MRI compatible Clamps 2 Nos : Either towel clip or artery forceps.
	13. MRI Compatible two IV stands.
	14. Two non-magnetic patient transfer trolleys should be provided
	15. Two Anaesthesia bed/trolley for recovery room
	18. Metal detectors:, **i. Hand held metal detector- 02 nos.** **ii. Walk through Metal detector - 01 no** **iii. Walk through Metal detector with multiple sensor and multiple location LED (Zone III type) - 01 no (Optional)**
	19. Phantoms to be provided for regular QA studies.
	20. Complete manuals and other necessary documentation's should be provided.
	21. MRI compatible Suction Apparatus - 2 nos
17	**TRAINING**
	Qualified personnel nominated by the deptt, should be given application training by the vendor in India for 2 weeks
18	**STANDARD AND SAFETY**
22	**SITE MODIFICATION WORK- 1.5 T MRI**
	a. The system should be installed and handed over in working condition with all necessary electrical, air conditioning and civil work undertaken by the vendor in consultation with the user dept.
	b. All necessary interconnecting interfaces, cable, modules, and other hardware and software to fully integrate the system for full operational status.
	The Scope of Work - Site Modification Work - MRI **The scope of work includes complete Civil work, Electrical, Plumbing, Furnishing, Air-conditioning and Fire fighting for the construction of 1.5 T MRI .**
	a. The MRI should be sited in such a manner; in order to minimise the effect of fringe magnetic field on surrounding areas. The areas lying within 5 Gauss line should be clearly demarcated and cordoned off with adequate warning.
	b. Care should be taken to provide easy negotiation of the patient stretchers/ trolleys through corridors and doors.
	c. RF shielding for doors, walls, glass viewer etc.

	d. Furniture like desk, chairs, shelves etc.
	e. Patient stretcher and other furniture/ accessory to make the scan centre functional.
	The cost of Site Modification Work for the area of 1500sq.ft and Air-conditioning of Tonnage 20 TR will be considered for Ranking / Evaluation purpose.
	Moreover Bidders will have to quote the Unit Rates of the following components of Site Modification work and detailed BOQ should be mentioned.
	a. Civil works (in units like sq.m / cubic m , kg etc)
	b. Electrical work (in unit s like per metre price , unit price for panel , isolation etc)
	c. Public health (plumbing and sanitary fittings like per metre of pipe, number of points etc.)
	d. Air Conditioning (HVAC)-rate of tonnage, type of false ceiling and sq.m rate etc
	e. Interior Furnishing & Furniture
	f. Miscellaneous
	Scope of work for Site Modification MRI unit works:- The supplier should inspect the proposed site and submit all the detailed structural and architectural drawings and BOQ for the proposed MRI Scan Centres along with technical bid of the tender. The MRI SCAN CENTRE shall consist of the following rooms:
	a. MRI Room
	b. Console room
	c. Equipment room
	d. Patient preparation room (two components, - one for the induction of patients undergoing MRI under anaesthesia and other room as recovery)
	f. Patient waiting area
	g. Radiologist room
	The actual area of Site Modification works done will be considered for payment, based on the unit rates and site measurements
	Civil work Any ab initio new construction or demolition of existing structure/walls etc and reconstruction is unambiguously included in the Site Modification scope of work. This includes, but is not limited to expanding the area of MRI gantry room so as to make it compliant for installation of a 3T strength magnet.
	a) Civil construction work including construction of brick wall, plastering, flooring as per the approved plan and equipment layout plan.
	b) Concrete bed at MRI equipment area.
	c) Platform for unloading and shifting the MRI should be provided if necessary.
	d) Platform for Chiller unit would be provided. Fencing and weather protection facility should be provided for the Chiller unit.
	e) Cable tray, trench & channel – necessary trenches, cable tray and channels at required location would be provided.

	f) All the construction work to be done as per the final plan approved by the purchaser.
	g) Active and passive room shielding for magnetic, fringe field should be provided as per the requirement of the equipment.
	h) The entire complex will be made rodent/pest proof.
	a) Flooring **Added Para: Anti static Vinyl flooring within the Magnet room** Providing and laying approved quality , colour, design and shade fully homogeneous 600 x 600 mm(thickness to be specified by the manufacturer) vitrified tile flooring (Marbonite or Granamite, confirming to IS code 15622 with water absorption less than 0.08%) flooring in pattern as detailed in drawing or as directed by the EIC and grouted with matching colour approved quality readymade grout, curing, cleaning etc to required line level etc. all complete at all leads, lifts and heights to the entire satisfaction of the EIC. Providing and fixing 2-3mm thick POP protection over polythene covering sheet to flooring areas till handed over and cleaning, etc all complete as per drawings & specification and as directed by EIC with 100mm tile skirting to match in MRI room , console room , equipment room , patient preparation room, reporting room , patient waiting area and radiologist room. Note: Mode of measurement (Finished surface area of the tiles shall be measured and paid. Rate shall be inclusive of providing and laying levelling course, PVC spacers, providing and applying epoxy grout and no additional payment shall be made
	50 mm thick cement concrete flooring at all heights and locations including scaffolding , preparing the surfaces , neat cement finished to correct line or as required to receive architectural finish , level and plumb , curing wherever required complete as per requirements and drawings , with Vinyl flooring in MRI equipment / UPS room.
b)	**Painting**
	Two coats Plastic Emulsion Paint over 2 coats of wall putty including primer in patient preparation area, Lobby area, console room, MRI equipment room etc. Pre laminated particleboard wall panelling in MRI examination room.
c)	**False Ceiling**
	Acoustical tile for ceiling with light weight insulating material of high quality supported on grid or finished seamless with support above ceiling. Finished with white paint or powder coated with white paint, if metallic. Ceiling height to suit the equipment mount and clearances.
d)	**Plumbing work**
	I. All water pipes and fittings shall be of high density polythene of approved and standard make. The gratings shall be brass chrome plated. All plumbing accessories should be of standard make.
	II. Copper pipes to be used for plumbing the Chiller to the MRI
	Note:
1	**Deleted**

2	All sanitary wares & CP brass fitting & fixtures shall be of first quality with ISI mark (unless otherwise specified) and shall be of the make as per the latest approved list of materials as per list of approved make/model, if any. They shall be got approved by the Engineer-in-charge before incorporating in the work
3	All the items include testing after completion of the work. Concealed/underground GI pipe line is to be wrapped with hessian cloth and painted with two coats of anticorrosive paint. Disposing off: The surplus excavated materials by mechanical transport lead up to 2KM to the nearby dumping pits/dumping areas within institute campus identified by Engineer in charge, including all lifts, loading, unloading, stacking etc. complete as per specifications & as directed by the EIC.
e)	**Electric work**
	The supplier shall be required to specify the total load requirements for the MRI scan centre including the load of air conditioning , room lighting and for the accessories if any. The supply line will be provided by the institute up to one point within the MRI Scan centre area. The distribution panel shall be provided by the vendor. Few lights in each room shall be connected to the UPS to provide emergency lighting. The electrical work shall include the following
	a. Wiring – All interior electrical wiring- with main distribution panel board, necessary MCBs, DB, joint box, switch box etc. the wires shall be of copper of different capacity as per the load and should be renowned make as listed below.
	b. Switches light and power points should be of modular type and of standard make as listed below.
	c. General lights – LED light fittings with 500 Lux Illumination
	d. MRI compatible lights for MRI examination room. The bulbs used within the RF cage should be easy replaceable and locally available.
	e. All wires used must be FRLS (Fire Retardant with low smoke) type only
f)	**AIR CONDITIONING:**
	i. Total capacity of the Air-Conditioning (duct-able + split) for the entire MRI scan centre area should be at least 20 TR.(incl. standby airconditioning). However, if the installed system requires more capacity, it will be the responsibility of the supplier.
	ii. Ductable package air conditioners and split AC units may be used according to room requirement and suitability. Humidity control should be effective to eliminate moisture condensation on equipment surface. . The Air conditioning should be designed with standby provision to function 24 hours a day.a)
	iii. The outdoor units of AC should have grill coverings to prevent theft and damage.
	iv. Ventilation is required in toilet.
g)	**Environment specifications:**

	Relative Humidity range: To be maintained between 60% and 80% in all areas except equipment room which shall be as per requirement of the equipment.
	ii. Temperature ranges: 22 ± 2° C in all areas except equipment room which shall be as per requirement of the equipment.
	iii. Air conditioning load: The heat load calculations and maintaining the desired temperature and humidity shall be the responsibility of the bidder
h)	**Furniture:**
	i. Revolving chairs height adjustable, medium-back with hand-rest . – 6 NO.S
	ii. Chairs for patient waiting area – Three seater (chrome plated). - 10 NO.S
	iii. Cupboard with laminate door shutters for storage of spare parts and accessories and records as per requirement. – 3 NO.S
	iv. Drug trolleys for patient preparation area.- 1 NO.
	v. Patient trolley with rubber foam mattress to be kept in the patient preparation room.
	vi. Tables for Workstation nodes- 2 NO.S
	vii. Changing rooms should have change lockers and dressing table.
	viii. Dustbins (plastic with lid) : 10 no.s.
	ix. All the rooms in the complex will be signposted. Sun film & ventilation blinds / curtain will be put up in all windows.
	a. All furniture items should be of standard make as mentioned in the table below.
i)	**Miscellaneous:**
	1 Reporting room should have LED X-ray Film viewer with adjustable brightness; capable of holding 3 films of 14"x17" size. – 2 no.s
	2 Cabling of Network (LAN) connectivity for camera system, console system, workstation and computers etc
	3 Broadband connection: for REMOTE SERVICE of MRI system.
	4 Dry chemical power type fire extinguisher of 5kgs capacity, with initial filling in brand new cylinder with power coated finish, fitted with Gun metal union, high pressure CO2 gas cartridge, discharge hose, wall mounting bracket etc. complete, confirming t IS:2171 of approved make & complete as directed by EIC.
	LIST OF ITEMS AND SUGGESTED MANUFACTURERS.
SL NO	**ITEMS** **PREFERRED MAKES**
A	**FLOORING VITRIFIED TILES** -Somany, Kajaria , H&R Johnson, RAK India
B	**PAINT** - Dulux, Asian Paints , Nerolac
C	**PLUMBING** - Kohler, Jaguar , Grohe , Roca
D	**SANITARY ITEMS** - CERA, Hindware, Parryware
E	**ELECTRICAL**
1	**CABLES** - Finolex, Havells ,V-Guard

2	**SWITCHES**	- Legrand, L&T, Crabtree , Roma
3	**DISTRIBUTION BOX , MCB**	- Legrand, L&T, Siemens, Havels
4	**LIGHT FITTINGS**	- Philips / Crompton / Wipro/syska
F	**AIR CONDINTIONING**	- Daikin, Hitachi, Blue Star, Voltas,
G	**FURNITURE** Featherlite,Geeken	- Hermen Miller , Godrej ,

S.NO	BILL OF QUANTITY ITEM
1	Whole body 1.5 Tesla Magnetic Resonance Imaging system - 32 channels RF system ; as specified
2	System Body Coil - Quadrature
3	Neuro-vascular Coil with 16 or more channels OR Head / Neck neuro-vascular imaging Coil
4	Spine Array/Matrix Coils with atleast 32 channels
5	Body Array/Matrix coil with 18 – 32 channels
6	**Dedicated 32 channel Peripheral Anglo Coil or 32 channel whole body coil with coverage of minimum 80 cm with max combination of 2 coils - 1 no**
7	Bilateral Breast Coil with **at least 16 channels**
8	**Multi channel (minimum 8 channel) flex loop or rigid type - Large FOV**
9	**Multi channel (minimum 8 channel) flex loop or rigid type - SMALL FOV**
10	**Shoulder coil: Dedicated Shoulder coil – Multi channel**
11	Dedicated Knee Coil with atleast 12 channels.
12	High resolution foot / ankle coil – minimum 8 channel
13	Coil Storage Cart
14	Server : Thin-client server as per specification
15	Licenses: Concurrent licenses for Server.
16	Node Hardware: CPU and Medical grade monitor (18" or more; 2 megapixels or more resolution).
17	Antivirus software of reputed make (perpetual type or license to be renewed by the supplier).
18	Cardiac Package - License
19	**Deleted**
	ACCESSORIES
1	Storage box for all coils
2	Dual Syringe Pressure injector
3	Dual Syringe Pressure injector syringes
4	Dual Syringe Pressure injector syringe connector
5	MRI Compatible ECG **electrodes (disposable)**
6	MRI Compatible Anaesthesia Machine with integrated Ventilator, 2 vaporiser, circle absorber
7	**MRI Compatible Multiparmeter Vital Signs Patient Monitor of 5000 Gauss Compliance & Slave monitor**
8	**MRI compatible syringe pump**
9	MRI Compatible sets of Laryngoscope : 4 sizes blades- Neonatal, paediatrics, adult, extra large

10	MRI compatible Magill forceps : Adult size-
11	MRI compatible Magill forceps : Paediatric size-
12	Stylet for endotracheal tube : Adult size
13	Stylet for endotracheal tube : Paediatric size
14	MRI compatible Clamps : Either towel clip or artery forceps.
15	MRI Compatible IV stands
16	MRI compatible suction apparatus
17	Non-magnetic patient transfer trolleys
18	Metal detectors : Handheld
19	Metal detector: Walk-through
20	Phantoms to be provided for regular QA studies.
21	**MRI Compatible Dual Syringeless Pressure injectors (Optional)**
22	**Tube connectors for Syringeless Pressure injector (Optional)**
23	**Walk through Metal detector with multiple sensor and multiple location LED (Zone III type) - (Optional)**
24	**Dry Chemistry laser camera as specified**
	Components of Site Modification Work:
1	Civil works
2	Electrical work
3	Public health (plumbing and sanitary fittings).
4	Air Conditioning
	Furniture:
1	Revolving chairs height adjustable, medium-back with hand-rest
2	Chairs for patient waiting area – Three seater (chrome plated). -
3	Cupboard with laminate door shutters
4	Drug trolleys for patient preparation area.
5	Patient trolley with rubber foam mattress
6	Tables for Workstation nodes.
7	Changing rooms (with change lockers and dressing table).
8	Dustbins (plastic with lid) to be provided as required.
9	Room Signage
10	Venetian Blinds
	Miscellaneous:
1	LED X-ray Film viewer with adjustable brightness; capable of holding 3 films of 14"x17" size.
2	Cabling of Network (LAN) connectivity for camera system, console system, workstation and computers etc
3	Dry chemical powder type fire extinguisher of 5kgs capacity

Digital X-Ray 1000 mA			
SN	Technical Specification		
	High Frequency X-Ray Unit for general radiography with digital flat panel technology. The system should be capable of both erect and supine radiological examinations. The unit should be completely integrated with the following specifications. All software updates should be provided in warranty & CMC period.		
	Any two components out of three (X-Ray tube, X-ray Generator and Flat panel detectors) should be from the same manufacturer of the main (Complete) system.		
1	**The unit should comprise of the following:**		
a	Two no.s Flat Panel Detectors(Built-in), one for Bucky Table and one for Vertical stand		
b	Generator		
c	X-Ray Tube and Collimator		
d	Ceiling suspended 3D Column Stand		
2	**Flat Panel Detector:**		
a	Flat Panel Detector size of at least 40 x 40 cm or more		
b	Detector Panel should be made of amorphous Silicon with CsI		
c	Image matrix size at least 2000 x 2000 or more		
d	Minimum pixel should be 200 micron or less		
e	Grey scale of 12 bit.		
f	A/D of 14 bit or better.		
g	Tube assembly movement to be automatically synchronized with the detector movement in **vertical direction**		
h	Preview time after exposure 7 sec or less		
i	Image processing time should not be more than 9 sec.		
j	DQE at **0lp/mm or 0.5lp/mm** should be at least 65%		
3	**Generator**		
a	X-ray generator should be of microprocessor controlled high frequency (mention the frequency) type with latest technology having constant output with low ripple frequency.		
b	Output 80 KW or more.		
c	KVP range 40 kV - 150 kV with 1 kV steps.		
d	**Deleted**		
e	KV/MA output specifications.		
	Deleted		
	800 mA at 100 kv.		
f	**Minimum exposure time should be 2 ms or less.**		
g	It should have automatic exposure control (AEC) device		
h	It should have digital display of KVP and mAs.		
i	Anatomical programming radiography should be possible		
j	It should have over loading protection		
4	**X-Ray Tube**		
a	The X-Ray Tube should be rotating anode high speed (8000 rpm or more) compatible with the generator and must have dual focus.		
b	Focal spots of the following sizes:		
	Large Focus: 1.3mm or less		
	Small Focus: 0.6mm or less		
c	X-ray tube loading should be at least 30KW for small focus and at least 80KW for large focus.		
d	X-ray Tube with Anode heat storage capacity of 300kHU or more		
e	Tube protection against overload		
f	Target angle should be at least 12 deg		
g	A high speed rotor accelerator (starter).		
h	Please specify tube rotation at vertical axis and horizontal axis.		
5	**Ceiling suspension**		
a	Ceiling suspended 3D Column stand with facility of automatic positioning and Synchronization		

b	Movement in all direction should be easily possible		
c	It should have auto-tracking and auto-positions functions		
d	**Monitoring of all the position data on colour touch screen for system control (kV, mAs, SID, tube angle)**		
e	SID (Source to Image Distance) in vertical positions150 cm or more, in horizontal position 180 cm or more.		
6	**X-Ray Table**		
a	Free floating Carbon fibre or equivalent table top table with low attenuation.		
b	Anti collision control system.		
c	Table should support patient weight of 200 kg. or more.		
d	Auto-tracking capability without mechanical link.		
7	**Vertical Bucky stand (wall Stand)**		
a	Motorized, counter balanced adjustable height vertical Bucky for the digital flat panel detector		
b	Detector movement should be synchronized (auto-tracking) with movement of X-Ray Tube		
c	Bucky should have a grid ratio 10:1 or more.		
8	**Filter & Collimator**		
a	Inherent filtration of at least 1.00mm Al.		
b	**Square collimation: motorized, should be controllable by organ programming.**		
c	Full field light localizer:		
d	Rotation of +/- 45 deg or more.		
e	**Display of collimation, filter & SID.**		
9	**Operating (Acquisition) Station**		
a	Should have a high resolution TFT / LCD Monitor of minimum 17 inch size or more fully flat with minimum 1024 x 1024 or more display matrix and anti reflective front screen		
b	Please specify image matrix size.		
c	Operating console should have a facility for patient identity entry, viewing and processing images, documentation etc.		
d	Preview image should be ready in minimum time.		
e	System should have auto protocol select		
f	**System should have latest processor with 4GB or more RAM and total storage capacity of atleast 2TB (internal and /or external)**		
g	**Added Para:** **Automatic stitching should be available.**		
10	**Image viewing, post processing, reporting and documentation station**		
a	It should have latest operating system.		
b	19" or more LCD/LED high quality reputed international make medical grade monitor of minimum 2MP resolution must be provided.		
c	Image display should be of high resolution.		
d	High luminance display for diagnostic image viewing.		
e	Post-acquisition image processing, viewing, reprocessing, hard copy documentation and onwards transmission should be possible.		
f	Image processing functions like rotate, mirroring, zoom, move, windowing filter should be possible.		
g	Should be connected to Dry chemistry camera for documentation. Multi format printing should be possible with user selectable options.		
h	It should have CD /DVD writing facility.		
11	**Image storage and Transmission**		
	a. Hard disk storage capacity should be of 10,000 or more		
	b. The system should support storage of images on compact discs/DVD		
	c. The system should be DICOM 3.0 (or higher version) ready (like send, receive, print, record on CD/ DVD, acknowledge etc) for connectivity to any network computed/PG-etc in DICOM format.		
	d. Easy integration and networking should be possible with any other existing future networking including other modalities HIS, RIS & PACS at no extra cost.		

12	DAP: Automatic collimator must be mounted on X-ray tube and collimator must have an integrated dose area product (DAP) meter. Output of DAP meter should be visible in console.		
13	**Accessories**		
	a. Dry Chemistry Camera. Should have 500 DPI and should print at least 3 sizes of films: 8x10, 14x17, 10x12 or 11x14 inches. 200 films of each size to be supplied.		
	b. Online UPS along with batteries of appropriate rating to give 30min. back up to operate the complete system including X-Ray machine and Imager and general lighting in exam room and console room		
	c. Zero lead aprons(0.25mm Lead equivalent) with hangers- 4 Nos.		
	d. Stand for lead aprons-1		
14	**Approvals**		
	The equipment should have US FDA or European CE with four digit notified body number certificate and certificate to be submitted.		
	The system should be AERB type approved and the copy of E-LORA Listing should be submitted along with bid.		
	Regular QA according to AERB norms will be responsibility of bidder during warranty and CMC period.		
	Site Modification Scope of Work – DR		
	1. The scope of work includes complete Civil work, Electrical, Plumbing, Furnishing, Air-conditioning and Fire fighting for the construction of DR Centre.		
	2. While preparing the plan, the following aspects have to be addressed.		
	a. Care should be taken to provide easy negotiation of the patient stretchers/ trolleys through corridors and doors.		
	b. Radiation shielding for doors, walls, windows etc.		
	c. Furniture like desk, chairs, shelves etc.		
	d. Patient stretcher and other furniture/ accessory to make the DR centre functional.		
	3. The cost of site modification work for the area of **1000sq.ft** and Air-conditioning of Tonnage 12 TR will be considered for Ranking / Evaluation purpose.		
	4. Moreover Bidders will have to quote the Unit Rates of the following components of Site Modification work.		
	a)Civil works		
	b)Electrical work		
	c)Public health (plumbing and sanitary fittings).		
	d)Air Conditioning (HVAC)		
	e)Interior Furnishing & Furniture		
	f)Miscellaneous		
	The Site Modification Work - Scope of Work – DR		
	The supplier should inspect the proposed site and submit all the detailed structural and architectural drawings and BOQ for the proposed DR Centres along with technical bid of the tender.		
	The DR CENTRE shall consist of the following rooms:		
	a) DR Room		
	b) Console room		
	c) Equipment room		
	d) Patient preparation room cum change room		
	e) Patient waiting area		
	The actual area of Site Modification Work done will be considered for payment, based on the unit rates and site measurements		
1	**1. Civil work**		
	i. Civil construction work including construction of brick wall if any, plastering, flooring as per the approved plan and equipment layout plan.		
	ii. Concrete bed at DR equipment area.		
	iii. Platform for unloading and shifting the DR should be provided if necessary.		
	iv. Cable tray, trench & channel – necessary trenches, cable tray and channels at required location would be provided.		

	v. All the construction work to be done as per the final plan approved by the Consignee.		
	a. Flooring		
	i. 600 x 600 mm vitrified tiles with 100mm tile skirting to match in console room, lobby and patient preparation areas, Radiologist room etc.		
	ii. 50 mm thick cement concrete flooring with Vinyl flooring in DR equipment / UPS room.		
	b. Painting		
	Two coats Plastic Emulsion Paint over 2 coats of wall putty including primer in patient preparation area, Lobby area, console room, DR room & Equipment room etc.		
	c. False Ceiling		
	Acoustical tile for ceiling with light weight insulating material of high quality supported on grid or finished seamless with support above ceiling. Finished with white paint or powder coated with white paint, if metallic. Ceiling height to suit the equipment mount and clearances.		
2	**Plumbing work**		
	Deleted		
3	**Electrical work**		
	a. The supplier shall be required to specify the total load requirements for the DR centre including the load of air conditioning , room lighting and for the accessories if any.		
	b. The supply line will be provided by the Institute up to one point within the DR centre . The distribution panel shall be provided by the vendor. Few lights in each room shall be connected to the UPS to provide emergency lighting.		
	c. The electrical work shall include the following:		
	i. Wiring – All interior electrical wiring- with main distribution panel board, necessary MCBs, DB, joint box, switch box etc. the wires shall be of copper of different capacity as per the load and should be renowned make as listed below.		
	ii. Switches light and power points should be of modular type and of standard make as listed below.		
	iii.General lights – LED light fitting with 500 Lux illumination		
4	**AIR CONDITIONING:**		
	a. Package air conditioners units and split AC units may be used according to room requirement and suitability. Humidity control should be effective to eliminate moisture condensation on equipment surface. . The Air conditioning should be designed with standby provision to function 24 hours a day.		
	b. The outdoor units of AC should have grill coverings to prevent theft and damage.		
	c. Ventilation is required in toilet.		
5	**Environment specifications:**		
	Relative Humidity range: To be maintained between 60% and 80% in all areas except equipment room which shall be as per requirement of the equipment.		
	Temperature ranges: 22 ± 2° C in all areas except equipment room which shall be as per requirement of the equipment.		
	Air conditioning load: The heat load calculations and maintaining the desired temperature and humidity shall be the responsibility of the bidder.		
6	**Furniture:**		
	a. Revolving chairs height adjustable, medium-back with hand-rest in the Control room, Radiologist room and viewing area. – 4 NO.S		
	b. Chairs for patient waiting area – Three seater (chrome plated). - 10 NO.S		
	c. Cupboard with laminate door shutters for storage of spare parts and accessories and records as per requirement. – 3 NO.S		
	d. Drug trolleys for patient preparation area. – 1 No.		
	e. Patient trolley with rubber foam mattress to be kept in the patient preparation room.		
	f. Name boards for all rooms		
	g. Tables for Workstation - 1 NO.		
	h. Changing rooms should have change lockers and dressing table.		

	i. Dustbins – 10 No's.		
	j. Any other essential furniture item as per requirement.		
	All furniture items should be of standard make as mentioned in the table below.		
7	**Miscellaneous:**		
	a. LED X-ray Film viewer with adjustable brightness; capable of holding 3 films of 14"x17" size. – 3 no.s		
	b. Cabling of Network (LAN) connectivity for camera system, console system, workstation and computers etc.		
	c. Fire extinguisher Dry CO2 type as required for the building safety.		
	LIST OF ITEMS AND SUGGESTED MANUFACTURERS.		
	ITEMS **PREFERRED MAKES**		
A	**FLOORING VITRIFIED TILES** - Somany, Kajaria , H&R Johnson, RAK India		
B	**PAINT** - Dulux, Asian Paints , Nerolac		
C	**PLUMBING** - Kohler, Jaguar , Grohe , Roca		
D	**SANITARY ITEMS** - CERA, Hindware, Parryware		
E	**ELECTRICAL**		
1	**CABLES** - Finolex, Havells ,V-Guard		
2	**SWITCHES** - Legrand, L&T, Crabtree , Roma		
3	**DISTRIBUTION BOX , MCB** - Legrand, L&T, Siemens, Havels		
4	**LIGHT FITTINGS** - Philips / Crompton / Wipro/ Syska		
F	**AIR CONDINTIONING** - Daikin, Hitachi, Blue Star, Voltas,		
G	**FURNITURE** - Hermen Miller , Godre) , Featherlite,Geeken		
	BOQ Digital Radiography System 1000mA (Per Unit)		
Sl. No	**Item Description**	**Quantity**	**UOM**
1	1000 mA X-Ray System with digital flat panel detector as per the Tender Specification (Point 1 to 12)	1	No
3	a. Dry Chemistry Camera as per specification	1	No
4	b. Online UPS as per specification	1	No
5	c. Zero lead aprons with hanger	4	No
6	d. Stand for lead aprons	1	No
	Site Modification Work (1000 sq ft) as per specification		
1	Civil works	1000	sq ft
2	Electrical work	1000	sq ft
3	Public health (plumbing and sanitary fittings).	1000	sq ft
4	Air Conditioning	12	TR
	Furniture:		
1	Revolving chairs height adjustable, medium-back with hand-rest.	4	No
2	Chairs for patient waiting area – Three seater (chrome plated).	10	No
3	Cupboard with laminate door shutters	3	No
4	Drug trolleys for patient preparation area.	1	No
5	Patient trolley with rubber foam mattress	2	No
6	Tables for Workstation and Radiologist .	2	No
7	Changing rooms (with change lockers and dressing table).	1	Set
8	Dustbins	10	No
9	Room Signage	1	LS
10	Venetian Blinds	1	LS
	Miscellaneous:		
1	LED X-ray Film viewer	3	No
2	Cabling of Network (LAN) connectivity for camera system, console system, workstation and computers etc	1	LS
3	Dry chemical power type fire extinguisher of 5kgs capacity	3	No
4	Lead glass **120 x 90cm** for console room - 1 no.	1	No

Mobile X-Ray			
SN	Technical Specification		
	High Frequency mobile X ray machine with output 100 mA or more. The mobile x ray equipment is required to perform x ray studies in emergency and trauma centre and bedside in wards and ICU. The unit should be compact, lightweight and easily transportable. Heavy duty castors should be present. the supplier to coordinate with the user for the proper height of the footprint / base in relation to the patient bed. It should have following specifications. The system should have been quality certified.		
	The unit should be operative on mains voltage from single phase 180-240 V AC with automatic main compensation.		
1	**Generator:**		
i	Power : 4 kW or more		
ii	kVp. Range : 40 – 100 kVp or more		
iii	**Deleted**		
iv	m A range : 10 mA to 100 mA or more		
v	**Exposure Time: 10 ms to 2 sec.**		
2	**The digital display:**		
	kV and mAs parameters, System ON, System OFF, status and fault messages on the kV and mAs area		
3	**X RAY Tube:**		
	Stationary/Rotating Anode tube with focal spot 1.8 X 1.8 mm or better.		
4	**Tube stand:**		
	The tube stand should be fully counterbalanced/Spring Balanced with rotation in all directions.		
5	**Collimator:**		
	Collimator rotation should be +45 to -45 degrees with auto shut off lamp facility.		
6	**Cassette storage box:**		
	The equipment should have cassette storage box for minimum of 4 cassettes.		
7	**Ergonomics:**		
	The unit should have small foot print. The height of the column stand should not be more than 150 cm for easy transportation in the lift etc. and areas with small height doors. The equipment should be light weight, not more than 130 kg.		
8	**Certification:**		
i	System be AERB type approved.		
ii	The Bidder should assist the institution for e-LORA registration formalities.		
iii	Regular QA according to AERB norms will be responsibility of bidder during warranty and CMC period.		
IV	Light Weight Lead Apron -2 Nos (Equivalent to .25 mm lead)		
	BOQ		
Sl.No	**Item Description**	**Qty**	**UOM**
i	Mobile X-Ray Unit	1	No
ii	Light Weight Lead Apron	2	No

Colour Doppler - 2D & 3D			
SN	Technical Specification		
	The equipment must be capable of operating in B, M, Doppler, Colour flow and Power Doppler modes. It must support transducers with linear, sector and convex formats. Further, it must include a full array of measurement and calculation packages. The specific minimum requirements for this equipment are as follow.		
1	**User Interface & Ergonomics**		
1.1	**The system shall support backlight keys or provide an integrated light for ease of use in darkened work areas.**		
1.2	The system shall include at least a 17" LCD monitor to allow for both excellent images viewing as well as providing for workflow and productivity features.		
1.3	The system shall have minimum three active universal probe ports in a convenient, easy to access location to maximize the availability of needed probes.		
2	**Productivity**		
2.1	The system shall offer an extended field-of-view imaging that operates by sweeping a transducer over the anatomy of interest. This mode shall build the extended field-of-view in a real-time manner, showing the image as it builds.		
2.2	System shall have image management features that store images by patient and include the ability to review images from different exam dates.		
2.3	**Deleted**		
2.4	System shall allow for live image and archive images side-by-side or quad display on a single monitor. This display shall allow any type of image – B-Mode, Color, or power Doppler on either side.		
2.5	The system shall display thumbnails on a clipboard while scanning to facilitate exams.		
2.6	**System should be able to reconstruct 3D image using 2D probe**		
3	**Tissue Harmonic imaging with contrast should be available as standard feature.**		
4	**Post-acquisition Data Processing.**		
4.1	**deleted**		
4.2	The system shall provide a display zoom function on frozen images.		
6	**Scanning Parameters**		
6.1	The system shall provide the ability to scan in the compound imaging mode with multiple lines on all linear and convex probes.		
	The system shall provide scan depths from a minimum of 2 cm to a maximum of at least 30 cm.		

	System should have minimum of 17,000 Digital Channels for better resolution.		
6.4	System should have Dynamic Range of atleast 170 Db.		
7	**M-Mode Imaging**		
	The system shall have a facility allowing the M-Mode cursor to be adjustable in any plane and allow for accurate measurements. The M mode shall be available from a CINE loop or live image.		
8	**Spectral Doppler (PW)**		
8.1	Doppler mode shall be available on all probes.		
8.2	The Doppler cursor shall be user-steerable with linear transducers.		
8.3	The system shall provide the user with control to either have Doppler with real time B-Mode, Doppler with periodic B-Mode update or Doppler with frozen B-Mode scanning.		
8.4	The system shall provide stereo audio of the Doppler spectral signal.		
8.5	The system shall provide the user with control during timeline replay to review the spectrum only (i.e., frozen B-Mode) or with the spectrum and B-Mode together and synchronized.		
8.6	There should be no or minimal decrease in the velocity range of the doppler while switching to triplex imaging. This is to enable calculation of stenosis / abnormality when the velocity increases to very high level.		
8.7	The system shall provide the user with the ability to add a spectral peak and spectral mean trace onto the spectrum in both real time or after freezing the image.		
9	**Measurements and Calculations**		
9.1	The system shall provide digital calipers for at least the following measurements:		
a)	Depth & Distance		
b)	Circumference		
c)	Area		
d)	Volume		
e)	Velocity		
f)	Resistive index (RI)		
9.2	All measurements should be possible on frozen images as well as on images recalled from the image archive.		
9.3	The system shall provide a comprehensive set of obstetrical and gynaecologic calculations and vascular calculations with summary reports.		
10	Image Archive and Networking		
10.1	The device should store images onto an integrated DVD-R Multridrive and a USB port storage device.		
10.2	The system shall include at least 100 GB of dedicated hard drive for large local storage capacity,with 20000 image storage capacity or more.		

11	DICOM Connectivity should be a standard feature and Machine should be able to connect with any RIS/HIS		
12	Standalone PC (Windows based) with suitable DICOM viewer, suitable colour inkjet printer with refillable ink tank to be supplied.		
13	**Transducers** (freq tolerance: ± 1 MHz)		
a)	Convex Probe with biopsy attachment. : 2 - 6 MHz		
b)	**Transvaginal / Intracavitary Probe with Biopsy attachment. : 4- 9 MHz**		
c)	**Linear Probe with biopsy attachment. : 5 – 12 MHz**		
d)	**Sector Probe (TCD):2-4MHz**		
e)	Pediatrics micro convex probe **(Optional)**		
14	**Deleted**		
15	Suitable UPS with 30 minute backup for whole system.		
Sl.No	**BOQ**	**Qty**	**UOM**
1	COLOUR DOPPLER SYSTEM , as specified	1	No
2	Convex Probe with biopsy attachment. : 2 - 6 MHz	1	No
3	**3. Transvaginal / Intracavitary Probe with Biopsy attachment. : 4- 9 MHz - 1 no.**	1	No
4	**Linear Probe with biopsy attachment. : 5 – 12 MHz - 1 no**	1	No
5	**Sector Probe (TCD): 2-4MHz - 1 no**	1	No
6	Pediatrics micro convex probe **(Optional)**	1	No
7	Suitable UPS for a 30 minute backup for whole system.	1	No
8	Standalone PC (Windows based) with suitable DICOM viewer	1	No
9	Colour inkjet printer with refillable ink tank	1	No

Portable Colour Doppler	
SN	Technical Specification
	The latest model portable USG Doppler unit should be quoted. This machine should be capable and will be required to function clinically as standalone systems similar to that of a higher end in situations like trauma and high footfall of patients.
1	Fully digital portable ultrasound machine with provision for Doppler examinations.
2	**The unit should be compact, lightweight and portable. Weight should not exceed 7.5kg including battery (excluding cart and accessories).**
3	It should be suitable for abdominal, small parts and vascular applications in adults and paediatric patients. Multiple preloaded as well as user configurable application presets should be available.
4	**Minimum grey scale resolution to be 256**
5	**Scanning depth to be 24 cm or more.**
6	The system to have a dynamic range of 165 decibels or more.
7	The system should support Convex , Linear probes and endocavitary probe.
8	**Transducers** (Frequency tolerance ±1 MHz)
	a. Convex electronic phased array transducer: 2-6 MHz for abdominal imaging.
	b. Linear transducer: 5-12MHz MHz for vascular and small part imaging.
	c. Endocavitary probe (5-9MHz) with 120 deg FOV or more .
9	All transducers should be lightweight digital broadband type transducers
10	The system should have a frame rate of at least 300 frames per second (fps) in B mode.
11	The system should have an ergonomic full alphanumeric soft keys keyboard with easy access scans controls and trackball/track pad. Provision for attaching an external keyboard and mouse should be present.
12	**The System must have integrated high – resolution TFT/LCD/LED of 12" inches or more.**
13	**The system should have cine loop review facility of not less than 20 sec/1000 frames.**
14	**The system should have the facility of digital storage and retrieval of B/W and colour image data on USB and LAN transfer of data should also be present.**
15	**Imaging modes of Real time 2D, Colour Doppler, Pulsed wave Doppler and Power (energy) Doppler, Tissue Harmonic Imaging and spatial compounding**

16	Controls for 2D mode: Total gain, depth, TGC, dynamic range, acoustic power output.
17	Controls for Colour Doppler: PRF, colour gain, position and size of ROI, steering of ROI, colour maps and colour invert.
18	Controls for pulsed Doppler: variable sample volume size from 1 to 5mm or more, steer, PRF, baseline, gain angle correction, spectral invert, duplex on/off.
19	Measurements for 2D mode: Multiple distances, area and volume.
20	Measurements for Doppler modes: Stenosis quantification in area percentage, diameter, PSV, EDV, mean, PI, RI, acceleration time and index. Automatic and manual measurements and display of pulsed Doppler calculations should be possible.
21	**System should have DICOM 3.0**
22	The system should be able to store atleast 5000 images.
23	Unit should function with 200-240 V, 50 Hz AC, 5 amp power outlet.
24	**In built battery backup should be at least 30 min or more.**
	Essential accessories:
25	B&W Thermal Printer
26	suitable carry bag for machine ,Mobile cart with transducer holder, jelly bottle holder and space for printer.
27	50 no.s roll of Thermal Printer Paper should be provided with the unit.
28	Deleted

Sl No	BOQ
1	Portable Ultrasound Scanner, as specified
2	Convex electronic phased array transducer: 2-6 MHz for abdominal imaging.
3	Linear transducer: 5-12MHz MHz for vascular and small part imaging.
4	**Endocavitary probe (5-9MHz) with 120 deg FOV or more - 1 no**
5	B&W Thermal Printer
6	Mobile cart and suitable carry bag for machine
7	Thermal Printer Paper (Rolls)

Computed Radiography Unit with Dry Imager			
SN	**Technical Specification**		
	Computed Radiography must be a state of the art system manufactured by a reputed brand or manufacturer adhering to following specifications. CR system should broadly comprise of following modules/ components:		
	Image recording system (cassettes & reading plates)		
	Image reading system (reader/ digitizer)		
	Identification & CR processing workstation.		
	Dry imager.		
1	**Image recording system (cassettes & imaging plates).**		
	The following sizes of radiography cassettes along with image plates should be supported by the unit. A decent casette holder for storage of casettes should also be supplied.		
	a. 35 cm X 43 cm or 14" X 17": 2 nos.		
	b. 24 cm X 30 cm or 10" X 12": 2.nos.		
	c. 18 cm X 24 cm or 8" X 10": 2 nos.		
	d. Mammography cassette 18 X 24cm: 1 nos.(Optional)		
	e. Mammography cassette 24 X 30cm: 1 nos.(Optional)		
2	**Image reader (CR reader/ digitizer)**		
	a. The CR reader / digitizer should be able to process 60 image plates/hr or more of the largest size cassette		
	b. CR reader / digitizer must be able to handle phosphor image plates. CR reader capable of handling latest Dual side /needle/structured/ columnar image plates will be preferred.		
	c. It should have a resolution of 6 pixels/mm (minimum) for standard resolution cassettes & 10 pixel/mm (minimum) for high resolution cassette reading.		
	d. Digitiser must have a resolution of 20 pixel/mm(minimum) for screening mammography.		
	e. It should have input -output buffer/ stacker that can load at least 4 cassettes at least.		
	f. Gray scale resolution: CR reader / digitizer should have a minimum resolution of 12bits/ pixel for images sent to CR processing station.		
3	**Identification Station & processing server**		

	a. The main console must have 4GB or more RAM, and 1 TB Hard Drive and 19 inch clinical grade monitor. The work station should have RAID configuration Hard Disk and 19" monitor.		
	b. Processing server capable of identification of patient demographics to the acquired images will be preferred, else a separate identification station must be provided.		
	c. The server and /or ID station must be DMWL (DICOM modality worklist) compliant to access patient and study data from HIS or RIS.		
	d. It should provide display of acquired images with greater details of demographics viz. patient/ study listing for easy access		
	e. The server must provide full amount of post processing features viz. geometric corrections, window level algorithms, annotation like markers, predefined text, drawing lines and geometrical shapes, multi-scale image processing, measuring distance and angles, shuttering, histograms, zoom, grey scale reversal, edge enhancement, noise reduction, indication of gray scale saturation level, latitude reduction etc.		
	f. It should facilitate full-fledged DICOM printing and should be able to print multiple formats of patient study.		
	g. Should be able to send DICOM images to DICOM workstation or PACS without loss of information		
	h. Should be equipped with DICOM CD writer for transferring image		
	i. Should be able to store image on external device viz. CD or pen drive etc.		
	j. The system should have a facility to indicate over /under exposure in the preview screen. Kindly specify the image preview time.		
	k. The software must have dedicated paediatric and mammography image processing.		
4	**Dry imager**		
	a. The system must have a dry imager without need of any wet chemistry		
	b. It must be DICOM 3.0 compatible allowing multiple modalities to be connected at a time		
	c. The system must be able to print at least 60 films/ hr of the largest size		
	d. The system must deliver its first film within 80 seconds from the request sent		
	e. The imager must have spatial resolution of 500 dpi minimum		

	f. The system must have contrast resolution of 14 bits/ pixel or more. The system must have at least three online film sizes and should be capable of printing any of the 8" X 10", 10" X 12", 14" X 17" films.		
	g. The imager should support daylight loading of films.		
	h. 500 Nos. Of film of each size should be supplied		
5	Suitable UPS with 15 minutes backup for the whole system		
6	Deleted		
	BOQ	**Qty**	**UOM**
1	CR UNIT, as specified	1	No
2	35 cm X 43 cm or 14" X 17"	2	No
3	24 cm X 30 cm or 10" X 12":	2	No
4	18 cm X 24 cm or 8" X 10":	2	No
5a	**Mammography cassette 18 X 24 cm: 1 nos.(Optional)**	**1**	**No**
5b	**Mammography cassette 24 X 30cm: 1 nos.(Optional)**	**1**	**No**
6	Dry imager	1	No
7	Film 14" X 17"	500	No
8	Film 10" X 12"	500	No
9	Film 8" x 10"	500	No
10	UPS with batteries	1	LS

Digital Mammography System			
SN	Technical Specification		
	General description: Large field of view digital mammography system for general screening, diagnostics and interventional applications.		
	The system should be AERB type approved.		
	Regular QA according to AERB norms will be responsibility of bidder during warranty and CMC period.		
	The system should consist of:		
	1. Large field digital flat panel detector		
	2. Ergonomic examination gantry designed for mammography applications with motorized movements		
	3. Integrated digital acquisition system with user console and flat panel monitor		
	4. Single track dual focus mammography X-ray tube with additional beam filters and automatic collimator		
	5. High frequency generator		
	6. Exposure control system and selectable dose modes		
	7. Radiation shield and a mammography image receptor grid		
	8. Motorized compression device and compression paddles		
	9. Magnification device		
	10. Suitable hardware & software for Stereotactic breast Biopsy		
	TECHNICAL SPECIFICATIONS		
1	**X-Ray Generator**		
	a. High frequency generator type		
	b. 5.0 kW or more generator power		
	c. kV range: 25 to 35 or more in 1 kV steps		
	d. mAs range: 3 to 500		
	e. mA range: up to 100 or more		
	f. Exposure monitoring generator and tube load pre- exposure display of the exposure parameters		
	g. Displayed parameters kV, mAs, target filter, density selection Auto record of the exposure parameters for each mammogram		
2	**X-Ray tube**		
	a. Dual focus x-ray tube with small focal spot: 0.1 mm		
	b. Spot size large focal spot: 0.3 mm		
	c. Rotating Anode		
	d. Anode heat storage capacity >150 kHU or more		
	e. Anode heat dissipation: 40 kHU/min		
	f. Beam or Target filter materials: mention the materials used.		
	g. Tube heat monitoring system / device/ program		
	h. Tube current large focal spot (25-30kV): 100 mA		
	i. Tube current small focal spot (25-30 kV): 40mA		
3	**Gantry assembly**		
	a. Isocentric system		

	b. Motorized rotation and vertical movement		
	c. Dual speed movements		
	d. Rotation angle: +180 to -165 degree		
	e. Distance floor to image receptor:-70 to 140 cm		
	f. Source to image receptor distance (SID) : 62 cm or better		
	g. Wheelchair access		
	h. Face shield		
	i. Compression force display		
	j. Pair of dual foot- pedals		
	k. Automatic decompression after exposure		
	l. magnification stand with dedicated paddles		
	m. Magnification: 1.5 or more		
	n. Motorized compression force: 0 to 190 Newton or more		
	o. Maximum manual compression force: at least 175 N		
	p. Large paddle		
	q. Regular (19 x 23)+/- 2 cm sliding paddle		
	r. Spot compression paddle		
4	**Exposure control**		
	a. Both manual and Auto mode (Automatic Technique selection) Should be available		
	b. Parameters controlled: kV mAs, filter		
5	**Automatic technique selection**		
	a. Parameters: Anode track, filter, kV mAs, and dose should be chosen automatically		
	Deleted		
6	**Collimator**		
	a. Beam filter: 2 Nos. (Mo/Ag/Al) & Rh		
	b. Deleted		
	c. FOV can be modified manually and can also be selected automatically based on the paddle and magnification platform		
7	**Flat panel detector**		
	a. Detector material (Amorphous Selenium or others) and Detector type (Direct or Indirect)		
	b. Detector size:- 24 x30 cm (+/-1cm).		
	c. Pixel size: 100 um or less		
	d. DQE at 0 LP/mm: 60% **OR** **DQE at 5LP/mm : 29%**		
	e. Deleted		
	f. Image depth>=14 bit		
	g. Operating temperature: 20 to 30 degrees Celsius		
8	**Digital acquisition system**		
	a. Local storage capacity:8000 images & more		
	b. Preview image: <16 seconds		
	c. LCD image monitor		
	d. High luminance LCD: up to 500 cd/m2		
	e. Image annotation		
	f. Measurement functions		
	g. Automatic dose (Skin dose and average Glandular Dose) annotation Automatic windowing		

	h. Multi format display		
	i. Zoom and roam		
	j. Image invert		
	k. Print layout for multi format printing		
	l. Integrated CD R/W		
	m. Thickness equalization (image harmonization)		
	n. Fine view (improved conspicuity)		
	o. Integrated quality Assurance program		
	p. Repeat reject analysis		
9	**Connectivity**		
	a. Autosend (Autopush)		
	b. Autoprint		
	c. Autodelete based on storage commitment		
	d. DICOM SEND (storage provide)		
	e. DICOM storage commitment (storage commitment user)		
	f. DICOM Work list (Modality work list user)		
	g. DICOM Query/ Retrieve user		
	fi. DICOM Print (basic grayscale print user)		
	i. Verification service (verification provider)		
	j. DICOM CD		
10	**Printer interface**		
	a. Basic Grayscale print user		
	b. Validated printer list for hardcopy diagnostic		
11	**Grid/ Breast support assembly**		
	a. Grid ratio:5:1		
	b. Removal and installation of the grid/ breast support motorize		
	c. Low attenuation carbon fiber support		
12	**Accessories included**		
	a. Pair of dual foot pedals		
	b. Radiation shield with 0.3 mm Pb equivalent at 49 kV		
	c. Face shield		
	d. Large paddle- 24x31cm (+/-2cm)		
	e. 19x23 cm paddle (+/-2cm)		
	f. Spot sliding compression paddle		
	g. Remote service modem		
	h. Deleted		
	i. User manual and technical documentation		
	j. UPS for power supply & backup of 30 minutes for the entire system		
	k. Dry view camera: 508 DPI or more, with 300 films each (size 18x24cm and 24x30cm)		
	l. LED X-ray Film viewer with adjustable brightness; capable of holding 3 films of 14"x17" size. – 3 no.s		
13	**Display workstation**		
	a. Mammography diagnostic workstation		
	b. Two high contrast and resolution 5 MP LCD B & W monitors (Barco/NEC/Eizo make)		
	c. Multi-modality viewer to integrate with PACS and to view DICOM images from other modalities.		

	d. Customizable having protocols		
	e. Dedicated mammography keypad		
	f. Customizable functions buttons		
	g. Patient list management tool		
	h. User selectable auto contrast modes		
	i. On line storage capacity for > 15000 images		
	j. Deleted		
	k. Image retrieval time to display (4 Views) : <4 seconds		
	l. RAM: minimum 6 GB		
	m. Quadrant glass		
	n. Flip, Rotate, Invert		
	o. Annotations and graphics		
	p. Measurements		
	q. Zoom and roam		
	r. Brightness and contrast		
	s. Print screen		
	t. Contrast enhancement processing		
	u. Internal DVD-ROM drive		
	v. DICOM storage SCU/SCP		
	w. DICOM Query/ Retrieve SCU/SCP		
	x. DICOM Print Storage commitment SCU		
	y. DICOM Print (Color and B&W)		
	z. DICOM Media interchange		
	aa. TCP/IP network layer		
	The Site Modification Work - Scope of Work – MAMMOGRAPHY		
	1. The scope of work includes complete Civil work, Electrical, Plumbing, Furnishing, Air-conditioning and Fire fighting for the construction of Mammography Centre		
	2. While preparing the plan, the following aspects have to be addressed.		
	a. Care should be taken to provide easy negotiation of the patient stretchers/ trolleys through corridors and doors.		
	b. Radiation shielding for doors, walls, windows etc.		
	c. Furniture like desk, chairs, shelves etc.		
	d. Patient stretcher and other furniture/ accessory to make the Mammography centre functional.		
	3. The cost of Site Modification Work for the area of 600sq.ft and Air conditioning of Tonnage 6 TR will be considered for Ranking / Evaluation purpose		
	4. Moreover Bidders will have to quote the Unit Rates of the following components of site modification work work.		
	a) Civil works		
	b) Electrical work		
	c) Air Conditioning (HVAC)		
	d) Interior Furnishing & Furniture		
	e) Miscellaneous		
	Scope of work for Site Modification Mammography system:		
	Deleted		

	The Mammography CENTRE shall consist of the following rooms:		
	a) Mammography Room		
	b) Console room		
	c) Patient preparation room		
	The actual area of site modification work works done will be considered for payment, based on the site measurements.		
1	**Civil work**		
	i. Civil construction work including construction of brick wall if any, plastering, flooring as per the approved plan and equipment layout plan.		
	ii. Concrete bed at Mammography equipment area.		
	iii. Platform for unloading and shifting the Mammography should be provided if necessary.		
	iv. Cable tray, trench & channel – necessary trenches, cable tray and channels at required location would be provided.		
	v. All the construction work to be done as per the final plan approved by the Consignee.		
	a. Flooring		
	600 x 600 mm vitrified tiles with 100mm tile skirting.		
	b. Painting		
	Two coats Plastic Emulsion Paint over 2 coats of wall putty including primer in patient preparation area, Lobby area, console room, Mammographyroom .		
	c. False Ceiling		
	Acoustical tile for ceiling with light weight insulating material of high quality supported on grid or finished seamless with support above ceiling. Finished with white paint or powder coated with white paint, if metallic.Ceiling height to suit the equipment mount and clearances.		
2	**Plumbing work**		
	All water pipes and fittings shall be of high density polythene of approved and standard make. The gratings shall be brass chrome plated. All plumbing accessories should be of standard make.		
3	**Electrical work**		
	a. The supplier shall be required to specify the total load requirements for the Mammography centre including the load of air conditioning , room lighting and for the accessories if any.		
	b. The supply line will be provided by the Institute up to one point within the Mammographycentre . The distribution panel shall be provided by the vendor. Few lights in each room shall be connected to the UPS to provide emergency lighting.		
	c. The electrical work shall include the following:		

	i. Wiring – All interior electrical wiring- with main distribution panel board, necessary MCBs, DB, joint box, switch box etc. the wires shall be of copper of different capacity as per the load and should be renowned make as listed below.		
	ii. Switches light and power points should be of modular type and of standard make as listed below.		
	iii. General lights – LED light with 500 Lux Illumination		
4	**AIR CONDITIONING:**		
	a. Package air conditioners units and split AC units may be used according to room requirement and suitability. Humidity control should be effective to eliminate moisture condensation on equipment surface. The Air conditioning should be designed with standby provision to function 24 hours a day.		
	b. The outdoor units of AC should have grill coverings to prevent theft and damage.		
	c. Ventilation is required in toilet.		
5	**Environment specifications:**		
	Humidity range: Relative humidity 60% and 80% in all areas except equipment room which shall be as per requirement of the equipment.		
	Temperature ranges: 22 ± 2° C in all areas except equipment room which shall be as per requirement of the equipment.		
	Air conditioning load: The heat load calculations and maintaining the desired temperature and humidity shall be the responsibility of the bidder.		
6	**Furniture:**		
	a. Revolving chairs height adjustable, medium-back with hand-rest in the Control room, Radiologist room and viewing area. – 4 NO.S		
	b. Cupboard with laminate door shutters for storage of spare parts and accessories and records as per requirement. – 2 NO.S		
	c. Drug trolleys for patient preparation area. – 1 No.		
	d. Name boards for all rooms		
	e. Tables for Workstation - 1 NO.		
	f. Changing rooms should have change lockers and dressing table.		
	g. Dustbins – 4 No's.		
	h. Deleted		
	All furniture items should be of standard make as mentioned in the table below.		
7	**Miscellaneous:**		
	a. Cabling of Network (LAN) connectivity for camera system, console system, workstation and computers etc.		
	b. Fire extinguisher Dry CO2 ABC type as required for the building safety. - 2 nos		
	LIST OF ITEMS AND SUGGESTED MANUFACTURERS.		
SL NO	**ITEMS** **PREFERRED MAKES**		

A	FLOORING VITRIFIED TILES - Somany, Kajaria , H&R Johnson, RAK india		
B	PAINT - Dulux, Asian Paints ,Nerolac		
C	PLUMBING - Kohler, Jaguar , Grohe , Roca		
D	SANITARY ITEMS - CERA, Hindware, Parryware		
E	ELECTRICAL		
1	CABLES - Finolex, Havells ,V-Guard		
2	SWITCHES - Legrand, L&T, Crabtree , Roma		
3	DISTRIBUTION BOX , MCB - Legrand, L&T, Siemens, Havels		
4	LIGHT FITTINGS - Philips / Crompton / Wipro/Syska		
F	AIR CONDINTIONING - Daikin, Hitachi, Blue Star, Voltas,		
G	FURNITURE - HermenMiller, Godrej, Featherlite,Geeken		
	BOQ		
Sl No.	**Item Description**	**Qty**	**UOM**
1	Digital mammography system with stereotactic biopsy	1	No
2	Dual foot pedals	2	No
3	Radiation shield	1	No
4	Face shield	1	No
5	Large paddle- 24x31cm **(+/-2cm)** - 1 Nos	1	No
6	19x23 cm **+/- 2 cm** sliding paddle - 1 Nos	1	No
7	Spot compression paddle - 1 Nos	1	No
8	Remote service modem	1	No
9	LED X-ray Film viewer	3	No
10	UPS for power supply & backup of 30 minutes **for the entire system**	1	No
11	**Dry view camera: 508 DPI or more, with 300 films each (size 18 X 24cm and 24X30cm)**	1	No
12	Quality control toolkit	1	No
	Site Modification Work as per specification		
1	Civil works	600	sq ft
2	Electrical work	600	sq ft
3	Public health (plumbing and sanitary fittings).	600	sq ft
4	Air Conditioning	6	TR

SN	DRF - Digital Flat Panel Fluoroscopy cum Radiography System		
	Any two components out of three (X-Ray tube, X ray Generator and Flat panel detectors) should be from the same manufacturer of the main (Complete) system The unit should be completely integrated system (integrated X-ray generator and image acquisition control console) having the following specifications:		
	Generator:		
	630 mA unit with microprocessor controlled high frequency X-ray generator with power output of 80 kW or more		
	ii. Exposure kV range should be 40-125 kV		
	It should be able to work on 800 mA at 100 kV for Radiography and from 0.5 to 5 mA at fluoroscopy		
	iv. System should have facility for pulsed fluoroscopy. Please provide details		
	v. Generator should have minimum exposure time of 1 ms or less		
	vi. System should have multiple user defined programs (vendor defined programs)		
	vii. There should be provision for automatic exposure control (AEC)		
	viii. It should have provision for overload protection device and self-diagnosis		
	ix. It should have provision for digital display of kV, mA both for radiography and fluoroscopy mode		
	x. Generator parameters should be automatically set		
	1. X-ray tube:		
	i. One X-ray tube which is over couch		
	ii. The X-ray tube should have dual focal spots. Small focus not more than 0.6 mm and large focus not more than 1.2 mm		
	iii. X-ray tube rating should be compatible with X-ray generator output		
	iv. Small focal spot power rating should be atleast 50 kW		
	v. Large focal spot power rating should be atleast 60 kW		
	vi. Anode heat storage capacity should at least be 600 kHU		
	vii. Mention the heat dissipation rate and specify technology used for cooling		
	viii. Should have provision of electromagnetic locks with collision protection sensors		
	ix. Integrated computer controlled automatic X-ray beam filtering		
	2. Table:		
	i. Floor mounted table with carbon fibre or equivalent table top, scratch resistant surface – specify the material		
	ii. System should be motor driven, height adjustable with longitudinal movement of table top/detector and horizontal table top movements. Please specify the range of movements		
	iii. Table should have angulations from longitudinal to head down positions (vertical +90 degrees to Trendelenburg -20 degrees)		
	iv. Table should support patient weight up to 150 kg with full range of movements		
	v. System should have well-designed foot switch for releasing fluoroscopy and acquisition		
	vi. System should have provision for collision protection		
	vii. Table should have integrated bucky unit for flat panel general radiography with a grid ratio of at least 8:1 or 40 lines/cm		
	viii. Intercom system must be available to communicate with patients		
	ix. Provision for control of all table movements both locally at the table as well as remote controlled on the console		
	x. Table height should be range between 70-90 cm (±5%)		
	xi. Remote controlled compression cone		
	xii. System should have head to toe coverage without repositioning the patient.		
	3. Direct digital imaging system for fluoroscopy:		
	i. Field of view of at least 40 x 40 cm or more / 35 x 43 cm with rotating facility		
	ii. Collimator should be automatic and remote controlled		

	iii. System should have real time optimization techniques to maintain constant brightness at the lowest allowable dose to the patient		
	iv. Should have cine loop facility and last image hold facility during fluoroscopy		
	v. Acquisition matrix should be of at least 1024 x 1024 at 10 bit rate		
	vi. Serial exposure rates atleast 4 fps and in pulsed fluoroscopy mode frame rate should be at least 15 frames per second.		
	vii. Should be fitted with integrated dose measuring device		
	4. Detector system:		
	i. Single digital flat panel detector, using CsI scintillator with TFT convertor		
	ii. Detector must be at least 40 x 40 cms or more / 35 x 43 cm with rotating facility		
	iii. Image matrix size 25 x 25 pixel or more		
	iv. Pixel size should be 200 micron or less		
	v. Should allow centred/ de centred collimation		
	vi. DQE should be at least 60% at 0.05ug/mm.		
	7. Image display system:		
	i. Two monochrome monitors of 19" or more of medical grade to be provided, one in examination room and one in console room with resolution of 1 mega pixel or more		
	ii. **Post Processing Work Station** (Post-acquisition image processing, viewing, reprocessing, hard copy documentation and onward transmission. It should be connected with main console.		
	8. Control console:		
	i. All system movements of table shall be controlled by the operator at the table in the examination room and also at the console. Remote console switches available at the console		
	ii. The system should have facility for edge enhancement, positive/ negative display, windowing, contrast/ brightness, electronic shuttering, vertical and horizontal image reversal, and zoom functions		
	iii. The system should have fast and direct access to all series, single images, in both examination (remote controlled) and console room iv. System should have angle/ distance measurement, image labelling and patient positioning facilities		
	9. Image storage and transmission:		
	i. Hard disc memory capacity of 8000 images and online image storage capacity of at least 50000 images in 1024 x 1024 matrix at 10/ 12 bits on the main system disk		
	ii. The systems should support recording of images on compact discs/ DVD		
	iii. The system should be DICOM 3.0 (or higher version) ready (like send, receive, print, record on CD/DVD, acknowledge, etc.) for connectivity to any network, computer/ PC, etc. in DICOM format		
	vi. Vendor should connect this with existing LAN system and other laser cameras already existing in the department without any extra cost vi. System should be PACS/ HIS/ RIS interface ready		
	10. Accessories:		
	Dry Chemistry Camera. Should have 500 DPI and should print at least 3 sizes of films 8x10, 14x17, 10x12 inches. 200 films of each size to be supplied.		
	Online UPS along with batteries of appropriate rating to give 30min. back up to operate the complete system including X-Ray machine and imager.		
	Lead glass as per AERB norm and size 120 x 90 cm or more for console room		
	Lead Aprons(0.5mm Lead equivalent) with hanger - 04Nos , Thyroid shields- 04, gonadal shields-02		
	Radiation protection flaps		
	Footstep for patient – 1 no.		
	Hand grip		
	Patient fixing belts and compression devices (for performing excretory urography)		
	11. Essential certification:		

	Radiation safety certificate: the offered model must have a valid AERB certificate at the time of submission of tender		
	The system should be European CE with four digit notified body number or US FDA approved		
	Regular QA according to AERB norms will be responsibility of bidder during warranty and CMC period.		
	Site Modification - Scope of Work – DRF		
	1. The scope of work includes complete Civil work, Electrical, Plumbing, Furnishing, Air-conditioning and fire fighting for the construction of DRF Centre.		
	2. While preparing the plan, the following aspects have to be addressed.		
	a. Care should be taken to provide easy negotiation of the patient stretchers/ trolleys through corridors and doors.		
	b. Radiation shielding for doors, walls, windows etc.		
	c. Furniture like desk, chairs, shelves etc.		
	d. Patient stretcher and other furniture/ accessory to make the DRF centre functional.		
	3. The cost of site modification for the area of **1000sq.ft** and Air-conditioning of Tonnage 12 TR will be considered for Ranking / Evaluation purpose.		
	4. Moreover Bidders will have to quote the Unit Rates of the following components of site modification work.		
	a)Civil works		
	b)Electrical work		
	c)Public health (plumbing and sanitary fittings).		
	d)Air Conditioning (HVAC)		
	e)Interior Furnishing & Furniture		
	f)Miscellaneous		
	Scope of work for Site modification Work - DRF system:		
	The supplier should inspect the proposed site and submit all the detailed structural and architectural drawings and BOQ for the proposed DRF Centres along with technical bid of the tender.		
	The DRF CENTRE shall consist of the following rooms:		
	a) DRF Room		
	b) Console room		
	c) Equipment room		
	d) Patient preparation room cum change room		
	e) Patient waiting area		
	The actual area of Site modification works done will be considered for payment, based on the unit rates and site measurements.		
1	**Civil work**		
	i. Civil construction work including construction of brick wall if any, plastering, flooring as per the approved plan and equipment layout plan.		
	ii. Concrete bed at DRF equipment area.		
	iii. Platform for unloading and shifting the DRF should be provided if necessary.		
	iv. Cable tray, trench & channel – necessary trenches, cable tray and channels at required location would be provided.		
	v. All the construction work to be done as per the final plan approved by the Consignee.		
	a. Flooring		
	i.600 x 600 mm vitrified tiles with 100mm tile skirting to match in console room, lobby and patient preparation areas, Radiologist room etc.		
	ii. 50 mm thick cement concrete flooring with Vinyl flooring in DRF equipment / UPS room.		
	b. Painting		

	Two coats Plastic Emulsion Paint over 2 coats of wall putty including primer in patient preparation area, patient waiting area, console room, DRF room & Equipment room etc.		
	c. False Ceiling		
	Acoustical tile for ceiling with light weight insulating material of high quality supported on grid or finished seamless with support above ceiling. Finished with white paint or powder coated with white paint, if metallic. Ceiling height to suit the equipment mount and clearances.		
2	**Plumbing work**		
	All water pipes and fittings shall be of high density polythene of approved and standard make. The gratings shall be brass chrome plated. All plumbing accessories should be of standard make.		
3	**Electrical work**		
	a. The supplier shall be required to specify the total load requirements for the DRF centre including the load of air conditioning, room lighting and for the accessories if any.		
	b. The supply line will be provided by the Institute up to one point within the DRF centre . The distribution panel shall be provided by the vendor. Few lights in each room shall be connected to the UPS to provide emergency lighting.		
	c. The electrical work shall include the following:		
	i. Wiring – All interior electrical wiring- with main distribution panel board, necessary MCBs, DB, joint box, switch box etc. the wires shall be of copper of different capacity as per the load and should be renowned make as listed below.		
	ii. Switches light and power points should be of modular type and of standard make as listed below.		
	iii.General lights – LED light fitting with 500 lux illumination		
4	**AIR CONDITIONING:**		
	a. Package air conditioners units and split AC units may be used according to room requirement and suitability. Humidity control should be effective to eliminate moisture condensation on equipment surface. The Air conditioning should be designed with standby provision to function 24 hours a day.		
	b. The outdoor units of AC should have grill coverings to prevent theft and damage.		
	c. Ventilation is required in toilet.		
5	**Environment specifications:**		
	Relative Humidity range: To be maintained between 40% and 60% in all areas except equipment room which shall be as per requirement of the equipment.		
	Temperature range: 22 ± 2° C in all areas except equipment room which shall be as per requirement of the equipment.		
	Air conditioning load: The heat load calculations and maintaining the desired temperature and humidity shall be the responsibility of the bidder.		
6	**Furniture:**		
	a. Revolving chairs height adjustable, medium back with hand rest in the Control room, Radiologist room and viewing area. – 4 NO.S		
	b. Chairs for patient waiting area – Three seater (chrome plated) - 10 NO.S		
	c. Cupboard with laminate door shutters for storage of spare parts and accessories and records as per requirement. – 3 NO.S		
	d. Drug trolleys for patient preparation area. – 1 No.		
	e. Patient trolley with rubber foam mattress to be kept in the patient preparation room.		
	f. Name boards for all rooms.		
	g. Tables for Workstation - 1 NO.		
	h. Changing rooms should have change lockers and dressing table.		
	i. Dustbins – 10 No's.		
	j. **Deleted**		

	All furniture items should be of standard make as mentioned in the table below		
7	**Miscellaneous:**		
	a. LED X-ray film viewer with adjustable brightness; capable of holding 3 films of 14"x17" size. – 5 Nos		
	b. Cabling of Network (LAN) connectivity for camera system, console system, workstation and computers etc.		
	c. Fire extinguisher Dry CO2 type as required for the building safety.		
	LIST OF ITEMS AND SUGGESTED MANUFACTURERS.		
	ITEMS **PREFERRED MAKES**		
A	**FLOORING VITRIFIED TILES** - Somany, Kajaria , H&R Johnson, RAK India		
B	**PAINT** - Dulux, Asian Paints , Nerolac		
C	**PLUMBING** - Kohler, Jaguar , Grohe , Roca		
D	**SANITARY ITEMS** - CERA, Hindware, Parrywere		
E	**ELECTRICAL**		
1	**CABLES** - Finolex, Havells, V-Guard		
2	**SWITCHES** - Legrand, L&T, Crabtree , Roma		
3	**DISTRIBUTION BOX , MCB** - Legrand, L&T, Siemens, Havels		
4	**LIGHT FITTINGS** - Philips / Crompton / Wipro/ Syska		
F	**AIR CONDITIONING** - Daikin, Hitachi, Blue Star, Voltas,		
G	**FURNITURE** - Herman Miller , Godrej , Featherlite,Geoken		
	BOQ		
SL. No	**Item Description**	**Qty**	**UOM**
1	Digital Radiography Fluoroscopy System as per the Tender Specification	1	No
2	Post Processing Work Station	1	No
3	Dry Chemistry Camera as per specification	1	No
4	Online UPS	1	No
5	Lead Apron with Hanger	4	No
6	Lead apron stand	1	No
7	Thyroid Shields	4	No
8	Gonadal Shields	2	No
9	Radiation protection flaps	1	Set
10	Footstep for patient	1	No
11	Hand grip	1	LS
12	Patient fixing belts and compression devices (for performing excretory urography) - 1 SET	1	LS
	site modification work Work (1000 sq ft) as per specification		
1	Civil works	1000	Sq ft
2	Electrical work	1000	Sq ft
3	Public health (plumbing and sanitary fittings)	1000	Sq ft.
4	Air conditioning	12	TR
5	Interior Furnishing & Furniture	1000	Sq ft.
6	Miscellaneous	1	LS
	Furniture:		
1	Revolving chairs height adjustable, medium back with hand rest,	4	No
2	Chairs for patient waiting area – Three seater (chrome plated) -	10	No
3	Cupboard with laminate door shutters	3	No
4	Drug trolleys for patient preparation area,	1	No
5	Patient trolley with rubber foam mattress	2	No
6	Tables for Workstation and Radiologist ,	2	No
7	Changing rooms (with change lockers and dressing table),	1	Set
8	Dustbins	10	No
9	Room Signage	1	LS
10	Venetian Blinds	1	LS
	Miscellaneous:		
1	LED X-ray Film viewer	2	No

2	Cabling of Network (LAN) connectivity for camera system, console system, workstation and computers etc.	1	LS
3	Dry chemical power type fire extinguisher of 5kg: capacity	3	No
4	Lead glass for console room	1	No
	Added para: **Toilet (Optional) - 1**	**1**	**No**

ORTHOPAEDIC OPERATING TABLE with ACCESSORIES (OT with attched)

	SPECIFICATIONS
1	Each orthopedic table along with its accessories must be able to perform orthopedic trauma surgeries, arthroscopy, pediatric orthopedics, spine and standard replacement surgeries
	Table must have the following standard features:
1	Radiolucent table top made up of Carbon Fiber or equivalent for orthopedic use
2	Radiolucent top for orthopedic use:
a)	Three or more sectional back plate
b)	Seat plate with detachable buttock support
c)	Radiolucent Perineal Post- child and adult size
d)	Detachable divided leg plates
e)	Should be able to slide longitudinally more than 250mm both side.
3	Should have provision for Eccentric Position.
4	Two foldable and detachable radiolucent traction bars fixed beneath the seat plate with two adjustable pivot joints.
5	Accessory side rails for attaching accessories entire length of the table top. Rail should accept standard accessories.
6	Hygenic steel base.
7	Additional radiolucent attachment/ plate for orthopaedic intervention in paediatric patients
8	Detachable pads made of foam core, approximately 50mm thick, should be molded and radiolucent
9	Table measurements and control panel:
a)	Table Top height range- 70cm – 120cm
b)	Trendelenburg/ Reverse Trendeleburg –upto 30 degree
c)	Lateral Tilt- 15-30 degree
d)	Motorised back plate up 80-90 degree and down upto -40 degree
e)	Hand control and Battery control for various table functions.
f)	Battery capacity for approximately 2 weeks with average use
g)	Can be operated directly from the mains for all electro hydraulic and Manual override movements
h)	Patient weight capacity >180kg for all positions.
i)	Handset can be connected on either side of the table (head or foot end).
j)	Length: 210 – 220cm
k)	Width: more than or equal to 50 cm without side rails.
l)	Table should be able to bring to zero position with single button
	Each table must be provided with the following accessories:
1	Hand operating table
2	Lateral brace kit for total hip replacement
3	Accessory for bilateral hip surgery
4	Body strap
5	Traction bars radiolucent-02
6	Total Knee Flexion and Support System for knee arthroscopy
7	Well Leg Support system
8	Traction boot small pair with multiplanner rotation
9	Traction boot large pair with multiplanner rotation
10	Radiolucent Arm Boards with Pad(2)

ORTHOPAEDIC OPERATING TABLE with ACCESSORIES (OT with attched)

	SPECIFICATIONS
1	Each orthopedic table along with its accessories must be able to perform orthopedic trauma surgeries, arthroscopy, pediatric orthopedics, spine and standard replacement surgeries
	Table must have the following standard features:
1	Radiolucent table top made up of Carbon Fiber or equivalent for orthopedic use
2	Radiolucent top for orthopedic use:
a)	Three or more sectional back plate
b)	Seat plate with detachable buttock support
c)	Radiolucent Perineal Post- child and adult size
d)	Detachable divided leg plates
e)	Should be able to slide longitudinally more than 250mm both side.
3	Should have provision for Eccentric Position.
4	Two foldable and detachable radiolucent traction bars fixed beneath the seat plate with two adjustable pivot joints.
5	Accessory side rails for attaching accessories entire length of the table top. Rail should accept standard accessories.
6	Hygenic steel base.
7	Additional radiolucent attachment/ plate for orthopaedic intervention in paediatric patients
8	Detachable pads made of foam core, approximately 50mm thick, should be molded and radiolucent
9	Table measurements and control panel:
a)	Table Top height range- 70cm – 120cm
b)	Trendelenburg/ Reverse Trendeleburg –upto 30 degree
c)	Lateral Tilt- 15-30 degree
d)	Motorised back plate up 80-90 degree and down upto -40 degree
e)	Hand control and Battery control for various table functions.
f)	Battery capacity for approximately 2 weeks with average use
g)	Can be operated directly from the mains for all electro hydraulic and Manual override movements
h)	Patient weight capacity >180kg for all positions.
i)	Handset can be connected on either side of the table (head or foot end).
j)	Length: 210 – 220cm
k)	Width: more than or equal to 50 cm without side rails.
l)	Table should be able to bring to zero position with single button
	Each table must be provided with the following accessories:
1	Hand operating table
2	Lateral brace kit for total hip replacement
3	Accessory for bilateral hip surgery
4	Body strap
5	Traction bars radiolucent-02
6	Total Knee Flexion and Support System for knee arthroscopy
7	Well Leg Support system
8	Traction boot small pair with multiplanner rotation
9	Traction boot large pair with multiplanner rotation
10	Radiolucent Arm Boards with Pad(2)

11	Beach chair position system with helmet type head rest for position of the patient along with radiolucent. shoulder plates
12	Skull traction and head rest for cervical spine surgery
13	Accessories for genucubital position
14	Accessories for genupectoral position
15	Mayfield attachment for cervical spine
16	Accessories for interlocking nailing of humerus and tibia,
17	Accessories for interlocking nailing for femur in supine position
18	Anaesthesia screen with clamp
19	Silicone Gel pads (One set each) for various patient
a)	Gel pads as Head ring: open and closed type for both adult and pediatric use separately
8)	Gel pads for head rest in supine, prone and lateral positions separately for adults and children
c)	Gel pads as operating table pad, perineal table pad, sacral protector, arm protectors
d)	Gel pads for flexed knee in positions for spine surgery
e)	Gel pads thigh, leg, heel
f)	Gel pads for different positions
20	Cushions (One set each): as foam pads for different positions:Head ring, lateral positioning, leg rest cushion, cushions especially for spine surgery
21	Should include below Pediatric accessories- a) Pediatric traction boot. b) Side post. c) Perineal post
22	Two or more detachable shoulder segment
23	RS 232 port/USB should be available for diagnostic and servicing purposes.
24	" Deleted

	Automatic Tourniquet System (Tourniquet)
	Automatic Tourniquet System should be dual-port, dual-cuff system with microprocessor controls and dedicated ports for supplying and measuring pressure independently, so that it can be used for bilateral joint replacement procedure. The Tourniquet should combine the latest in advanced tourniquet technology with the well-established tradition of safety, reliability, and convenience
	It should have the following Features:-
	Ability to provide a specific Recommended Tourniquet Pressure (RTP) for each patient based on physiological characteristics.
	Should use ambient air
	Microprocessor Controlled
	Self- check calibration
	Audible and Visual Alarms
	Internal Pump for Fast Inflation Time
	Positive locking connectors
	Should automatically checks the accuracy of machine calibration every time the system is powered up
	Should alert the user of the cuff status when attempt is made to power down the machine
	Cuff Lockout Safety Feature
	Audio visual alarm for "deflation" to reduce the incidence of clinically significant issues related to "sudden deflation
	Dual display for each cuff during bilateral surgery.
	Dual compressors to allow for independent control over cuffs "one" and cuff "two", addressing the potential physiological differences in the patient
	Dedicated pressure line and pressure measurement line for cuff "one" and cuff "two" which should be designed to provide most accurate readings.
	Utilization of two independent cuffs during one surgical procedure to allow bilateral limbs procedures
	Battery backup of 4 hrs, so that it can be used during patient transport and to be used during a power failure. No interruption in the procedure while the cuff is inflated- Automatically transfers power to the battery.
	Should sense, calculate and report the cuff pressure necessary to achieve complete blood occlusion in the operative limb.
	Carrying Handle
	Should be supplied with reusable cuff and conical cuffs of all sizes(small, medium & large – 2Nos each)
	Deleted

	Battery Operated Drill / Reamer and saw for joint Replacement
1	Drill and Reamer and Sagital and reciprocating Hand Pieces
	Should have dual trigger for forward/ reverse and oscillation mode
	Minimum speed of 1200 rpm and should have variable speed control on the hand piece
	Drill Torque: 30 in lbs or more
	Ream Speed: 300 rpm or more
	Ream Torque: 140 – 150 in lbs.
	Should have DC brush less motor for low maintenance
	Should be Sterilizable by Steam Autoclave, ETO and in 10 minutes through a "Flash" autoclave
	Should have Tool less mounting of accessories
	Should have safety mode on the hand piece
	Adaptors for Drill/ Reamer Hand Piece
2	Jacobs Chuck and Key attachment (Drill Attachment)
3	Reamer attachment
4	K wire quick coupling
5	Tripple reamer quick coupling
6	Quick coupling.
7	Sagittal Saw Hand Piece
	Should have two speed controls with standard and fast mode.
	Blade mount should be adjustable to different angles movement adjustable in 8 Steps to 45 Degree.
	Should have Dc brush less motor
	Should he Sterilizable by Steam Autoclave, ETO and in 10 minutes through a „Flash" autoclave
	It should have maximum speed of 10,000 to 12000 CPM
8	Sagittal Saw Blades all sizes & lengths.
9	Reciprocating Saw should be a separate hand piece with blades of below sizes with minimum 12000 CPM. Width 19.5 Length 86MM, CUTTING THICKNESS 1.27MM, WIDTH 12MM. LENGTH 80MM, CUTTING THICHNESS 0.9MM WIDTH 21MM. LENGTH 85MM, CUTTING THICHNESS 0.9MM ACL Blade WIDTH 9.50mm, LENGTH 25.50mm, CUTTING THICKNESS 0.60mm
10	Trinkle attachment
11	ACL Blades: Width 9.5mm, Length- 25.5mm, Cutting Thickness- 0.6mm.
12	Mettal cutting
13	Burs for cement removal and sculpting.
14	Battery (4 nos):
	Should have Non Autoclavable Battery with life of 300 charging cycles
	Should have autoclavable Housing and Shield
	Should have Nickel Cadmium autoclavable Standard and Small Battery
15	Battery Charger
	220 volts charger
	Should have capability to identify the worn out battery
	Should charge four batteries at a time
	Should have an indicator to provide battery status for charging
16	T n Deleted

General Orthopaedic Instruments		
General Orthopaedic Instruments – Set No. 1		
	DESCRIPTION	QTY
1	Langenback Retractors – 10 each of following	20
	i. Mini Langenback Retractor 10mm X 6mm	
	ii. Mini Langenback Retractor 22mm X 8mm	
	iii. Kocher Langenback Retractor 40 X 11mm X 21cm	
	iv. Langenback Retractor 30 X 11	
2	. Hohmann"s Retractors	30
	i. 8mm Blade	
	ii. 10mm Blade	
	iii. 17mm Blade	
	iv. 43mm Blade	
	v. 13/25mm Blade	6 Nos. Each
3	Hip Retractor set with quadrilateral frame and six spare blades	2
4	Jacob"s drill (open type/closed type)	30
5	BP knife handles	
	No 3 size	20
	No 4 size	20
	No 5 size	20
6	Bone levers	
	Small size	20
	Medium size	20
	Large size	20
7	Hammer	12
	i. Collin Mallet	
	ii. Gerzog Mallet	10 Nos.
	iii. Nylon Faced Hammer	20 Nos.
8	Bone Holding Reduction Foreceps with locking device	
	Small for forearm bones	6 pairs
	Medium	6 pairs
	Large for leg bones	6 pairs
9	Bone Holding Forceps	
	Lane"s- Small, Medium, Large size 6 each	18
	Ferguson"s- Small, Medium, Large size 6 each	18
	Hey Grove"s- Small, Medium, Large size 6 each	18
	Burn"s – Small, Medium, Large size 6 each	18
10	. Bone forceps with Wire Passer (two blunt blades with hole for Passing K wire to fix phalanx fractures)	10
11	Bone Reduction forceps with radiolucent attachment to pass Wire to fix the fractures	20
12	Forearm clamps with provision for passing plates without	
	Removing the clamp	20
13	Wire holding forceps	20
14	Wire holding pliers Small Large	 10 10

15	Wire bending pliers – 5 each of blunt tip and sharp tip	10
16	. Wire tensioner	20
17	. Wire passer	20
18	. Bending Irons for 3.5 mm plates	20
19	. Bending Irons for 4.5 mm plates	20
20	. Bending Irons for reconstruction plates	20
21	. K Wire Traction Set Complete	10 Sets
	a) Each set should contain	
	i. Kirschner Stirrup for wire extension	5 Nos.
	ii. K – Wire double ended 200mm	50 Nos.
	b) Each Set Should Contain	
	i. Gissane Stirrup for wire extension	5 Nos.
	ii. K- Wire double ended 200mm	50 Nos.
22	. Bohler"s Stirrups of Assorted Sizes	200
23	. Bernhard Towel Forceps 6 ½	100
	Backhaus Towel Forceps 5"	100
24	Sims Maier Sponge Holding 11"	50
25	Probe Nelaton 16cm	10
26	. Skin Hooks 20	20
	Gillies of size 1 & 3	10
27	Amputation Saw (Charriere Type)	10
28	Bone Curette	
	i. Volkman All Size	5 Each
	ii. Maartini Curettes All Size	5 Each
29	. Patella Holding Forceps, 4 prong/3 prong	4 each
30	. Pointed reduction Clamp(AO type, small, medium,large)	6 pairs each
31	. AO type self centric Forceps, (AO type, small, medium,large)	6 pairs each
32	Low Man clamp, small, medium, large	4 nos each
	N.B. Only Complete set should be quoted and sample to be produced for evaluation	
	I Deleted	
	General Orthopaedic Instruments – Set No.2	
	Following Instruments made good quality stainless steel with long lasting cutting edge	
	Specifications	
	DESCRIPTION	
1	Depth Gauge for miniscrews	
	1.5mm to 2 mm screw	5
	2.0mm to 2.5mm screw	5
	2.7mm to 4.0mm screw	5
	4.5mm screw	5
2	Tap Sleeve for	
	4.5mm tap	10
	3.5mm tap	10
3	Drill Sleeve for	
	3.2mm drill bit	10
	2.5mm drill bit	10

4	Autoclavable storage box for AO tyoe screws - 5	5
5	Autoclavable storage box with trays for AO type plating instrument set - 5	5
6	A.O. damaged screw removal set 2	2
7	Small Fragment Plating Instrument with Implant Set Complete	4 Sets
	Should consist of the following:	
	i. Small Fragment instrument set (3.5mm) in autoclavable box	1 No.
	ii. Small screw box	
	Contain the box:	
	Cortical screw 3.5 mm	
	10mm	10 unit
	12mm	12 unit
	14mm to 40mm	18 units each
	Cancellous Screws 4 mm	
	10mm to 50mm	5 units each
	Screw holding forceps	1
	Storage and sterilization case with tray	1no.
	iii. Box Containing Small Plates.	
	D.C. Plates Small 4 hole	4 No.
	D.C. Plates Small 5 hole	8 No.
	D.C. Plates Small 6 hole	12 No.
	D.C. Plates Small 7 hole	8 No.
	D.C. Plates Small 8 hole	5 No.
	Storage and Sterilization Box	1 No.
	2. Instruments and Implants for Narrow and Broad	
	Dynamic Compression Plating. Sets	
	Should Consist of the following	
	i. Basic Instrument set for 4.5mm Plating	1 No.
	Storage and autoclave box for above	1 No.
	ii. Screws Box Containing the following	
	Cortical Screws 4.5mm 14mm to 28mm	8 No. Each
	Cortical Screws 4.5mm 30mm	16 No. Each
	Cortical Screws 4.5mm 32mm	14 No. Each
	Cortical Screws 4.5mm 34 to 40mm	12 No. Each
	Cortical Screws 4.5mm 42mm & 44mm	6 No. Each
	Cortical Screws 4.5mm 46mm & 48mm	9 Nos. Each
	Cortical Screws 4.5mm 50mm to 60mm	2 No. Each
	Concellous Screws 6.5mm 32mm Thread	
	40mm to 50mm	4 No. Each

	55 to 65mm	3 No. Each
	70 to 95mm	2 Nos. Each
	Cancellous Screws 6.5mm 16mm Thread	
	30&35mm	4 No. Each
	40mm to 50mm	6 No. Each
	55mm to 65mm	2 No. Each
	70mm & 75mm	3 Nos. Each
	80mm to 95mm	2 Nos. Each
	Malleolar Screws 4.5mm	
	25mm to 75mm	2 Nos. Each
	Storage & Sterilization Box	1 No.
	iii. Dynamic Compression Plates	
	Narrow 4 hole to 8 hole	2 Nos. Each
	9 hole to 12 hole	1 No Each
	Broad 5 hole to 8 hole	2 Nos. Each
	9 hole to 14 holes	4 Nos. Each
	9. Wiring Instrument Set	
	Should consist of the following:	
	Wire Tightner With Pegs	
	Wire Passer With Synthetic Handle	
	Double Action Wire Cutter Large	
	Wire Bending Pliers Multipurpose	
	Flat Nosed Parallel Pliers Large With Side Cutter	
	Wire Holder	
	Forceps For Holding Cercilage Wire	
	Box For Wire Instrument Set	
10	Femoral Nail Extractor Set	2
11	Long handled Bone curette	
	- Non serrated edge	10
	- Serrated edge	10
12	Gigli Saw Instrument set	5
	Each set should contain	
	I. Gigli Saw Handle	1 pair
	II. Gigli Saw Wires	100 Nos.
	13. Patella reduction clamp	10
	14. Patella wire passer	4
	15. Ring Cutter	10

	N.B. Only Complete set should be quoted and Sample to be produced for evaluation	
	I Deleted	
	General Orthopaedic Instruments – Set No.3	
	Specification: Following items manufactured to international standards by reputed multinational firms	
	DESCRIPTION	
1	. Bone Rongeur – Double Action	
	Small Size 18 cm	10
	Medium Size 23 cm	10
	Large Size 27cm	10
	Sergent Bone Rongeur	4
	Duckbill Bone Rongeur	4
	Lacksell Bone Rongeur	4
2	Bone cutter – Double Action straight & curved	
	Small Size 18cm	10
	Medium Size 23 cm	10
	Large Size 27cm,	10
	Tudur Edward	4
3	K- Wire Cutter (Capacity 4 mm) with replaceable tungsten carbide	
	Blades with rubber Jaws Set	10 Sets.
	Should consist of:	
	I. K- wire cutter 28cm	
	II. Spare Blades 4 pairs with Screws	
	III. Spare Rubber Jaws 4 Pairs with Screws	
	IV. Allen keys 4 sets	
4	Stienmann Pin Cutter cutting capacity up to 6mm	10
5	Bone Curette Double Ended Round/Oval	
	Small 13 cm	20
	Medium 16 cm	20
	Large 20cm	20
6	Loute wire tightener cum wire cutter	10
7	Wire Bending cum cutter plier length 15 cm	10
8.	Osteotomes, straight with tufnol handle, 10 each of sizes	40
	7,10,15,20 mm width	
9	. Osteotomes, curved with tufnol handle, 10 each of sizes	40
	7,10,15,20 mm width	
10	Osteotomes, straight with tufnol handle, 10 each of sizes	50
	4,6,8,10,12 mm	
11	Chisel Straight with tufnol handle 10 of each sizes	40
	7,10,15,20 mm	
13	Retractors	
	Wullstein-Weitlaner Self-Retaining Retractor 3 X 3 Teeth Blunt Length 13 Cm	20
	Weitlaner Self-Retaining Retractor 3 X 4 Teeth Blunt Length 163 Cm	20
	Weitlaner Self-Retaining Retractor 3 X 4 Teeth Blunt Length 26 Cm	20
	Adson Self-Retaining Retractor 3 X 4 Teeth Blunt Length 26 Cm	20
	Gelpi Self-Retaining Retractor With Balls, Blunt Length 18 Cm	20
14	Elevators	
	Farabeuf Periosteal Elevator, Straight 13 Mm Length 15 Cm	20

	Farabeuf Periosteal Elevator, Curved 13 Mm Length 15 Cm	20
	Lambotte Periosteal Raspatory And Elevator, Curved 10mm Length 21 Cm	20
	Mc Donald Elevator Double Ended Curved 6/6 Length 19 Cm	15
	Cobbs Elevator Medium 13mm With Long Handle	10
	Cobbs Elevator Large 19mm With Long Handle	10
	Bristows	10
15	Bolt Cutter	
	Bolt Cutter Maximum Capacity Dia 6mm Length 56 cm	10
16	Lead Hands	
	Lead Hands for Adults	10
17	Jacobs Chuck With Handle	
	Jacobs Drill Three Jaw Chuck With Key, Max Dia 6.35mm Length 14 Cm	30
18	Awls	
	With T-Handle Length 14 Cm	20
	With Round Handle Length 14 Cm	20
19	Skin Grafting Handle With Blades	20
	N.B. Only Complete set should be quoted and Sample to be produced for evaluation	
	Instruments should be European CE/ US FDA approved	
	General Orthopaedic instruments - Set No.4	
	Specifications: Following items manufactured to international standards	
	(equivalent to AO Specification) by reputed multinational firms)	
	DESCRIPTION	
	1. DHS/DCS Triple Reamer	2
	2. Quick coupling for DHS, DCS triple reamer	2
	3.Key for Jacob's reamer chuk - 5 Nos. for each sizes	10
	4. Seating chisel for condylar blade plate	2
	5. Router for quick coupling for condylar blade plate	2
	6. Screw driver for 3.5 mm screws	10
	7. Screw driver for 4.5 mm screws	10
	8. Templates for 3.5 mm DCP plates	10
	9. Templates for 4.5 nun DCP plates	10
	10. Bending Plier for 3.5mrn plates	4
	11. Bending Press for 4.5mm Plates	4
	12. Tap for DHS Lag Screw	1
	N.B. Only Complete set should be quoted and Sample to be produced for evaluation	
	Instruments should be European CE/ US FDA approved	
	General Orthopaedic Instruments - Set No. 5	
	The following instruments are made of good quality of stainless steel	
	DESCRIPTION	
1	Hemireplacement Instsrument Set Complete	5 sets
	With trial A.M. Prosthesis one each of sizes	
	From 39mm to 54mm	
2	Ilizarov Instrument Set Complete	10 sets
	Each set should contain:	
	i. Half Rings 140,160,180,00 & 220	10 Nos. Each

	ii. 5/8 Rings as above	1 Each
	iii. Wire Fixation Bolt Cannulated	200
	iv. Wire Fixation Bolt Slotted	200
	v. Connection Bolts	100
	vi. Nuts	500
	vii. Threaded Rod 100mm 125,150,200,50,300	10Nos. Each
	viii. Male Post & Female Posts 2,3 & 4 hole:	10 Nos. Each
	ix. Washers	200
	x. Twisted Plates 2,3,4 hole:	10 Nos. Each
	xi. K-Wires 1.8mm with trocar.	100
	xii. K-wires 1.8mm with Bayonet	100
3	External Fixator Instrument Set Complete	
	Each Set Should Contain	
	i. Universal Clamps for	10 sets
	Tibia and Femur	100 No.
	ii. Tubular Rod assorted size 20,30 cm	10 Nos. Each
	iii. Schanz Pin 4.5 & 5mm	100
	iv. Tranverse Clamps	10 Nos
	v. Tube to Tube Clamp	10 Nos
	vi. Delta Clamps	10 Nos
	vii. Mini Clamp 2.5mm	50
	viii. Mini Clamp 3.5mm	50
	ix. Schanz Pin 2.5mm	50
	x. Schanz Pin 3.5mm	50
	xi. Connecting Rods 15cm	5
	xii. Connection Rods 20cm	5
	xiii. Spanner Stainless Steel 11mm	5
	xiv. Spanner Stainless Steel 8mm	5
1	Skull Traction Instrument Set Complete	
	Each Set Should Contain	10sets
	i. Crutchfield Tongs	25 Nos
	ii. Bur	1 No
2	Stapple Inserter, Extractor Set Complete	
	With 50 Assorted Sizes Stapleg	4
3	Manual Plaster Removal Set Complete	10 sets
	Each Set Should Contain	
	i. Cast Spreader Beeson 30cm	1No.
	ii. Model U.S.A.	1No.
	iii. Engle Plaster Swa	5Nos
	iv. Stille Plaster Shear 37 cm	1No
4	Manual Tourniquet Set	5 sets
	Should Consist of Following	
	i. Pump	1 No
	ii. Pressure regulator	1No
	iii. Small, Medium & large Sizes of Cuffs	(2 Each)

	N.B. Only Complete set should be quoted and Sample to be produced for evaluation	
	1 Deleted	
	General Orthopaedic Instruments - Set No.6	
	Specifications: Following items manufactured to international standards by reputed multinational firms	
	GENERAL INSTRUMENTS FOR ORTHOPADEIC SURGERY (LONG LASTING IMPORTED)	
	Specifications	
	1 SCISSORS	
	STANDARD SURGICAL SCISSOR BLUNT/BLUNT, STRAIGHT LENGTH 13 CM	10
	STANDARD SURGICAL SCISSOR BLUNT/BLUNT, STRAIGHT LENGTH 18.5 CM	10
	STANDARD SURGICAL SCISSOR BLUNT/BLUNT, CURVED LENGTH 13 CM	10
	STANDARD SURGICAL SCISSOR BLUNT/BLUNT, CURVED LENGTH 18.5 CM	10
	STANDARD SURGICAL SCISSOR SHARP/BLUNT STRAIGHT LENGTH 13 CM	10
	STANDARD SURGICAL SCISSOR SHARP/BLUNT STRAIGHT LENGTH 18.5 CM	10
	STANDARD SURGICAL SCISSOR SHARP/BLUNT, CURVED LENGTH 13 CM	10
	STANDARD SURGICAL SCISSOR SHARP/BLUNT, CURVED LENGTH 18.5 CM	10
	MAYO DISSECTING SCISSOR STRAIGHT LENGTH 14.5 CM	10
	MAYO DISSECTING SCISSOR STRAIGHT LENGTH 20 CM	10
	MAYO DISSECTING SCISSOR CURVED LENGTH 14.5 CM	10
	MAYO DISSECTING SCISSOR CURVED LENGTH 20 CM	10
	METZENBAUM DISSECTING SCISSOR BLUNT/BLUNT, STRAIGHT LENGTH 18 CM	10
	METZENBAUM DISSECTING SCISSOR BLUNT/BLUNT, STRAIGHT LENGTH 25 CM	10
	METZENBAUM DISSECTING SCISSOR BLUNT/BLUNT, CURVED LENGTH 18 CM	10
	METZENBAUM DISSECTING SCISSOR BLUNT/BLUNT, CURVED LENGTH 25 CM	10
	BEEBEE WIRE CUTTING SCISSOR BLUNT/BLUNT, STRAIGHT LENGTH 12 CM	10
	BEEBEE WIRE CUTTING SCISSOR BLUNT/BLUNT, CURVED LENGTH 12 CM	10
	LISTER BANDAGE AND PLASTER SHEAR SCISSOR LENGTH 20 CM	10
	BERGMANN BANDAGE AND PLASTER SHEAR. SCISSOR LENGTH 23 CM	10
	IRIS SCISSORS 11.5 CM STRAIGHT	10
	IRIS SCISSORS 11.5 CM CURVED	10
2	FORCEPS	
	USA STANDARD DRESSING FORCEPS LENGTH 14.5 CM	10
	USA STANDARD DRESSING FORCEPS LENGTH 20 CM	10
	ADSON DRESSING FORCEPS LENGTH 12 CM	10
	ADSON DRESSING FORCEPS LENGTH 15 CM	10
	TAYLOR DRESSING FORCEPS WITH DISSECTOR END LENGTH 17.5 CM	10
	TAYLOR DRESSING FORCEPS WITH DISSECTOR END LENGTH 18.5 CM	10
	BROPHY DRESSING FORCEPS STRAIGHT LENGTH 20 CM	10
	STANDARD TISSUE FORCEPS 1 X 2 TEETH LENGTH 14.5 CM	10
	STANDARD TISSUE FORCEPS 1 X 2 TEETH LENGTH 20 CM	10
	STANDARD TISSUE FORCEPS 1 X 2 TEETH MEDIUM WIDE LENGTH 14.5 CM	10
	STANDARD TISSUE FORCEPS 1 X 2 TEETH MEDIUM WIDE LENGTH 20 CM	10
	STANDARD TISSUE FORCEPS FINE 1 X2 TEETH LENGTH 14.5 CM	10
	STANDARD TISSUE FORCEPS FINE 1 X 2 TEETH LENGTH 20 CM	10

	USA STANDARD TISSUE FORCEPS 1 X 2 TEETH LENGTH 14.5 CM	10
	USA STANDARD TISSUE FORCEPS 1 X 2 'TEETH LENGTH 20 CM	10
	DEBAKEY ATRAUMATIC DISSECTING FORCEPS 1.5 MM STRAIGHT LENGTH 16 CM	10
	DEBAKEY ATRAUMATIC DISSECTING FORCEPS 1.5 MM STRAIGHT LENGTH 20 CM	10
	DEBAKEY ATRAUMATIC DISSECTING FORCEPS 2.7 MM STRAIGHT LENGTH 16 CM	10
	DEBAKEY ATRAUMATIC DISSECTING FORCEPS 2.7 MM STRAIGHT LENGTH 20 CM	10
	HALSTEAD - MOSQUITO FORCEPS STRAIGHT LENGTH 14 CM	100
	HALSTEAD - MOSQUITO FORCEPS CURVED LENGTH 14 CM	100
	HALSTEAD FORCEPS STRAIGHT LENGTH 21 CM	100
	HALSTEAD FORCEPS CURVED LENGTH 21 CM	100
	RANKIN - KELLY FORCEPS STRAIGHT LENGTH 16 CM	100
	RANKIN - KELLY FORCEPS CURVED LENGTH 16 CM	100
	NEGUS FORCEPS CURVED LENGTH 19 CM	100
	KOCHER (ROCHESTER- OCHSNER) FORCEPS 1 X 2 TEETH STRAIGHT LENGTH 18 CM	50
	KOCHER (ROCHESTER- OCHSNER) FORCEPS 1 X 2 TEETH STRAIGHT LENGTH 20 CM	50
	KOCHER (ROCHESTER- OCHSNER) FORCEPS 1 X 2 TEETH CURVED LENGTH 18 CM	50
	KOCHER (ROCHESTER- OCHSNER) FORCEPS 1 X 2 TEETH CURVED LENGTH 20 CM	50
1	NEEDLE HOLDERS	
	CRILE-WOOD NEEDLE HOLDER SERRATED P04, LENGTH 15 CM	20
	CRILE-WOOD NEEDLE HOLDER SERRATED P04, LENGTH 20 CM	20
	STRATTE NEEDLE HOLDER SERRATED P05, LENGTH 23 CM	20
	N.B. Only Complete set should be quoted and Sample to be produced for evaluation	
	[Deleted	

Arthroscopy System	
	Specifications for Arthroscopy System
	Bidder will be responsibale for installation and commissioning of complete high definition arthroscopy system in modular theatres.
	Arthroscopy set complete with high definition camera HD monitor 19"Scope, general instruments shaversystem ,ACL reconstruction set arthroscopy pump system .
	Arthroscopy shoulder surgery set and arthroscopic ankle surgery set imaging system
	High definition camera system
	1.camera console 220 v with universal coupler & autocalavable camera head.
	2.Pure Digital signal with high definition video (1920*1080p native resolution)
	3.Resolution -2000 horizontal lines
	4.Automatic settings
	5. integrated flexible scope filter
	6.signal to noise ratio-70 Db
	7.progressive scan technology both on camera head & console
	8.brightness control on console&camera head
	9.aperture control on console
	10.Automatic Image Enhancer on console
	11.Optical zoom, autofocus & white balance on camera head
	12.integrated gain/shutter/enhancement with brightness control
	13.Two peripheral control on cemera head
	Xenon light source
	light source xenon, 300 watts lamp
	colour temperature 6000 k,
	universal jaw for accepting any make fiber optic cable adjustable light intensity from 0 to 100 percent
	one spare xenon lamps 300 watt
	fiber optic cable
	high definition monitor 19"
	High Definition monitor, screen minimum 19", resolution 1920 x 1080p.
	option for wall mounting and desktop in same unit.
	Arthroscope Set
	HD telescope 4mm , 30 Deg connect Arthroscope Sheath 5.9mm. Obturator for sheath 5.9mm obturator for sheath HOOK probe .
	Straight punch, cutting width 15 deg upbiter 30 deg left cutting 30 deg right .
	Cutting 90 deg left cutting 90 deg right cutting foriegnbody grasper with lock .
	Shaver system
	Electronic control unit -1No. Foot control -1No. Handpiece Autoclave RPM 12000 – 1No. Microdriver with drilling, wiring and micro saw attachment – 1No. Full radius resector -2Nos. End cutter-2Nos. Aggressive cutter-2Nos. Meniscs cutter-2Nos. Oval Burr-2Nos.
	ACL Reconstruction Set
	Tendonstripper-open ended and closed ,all sizes
	Thickneess tester

	Tibial guide
	Femoral offset guide 4,5,6,7 mm
	Reamers 4,5,6,7,8,9,10
	Length guage for measuring the tunnel
	Reaming wire
	Currette
	Rasp
	Graft preparation board specifications
	Graft board with gliding sliders for easy and single handed operation
	Suitable for singal bundle , double bundled and bone tendon bone BTB repairs
	Compatible with endobutton type fixation devices.
	Built in seizers for the graft(both soft tissue and bone)
	Provisions for specific graft tensions
	Graft clamp teeth for secuing graft for tensioning during preparations
	Arthroscopoe pump system with Tubing
	Pole mount/stand alone console with autoclavable remote control
	Maximum flow rate of 2000 ml/minute with maximum pressure upto 150 mmHg
	Arthroscope Inflow/outflow tubing set
	High Definition Recording system
	Should be able to record Real time, Full HD(1920x1080p) digital video
	Stereo audio Input
	Disc Capacity of 500GB and recording system should be windows XP/ Higher base
	Touch screen(Min 10") Control panel interface
	Multi session disc recording capability supports file formats for images: Bitmap(BMP), JPEG, JPEG2K
	Video inputs minimum 2 nos S-video ,2 nos composite ,1 XGA(1024X768) and 1 High -Definition (1280X1024)
	Modular Cart(Imported) • front-locking casters • lipped top holds monitor • four equipment shelves • open back for equipment access
	The system should be European CE/ US FDA approved and all accessories should be from same manufacturer.
	Storege and instrument specifice autoclable boxes and cleaning instruments should be provided along with the machine

Pneumatic lithotripter	
Sl.No	**Technical Specification**
1	Light weight, compact and mobile.
2	Digitally controlled flow and pressure device generates highly accurate pulses in the form of single pulse operating mode and continuous pulse operating mode.
3	It should be able to control power to the hand piece for better stone fragmentation.
4	Design of master hand piece and digitally controlled flow should be in a way that provides minimum excursion and bilateral movement of the probe, so it gives safety to endoscope and avoid possible stone migrations.
5	No possibility of heat generation inside, hence; no chance of any thermal injury.
6	Pressure setting knob to set the desired pressure, which also facilitates constant monitoring of pressure by display.
7	Single and multiple mode operations.
8	In multiple modes, options available to change the frequency should be at least from 1 pulse/second to 12 pulses
9	Input Gas: Compressed Dry Air
10	In Let Pressure (Minimum) (To Control Unit) 4 Kg /cm2 & (Maximum) (To Control Unit) 6 Kg /cm2 12. Out Let Pressure: 0 - 5 Kg /cm2
11	Digital display Freq. of Impacts Single Pulse Mode, Continuous Pulse Mode with twelve selectable options.
12	**Control Unit (Made from rust free molded ABS plastic body), Hand Piece (Made from Aluminum Alloy, should be sealed and airtight), Probe (Made from S.S. Alloy)**
	Accessories and associated equipment
13	**Ureterenoscopy: Probe Size : 0.8mm, 1mm, 1.4mm Length : 600-610mm**
14	**Probe size 2-2.5mm, 3.0mm Length 425-450mm**
15	**Lithobridge Probe: 1.5mm Length 450 – 460mm**
16	Air Compressor
17	Trolly to be supplied along with equipment (metalic) ;one
	Deleted

BOQ			
S. No.	**Name of the item**	**Qty**	**UOM**
1	Lithotriptor (Para 1 to 12)	1 no.	Nos
2	**Ureterenoscopy: Probe Size : 0.8mm, 1mm, 1.4mm Length : 600-610mm**	5	**nos. each size**
3	Probe size 2-2.5mm, 3.0mm Length 425-450mm.	2	each
4	**Lithobridge Probe: 1.5mm Length 450 – 460mm**	5	**nos. each size**
5	Air compressor	1	Nos
6	Trolley	1	Nos

Extracorporeal Shock Wave Lithotriptor (E.S.W.L)	
Sl. No	**Technical Specification**
1	**Description of Function**
1.1	Renal extracorporeal lithotripter systems non invasively disintegrate kidney stones with focused shock waves, allowing the resulting sand-size fragments to pass out of the body during urination.
2	**Operational Requirements**
2.1	Completely integrated system with Fluoroscopy and Ultrasound guided stone localization and targeting along with digital documentation and patient data management system with data storage is required. The system should be compatible with available Hospital Information System.
3	**Technical Specifications**
3.1	Shockwave Generator:
a	Type: Electromagnetic
b	**Triggering: Manual and ECG gating.**
c	Pulse Frequency: = 60 – 120 per minute (User Selectable)
d	Penetration Depth minimum150 mm or more
e	Pressure at focus. Minimum 20 MPa or less, Maximum 50 MPa or more
f	Energy level: User Selectable & Variable
g	**The Shock wave Generator and coil should be guaranteed for minimum of 1.5 million shockwaves**
3.2	Imaging System: Integrated non detachable Fluoroscopy
a	Should have high frequency generator and allow pulse fluoroscopy.
b.	kV Range: 40-110 kV
c	mA Range: 4mA or more
d	Focal Spot Sizes: single: 0.3/0.6 or 0.6/1.2/1.5
e	Image Intensifier Size: 9 inches.
f	Collimation: Motorized, Iris collimator.
g	Post Exposure Image Enhancement facility.
3.3	Imaging System Ultrasound: High resolution ultrasound system
	Localization should be done through integrated Ultra-sound iso centric/linked to the shock wave source with inline/outline transducer for best image quality
	Transducer:
i)	3.5 /5 MHz Convex Sector
ii)	Coupling arm to integrate the ultrasound probe with shockwave generator.
3.4	Patient Table System:
i)	**Fluoroscopy compatible motorized patient Table with Vertical, Longitudinal and lateral movements. Patient load capacity of app 150 Kg**
ii)	**Deleted**
3.5	Fluoroscopic Imaging System: 17 inches LCD Display with data storage and image storage. Minimum storage would be 1000 images with 1024x1024x(12 bits)
3.6	Patient Monitoring: Monitoring of ECG, RESPIRATION, SpO2 and Arrhythmia.

3.7	Separate Remote Console with facility for:
i)	**Controlling imaging, stone localization, targeting and shockwave parameters**
ii)	Patient monitoring
4	Standards
4.1	Deleted
4.2	Should be compliant to ISO 13485: Quality systems - Medical devices - Particular requirements for the application of ISO 9001 applicable to manufacturers and service providers that perform their own design activities.
5	Site modification required for the installation of the complete system will be done by the supplier. Price to be quoted for 1000 square ft area **Added Para: Suitable online UPS should be supplied with 1hrs backup approx. 15KVA capacity - 1 no**

SN	BOQ	Qty	UOM
1	ESWL as specified	1	Nos
2	Coupling Jelly 100Litres	1	Nos
3	Laser printer with 5 catridges	1	Nos
4	Lead apron with thyroid shield	10	Nos
5	LED X ray display 2x6 ft or bigger	2	Nos
6	ECG Electrodes	100	Nos
7	Large register for record keeping	10	Nos
8	**Online UPS as per specification**	1	Nos

Urodynamic System	
Sl. No	Technical Specification
	URODYNAMIC MACHINE
1	The unit should be able to perform CMG, Pressure flow, EMG ,EMG with biofeedback, Video Urodynamics, Uroflowmetry (with one wired and one wireless uroflometer)
2	Radiolucent motorised chair to be provided capable of supine, sitting and standing position
3	Equipment should have 5-8 channels
4	Should display atleast 10-16 display channel.
5	Software for multiple Calibrations and multiple connections
6	Transducer should be reusable with automatic zero facility, pressure ranqe of (-40- 350cm) of H20).
7	Should be supplied with one wireless , one wired weight based Uroflow Transducer with flow ranqe of 0-50 ml/sec.
8	Volume range upto 1000ml. Must have auto record and auto zero facility for uroflowmeter.
9	**Should have infusion volume upto 1000ml & software based calibration control and have the ability to show infusion volume**
10	Deleted
11	Should be supplied with integrated travel cart to fit the complete UDS along with DC.
12	**All in one PC computer Windows 7 or more, i5 processor, at least 4 GB RAM, 1 TB HDD with color laser printer, should have facility for USB port**
13	**Provision for recording live videos during the procedure of urodynamic study. The system should have ability to show static images with corresponding Urodynamic Trace at that time point**
14	Should be supplied 19 inch flat screen monitor for display. Monitor should have facility of RGB output so that it can be projected on screen in conferences.
15	Leak point detector module to detect even small drops of urine leakage
16	Should have Bluetooth data transfer facility for CMG, Pressure flow and other Urodynamic studies.
17	Should have ICS nomogram, Siroky, Purr, Schaffter Nomograms and Paediatric Nomograms inbuilt in the software.
18	Should have inbuilt pump for infusion with filling rate of 1 ml/min - 100 ml/min with software controlled pump calibration with filling volume of 0-1500 ml.
19	Should be supplied with following :-

20	2 Lumen Catheter 8 Fr. - 50 pcs
21	**Rectal Catheter should be between 10-12 fr. -50 pcs.**
22	Pump Tube - 100 pcs.
23	Surface electrodes for EMG - 100 sets
24	Pressure transducers - 3 pcs.
25	Connection tubings - 100 pcs.
26	Should be compatible for Hospital Information system
27	The comprehensive warranty will be 5 years (including all spares and labor) from the date of satisfactory installation of equipment. Also quote rates for comprehensive CMC (including all spares and labor) for 6th to 10th year, after expiry of warranty period. Cost of spares, accessories and consumables should also be quoted separately.
28	95% uptime of the machine. Facility for good after sale & service with trained engineers posted at site. In case the down time exceeds 5 in a calendar year, the comprehensive warranty will be extended beyond 5 year for double the number of days for which the unit is non functioning. Similar clause will apply each year of CMC.
29	Should have automatic artifact recognition and compensation on flow transducer.

PCNL set	
Sl. No	Technical Specification
	Technical Specification:-
A	**Nephroscope with forceps and accessories 24- 27 fr-1No**
1	Wide-Angle straight forward viewing telescope **between** 0 to 30 deg, with parallel/Angled eyepiece, autoclavable , with instrument channel and fiber optic light transmission incorporated
2	Scope should have large field of view.
3	Scope should have large working channel that admits instrument of **10 Fr or more**
4	Operating sheath of size **24 - 27Fr** with locking mechanism compatible with above telescope
5	Working length of 220-250mm.
6	Should be supplied with
a	Hollow obturator to be used with rotatable sheath-1 no
b	Adaptor to be required to connect outer sheath of nephroscope to connect ellick evacuator or Tommey syringe-1.
c	PCNL biprong (clot removing) forceps (largest compatible with each nephroscope) – 2 nos
d	PCNL triprong forceps (largest compatible with each nephroscope) – 2 nos
e	PCNL alligator forceps (largest compatible with each nephroscope) – 3 nos
f	Sealing membranes, sealing cap-10 nos
g	Cleaning brush-2
h	Light guide adaptors so that the nephroscope can be connected to any existing branded light source of the hospital-1
i	All accessories supplied should be compatible with the supplied nephroscope and as a preference should be from the same company.
7	Deleted
B	**Nephroscope with forceps and accessories 20-24fr-One Nos**
1	Wide-Angle straight forward viewing telescope **between 0 to 30 deg** , with parallel/angled eyepiece, autoclavable, with instrument channel and fiber optic light transmission incorporated.
2	Scope should have large field of view
3	Scope should have large working channel 10Fr or more.
4	Operating sheath of size **20-24Fr** with locking mechanism compatible with above telescope
5	Working length of 220-250mm
6	Should be supplied with
a	Hollow obturator to be used with rotatable sheath for facilitating cystoscopy-1

b	Adaptor to be required to connect outer sheath of nephroscope to connect ellick evacuator or Tommey syringe-1
c	PCNL biprong (clot removing) forceps (largest compatible with each nephroscope) – 2 nos
d	PCNL triprong forceps (largest compatible with each nephroscope) – 2 nos
e	PCNL alligator forceps (largest compatible with each nephroscope) – 3 nos
f	Sealing membranes, sealing cap-10 nos
g	Cleaning brush-2
i	Light guide adaptors so that the nephroscope can be connected to any existing branded light source of the hospital-1
j	All accessories supplied should be compatible with the supplied nephroscope and as a preference should be from the same company.
7	Deleted
C	**Nephroscope with forceps and accessories 12fr- 01 No.**
1	Nephroscope should have a size of not more than 12 Fr.
2	**Deleted**
3	**Working channel should accommodate instruments of 5 Fr or more**
4	**The angle of view should be 12 degree or Less**
5	It should have an offset eye piece.
6	Scope should be supplied with non-fitting sheaths which should work as amplatz sheath as well.
a	Each sheath should have a compatible one step dilator.
b	Sheaths should have an option in length.
c	Sheaths along with one step dilators should be supplied of the following specification 15- 18 Fr - 2 nos
7	15 - 18 Ff sheath, dilators should have a central channel for guide wire and along with a distal curved channel for placing a safety guide wire along with a central main guide wire.- 02 Nos
8	It should be supplied with
a	5 Fr grasping forceps double action jaws-2 nos
b	5 Fr biopsy forceps double action jaws-1 no
c	**Deleted**
d	An applicator consisting of sheath and rod so as to use with haemostatic agents like floseal and surgiflow-1 no
9	Deleted
D	**Alken dilator set - 2 nos**
	The alken serial metal dilator set should include
1	Alken double barrel needle.
2	Rigid guide rod
3	Telescoping coaxial metal Dilators, entire set form 9Fr to 30 Fr.

4	1 1 Deleted
E	**Should be supplied with wire tray for storage and sterilization tray for sterilization for all PCNL set 26 Fr. 24Fr & 12 Fr(One Each)**
F	**Deleted**
Sn	**BOQ**
1	Nephroscope with forceps and accessories 24- 27 fr as per spec - 1 no
2	Nephroscope with forceps and accessories 20-24fr as per spec - 1no
3	Nephroscope with forceps and accessories 12fr as per spec- 01 No.
4	Alken dilator set - 2 nos
5	Wire tray for storage and sterilization tray for sterilization for all PCNL set - 1 each

Holmium Laser 100W			
Sl. No	Technical Specification		
1	It should be able to Enucleate, Vaporize and Resect circulated adenoma tissue in BPH treatment of any size.		
2	It should be able to fragment calculi of any size in the bladder, ureter or kidney and any impacted stone fragment.		
3	It should be able to do Stone Dusting.		
4	It should be able to ablate superficial bladder tumors, urethral & ureteral tumors.		
5	It should be able to treat invasive bladder carcinoma &condylomas and lesions of the external genitalia.		
6	It should have power output of 100watts or more **being delivered through multiple generator**		
7	It should be supplied with **twin/double** foot pedal		
8	It should have repetition rate of **5-50Hz** or more		
9	It should have Energy per Pulse of 0.5 Joules or less - **3.5 Joule**s or more		
10	It should have adjustable pulse width.		
11	It should have aiming beam of 5mW or less at 532nm - 650nm, adjustable intensity settings.		
12	It should have a Colour Display and should rotate at least 180 Degrees.		
13	**It should have effective cooling system.**		
14	It should be useable with 200-400 VAC 50Hz		
15	Deleted		
16	It should be supplied with following accessories:		
	i. 550 Micron Reusable, Flexible Fiber 10		
	ii. 365 Micron Reusable, Flexible Fiber 10		
	iii. Less than 300 micron Reusable, Flexible Fiber 10		
	iv. 550-600 Micron Side Fire Fiber for Ablation 10		
	v. 550 Micron Stripping and cleaving (set) 1		
	vi. 365 Micron Stripping and cleaving (set) 1		
	vii. Less than 300 Micron Stripping and cleaving (set) 1		
	viii. Fibre Inspection Scope 1		
	ix. Ceramic Scissors 1		
	x. Laser Safety Goggles 2		
	xi. Laser Safety Glasses 3		
	Added Para: Suitable online UPS should be supplied with 1hrs backup approx. 15KVA capacity"		
SN	BOQ	Qty	UOM
1	Holmium Laser 100W as per specification	1	No

2	550 Micron Reusable, Flexible Fiber	10	NOS
3	365 Micron Reusable, Flexible Fiber	10	NOS
4	Less than 300 micron Reusable, Flexible Fiber	10	NOS
5	550-600 Micron Side Fire Fiber for Ablation	10	NOS
6	550 Micron Stripping and cleaving (set)	1	set
7	365 Micron Stripping and cleaving (set)	1	set
8	Less than 300 Micron Stripping and cleaving (set)	1	set
9	Fibre Inspection Scope	1	No
10	Ceramic Scissors	1	No
11	Laser Safety Goggles	2	NOS
12	Laser Safety Glasses	3	NOS
13	Online UPS	1	No

Tissue Morcellator	
Sl. No	Technical Specification
A	The Tissue Morcellator should provide rapid endoscopic removal of soft tissue
B	Tissue Morcellator should include:
1	One control box,
2	One Regular hand piece
3	**Deleted**
4	Two blade sets:
a	Outer Blade –Outer dia 0.5cm or less, length 39cm or more
b	Inner Blade –Outer dia 0.39cm or less, length51cm or more
5	The Blades should be of rotating type/ Reciprocating type/Oscilating
6	Two pieces of sterile tubing
7	**It should have integrated tissue collection disposable kit. (20 No.s)**
8	**3 long cleaning brushes, 3 short cleaning brushes, and 3 endoscope adaptors as standard**
9	Laser Resectoscope Set which includes the following:
10	**4mm 30 degree HD telescope, autoclavable– 1**
11	**Cystoscope sheath between: 21 -22Fr - 1**
12	**Outer sheath(26-26.5 Fr) and inner sheath – 1 each**
13	LASER bridge – 2
14	LASER Working element – 1
15	Visual Obturator – 1
16	Ellik's evacuator – 1
17	Single Chamber Imported Tissue Evacuator – 1
18	Fibre Optic Cable – 1
19	Morcelloscope– 1
	Deleted
SN	**BOQ**
1	Tissue Morcellator as per specification - 1 No
2	Laser Resectoscope Set as per specification - 1 set

Digital **Flexible Ureteroscope**	
Sl. No	**Technical Specification**
SN	**Flexible Ureterorenoscope - 2 units**
1	**Outer diameter –at tip – 6-8 Fr**
2	Working channel 3 – 4 Fr. whole Unit should be water proof and fully immersible in solution.
3	It should adhere to sterilization method with ETO, FO gas, Steris & Starred.
4	Working length 660-700 mm.
5	Upward tip deflection 270^0 Downward tip deflection 270^0
	Deleted
6	Compatible Ureteral Access sheath with length of 35 cm and 45 cm – 5 each
7	Nitinol stone extractor with partially closed redesign the basket to provide the tight weave of 12 or 16 wire basket - 15 nos
8	**1.3 Fr- 1.7 Fr 115-120 cm long and 6mm -8 mm rotatable basket diameter nitinol stone extractor basket - 5 nos**
9	**1.3 Fr-1.7 Fr 115-120 cm long and 11mm rotatable basket diameter nitinol stone extractor basket - 5 nos**
10	**1.9 Fr-2.4 Fr 110-120 cm long Tipless basket diameter nitinol stone extractor basket - 5 nos**
11	**1.9 Fr-2.4 Fr 110-120 cm long Tipless basket nitinol stone extractor basket - 5 nos**
12	Hydrophilic Guide wire flexible on both ends - 20 nos
13	Water tightness tester, cleaning brush and case – Two Set
14	Deleted

Technical Specifications for Ureterorenoscope-Adult Set. (Semi Rigid Ureteroscope)

Specifications for URS (Large):
1. Uretero-Renoscope (Large)- QTY 1 pc

It should have the following features:

-Direction of View should be 5-12 degrees.

-Distal End Outer Diameter should be around 8.0-9.0 Fr.

-Working length should be around 400-450mm.
-Single /Dual working channel for both irrigation and instrument.

-Working channel diameter should be around 5-7 Fr.

-Autoclavable, Semi-Rigid type, angled eye piece, atraumatic tip design.

-2 lateral irrigation ports

-Built-in maintenance free stop cocks

It should be supplied with following items:
-Self- Sealing Cap- 10 no

-Autoclavable Instrument Tray- 1 no

2. Grasping Forceps for stone fragments, double action jaws, 3 Fr- 4Fr, Flexible/rigid, autoclavable, length 55-60 cm-1 pc
3. Grasping Forceps for large stone fragments, double action jaws, 5 Fr, Flexible/rigid, length 55-60 cm-1 pc

Stone therapy with laser, ultrasound, electro-hydraulic or ballistic lithotripsy should be feasible. Rigid auxiliary instruments should go through and be use through the straight instrument channel. Use of flexible auxiliary instruments or two different instruments such as laser fibre or electro hydraulic probe and stone extractor to stabilize and retrieve the stone fragments should be possible.

4. Accessories (for each scope):
-Instrument port with sealing system and quick release lock one channel -1
-Instrument port with sealing system and quick release lock two channel -1
-Seal (pkt of 10) for instrument port-1
-Luer lock tube connector-1
-Luer lock tube connector with stopcock-1

Specifications for URS (Small):

1. Uretero-Renoscope (Small)- QTY 1 pc
It should have the following features:

-Direction of View should be 5-7 degree.

-Distal End Outer diameter should be around 6-7 Fr.

-Working length should be around 400-450 mm.

-Working channel diameter should be around 4-5 Fr.

-Autoclavable, Semi-Rigid type, angled eye piece, atraumatic tip design.

-2 lateral irrigation ports

-Built-in maintenances free stop cocks

It should be supplied with following items:
-Self-Sealing Cap - 10 no
-Autoclavable Instrument Tray- 1 no

2. Grasping Forceps for stone fragments, double action jaws, 3 Fr – 4 Fr, Flexible/rigid, length 55-60 cm- 1 pc.

Stone therapy with laser, ultrasound, electro-hydraulic or ballistic lithotripsy should be feasible. Rigid auxiliary instruments should go through and be used through the straight instrument channel.

3. Accessories for each scope:
-Instrument port with sealing system and quick release lock one channel -1
-Instrument port with sealing system and quick release lock two channel -1
-Seal (pkt of 10) for instrument port-1
-Luer lock tube connector-1
-Luer lock tube connector with stopcock-1

PEDIATRIC CYSTOSCOPE / RESECTOSCOPE		
Sl.No	Technical Specification	
I	**Cystourethroscope for Neonates**	Qty
A).	**Telescopes:**	
1	Telescope (one each) Autoclavable 134 ° C / 273°F with enlarged image & brightness size 1.2- 1.9 mm, 0° Length 20 cm- 01No.	1 no.
2	Telescope (one each) Autoclavable 134 °C, 273oF With enlarged image and brightness, size 1.2 - 1.9 mm, 25° or 30°,Length 20 cm - 01No	1 no.
B).	**Sheath with obturator with fixed irrigation channel with stop cock**	
1	Size 7-8 Fr. (one each) for diagnostic use compatible with 0 ° telescope	1 no.
2	Size 8-9 Fr. (one each) with instrument port capacity 3Fr.	1 no.
3	Size 9-10 Fr. (one each) with instrument port capacity 5Fr.	1 no.
C).	**Electrode : (three each)**	
1	**Button electrode, flexible , uniploar , 530 mm length and 3 Fr. Size**	3 nos.
2	**Button electrode, flexible , uniploar , 530 mm length and 5 Fr. Size**	3 nos.
II	**Resectoscope - for Neonates**	
A.	Sheath with obturator with fixed irrigation channel with stopcock with distal end insulated Size 9 Fr. (one each) with instrument port capacity 3Fr.	1 no.
B.	Working element (bridge) with spring controlled thumb support and with monopolur cable attachment port and one port for telescope and one slot for working element- 01 Nos.	1 no.
C.	1.9 mm 0 ° telescope to match the Resectoscope and working element	1 no.
	1.9 mm 30 ° telescope to match the Resectoscope and working element	1 no.
	Accessories:	
d).	Electrodes	
1	Set of 6 hook electrodes – 2 Nos	2 nos.
2	**Cold Knife – set of 6 knife – 1 Nos** **Urethrotome sheath 8-10Fr - 1 no**	1 no.
e).	Forceps	
1)	Rigid/flexible grasping forceps: for Stent Removal Length 25-30 cm, size – 3Fr. (one)	1 no.
2)	Rigid/flexible grasping forceps: for Stent Removal Length not 25-30 cm, size – 5Fr. (one)	1 no.
3)	Biopsy forceps:	
	Flexible forceps: Length not <25 mm, size 3 Fr. (one)	1 no.
	Flexible forceps: Length not <25 mm, size 5 Fr.	1 no.
3)	**Cystouretheroscope for children**	
A	Telescope	
	Telescope - Autoclavable 134 °C/ 273 °F, with enlarged image and brightness Size 2.7 mm, 0° - 01No.	1 no.

	Telescope - Autoclavable 134 °C/ 273 °F, with enlarged image and brightness Size 2.7 mm, 30° - 01No.	1 no.
B	Sheath with obturator with fixed irrigation channel with stop cock	
1	Size 11 Fr. - for diagnostic use with 0° telescope	1 no.
2	Size 13 Fr. - with two instrument ports capacity	1 no.
4)	**Resectoscope - for Children**	
A.	**Sheath with obturater with fixed irrigation channel with stopcock with distal end insulated Size 11-13 Fr. with instrument port capacity 5 Fr**	1 no.
	Deleted	1 no.
B.	Adaptor (Bridge)	
	For examination without instrument port	1 no.
D.	Compatible working element with passive cutting action	1 no.
E.	Accessories	
a.	Electrodes	
1	Coagulating electrode for resectoscope with telescope of 2.7 mm, angled 90 ° retrograde, Hook electrode set of 6	1 set
2	Cold knife set of 2.7mm set of 6	1 set
3	All above equipment should be US-FDA orEuropean CE approve product.	

General Surgical Instrument set	
Sl. No	Technical Specification
A	**BLADDER SET** (One Each)
1	MAIER POLYPUS FORCEPS, WITH RATCHET, CVD
2	BACKHAUS TOWEL HOLDING FORCEPS, 110MM,
3	TOWEL CLAMP, 115 MM LENGTH
4	SCALPEL HANDLE, NO. 4
5	SCALPEL HANDLE, NO. 3
6	SCALPEL HANDLE NO. 4L
7	SCALPEL HANDLE NO. 3L
8	DISSECT.SCISS.,METZENBAUM,180,CVD.DUROTP
9	DUROTIP DISS.SCISS.,METZENBAUM,CVD.200MM
10	DUROTIP DISS.SCISS.,METZENBAUM,CVD.230MM
11	DUROTIP DISS.SCISS,NELSON-METZENBAUM,260
12	DUROTIP-LIGATURE SCISSORS, 180MM LONG
13	DUROTIP-LIGATURE SCISSORS, 230MM LONG
14	DUROTIP DISS.SCISS.,MAYO-LEXER,CVD,165MM
15	POTTS-SMITH, CARDIOVASC.SCISSORS,180 MM
16	DUROTIP SCISSORS,220MM,CVD.DOWNW.,60DEGR
17	OP. SCISSORS, STR., BL/SH, 145 MM, S
18	DISSECTING FORCEPS, SLEND. PATT., 145 MM
19	TISSUE FORCEPS, AM. PATT., 1X2 T., 145MM
20	TISSUE FORCEPS, 1X2 T.,200MM MEDIUM SIZE
21	TISSUE FORCEPS, 1X2 T.,250MM MEDIUM SIZE
22	FORCEPS, STRAIGHT, 2MM JAW, ATRAUM.150MM
23	FORCEPS, STRAIGHT, 2MM JAW, ATRAUM.200MM
24	FORCEPS, STRAIGHT, 2MM JAW, ATRAUM.240MM
25	GERALD BRAIN FORCEPS, 1X2 TEETH, 175 MM
26	KOCHER FORCEPS, STR., 1X2 TEETH, 140MM
27	HALSTED MOSQUITO FORCEPS, CURVED, 125MM
28	HALSTED FORCEPS, 1X2 TEETH, STR., 185CM
29	KOCHER HYSTERECTOMY FORCEPS STR., 200 MM
30	KOCHER HYSTERECTOMY FORCEPS STR., 240 MM
31	MAIER POLYPUS, SPONGE AND DRESS.FORCEPS
32	MIKULICZ PERITONEUM FORCEPS LARGE, 205MM
33	OVERHOLT-GEISSENDOERFER, DISS. FORCEPS
34	OVERHOLT-GEISSENDOERFER, DISS. FORCEPS
35	DISSECT.FORC.,OVERHOLT-GEISSENDOERFER
36	GEMINI DISS. AND LIGATURE FORCEPS, 230MM
37	GEMINI DISS. AND LIGATURE FORCEPS, 280MM

38	DESCHAMPS NEEDLE, BL, CVD TO LE, 215 MM
39	GUIDE PROBE,4,5MM BROAD, 195 MM
40	DUROGRIP CRILE-WOOD NEEDLE HOLDER,145MM
41	DUROGRIP HEGAR NEEDLE HOLDER, 205MM
42	DUROGRIP DE BAKEY NEEDLE HOLDER, 180 MM
43	DUROGRIP DE BAKEY NEEDLE HOLDER, 230 MM
44	DUROGRIP DE BAKEY NEEDLE HOLDER, 250 MM
45	STRATTE MEEDLEHOLDER, 230MM, DUROGRIP
46	ROUX RETRACTOR, DOUBLE-ENDED, SET OF 3
47	KOCHER RETRACTOR, 60X25 MM
48	VOLKMANN RETRACTOR, SEMI-SHARP,4-PRONGED
49	FRITSCH ABDOMINAL RETRACTOR, 75 MM WIDE
50	MIKULICZ ABDOMINAL RETRACTOR
51	MIKULICZ ABDOMINAL RETRACTOR
52	KELLY RETRACTOR
53	HABERER ADOMINAL SPATULA, MALLEAB., TAP.
54	LEGUEU BLADDER RETRACTOR, 260 MM
55	VAGINAL RETRAC., TUEBINGER PATT.,95X20MM
56	SIMON VAGINAL RETRACTOR, 115 X 26 MM,
57	KRISTELLER, VAGINAL SPEC. SET, 110X30 MM
58	CASPAR EXPLORATION HOOK, 7 MM
59	CUSHING VEIN- A. WOUND RETRACTOR,10X13MM
60	EMMET FISTULA HOOK, 220 MM
61	NON-TRAUMATIC OVUM FORCEPS,STR.,250 MM
62	NON-TRAUM.GRASPING FORCEPS,ALLIS, 220 MM
63	NON-TRAUM.GRASPING FORCEPS,ALLIS, 255 MM
64	STOCKMANN PENIS CLAMP ,70 MM
65	CHATETER GUIDE, CURVED ,490 MM
66	NON-TRAUM.URETHRAL-FORCEPS, 240 MM
67	PROBE WITH HANDLE, 30 CMS, 2,5 MM TIP
68	PROBE, DOUBLE ENDED, 300MM, OF TIN
69	INTERIOR BOX FOR BL 930
70	NEEDLE CASE, PERFOR., 7 COMP,150X90X10MM
71	LABORATORY DISH, 0.16 L
72	LABORATORY DISH, 0.4 L
73	KIDNEY TRAY, 250 MM
74	REDON SPIKE,CHAR.12,SLIG.CVD.,TRIANG.TIP
75	REDON SPIKE,CHAR.14,SLIG.CVD.,TRIANG.TIP
B	**KIDNEY SET** (TWO EACH)
1	MAIER POLYPUS FORCEPS, WITH RATCHET, CVD
2	BACKHAUS TOWEL HOLDING FORCEPS, 110MM, (6 Nos)

3	TOWEL CLAMP, 115 MM LENGTH (6 Nos)
4	SCALPEL HANDLE, NO. 4
5	SCALPEL HANDLE, NO. 3
6	SCALPEL HANDLE NO. 4L
7	SCALPEL HANDLE NO. 3L
8	DISSECT.SCISS.,METZENBAUM,180,CVD.DUROTP
9	DUROTIP DISS.SCISS.,METZENBAUM,CVD.200MM
10	DUROTIP DISS.SCISS.,METZENBAUM,CVD.230MM
11	DUROTIP DISS.SCISS,NELSON-METZENBAUM,260
12	DUROTIP-LIGATURE SCISSORS, 180MM LONG
13	DUROTIP-LIGATURE SCISSORS, 230MM LONG
14	DUROTIP DISS.SCISS.,MAYO-LEXER,CVD,165MM
15	POTTS-SMITH, CARDIOVASC.SCISSORS,180 MM
16	DUROTIP SCISSORS,220MM,CVD.DOWNW.,60DEGR
17	OP. SCISSORS, STR., BL/SH, 145 MM, S
18	DISSECTING FORCEPS, SLEND. PATT., 145 MM
19	TISSUE FORCEPS, AM. PATT., 1X2 T., 145MM
20	TISSUE FORCEPS, 1X2 T.,200MM MEDIUM SIZE
21	TISSUE FORCEPS, 1X2 T.,250MM MEDIUM SIZE
22	FORCEPS, STRAIGHT, 2MM JAW, ATRAUM.150MM
23	FORCEPS, STRAIGHT, 2MM JAW, ATRAUM.240MM
24	FORCEPS, STRAIGHT, 2MM JAW, ATRAUM.240MM
25	GERALD BRAIN FORCEPS, 1X2 TEETH, 175 MM
26	KOCHER FORCEPS, STR., 1X2 TEETH, 140MM (10 Nos)
27	HALSTED MOSQUITO FORCEPS, CURVED, 125MM (10 Nos)
28	HALSTED FORCEPS, 1X2 TEETH, STR., 185CM
29	KOCHER HYSTERECTOMY FORCEPS STR., 200 MM
30	KOCHER HYSTERECTOMY FORCEPS STR., 240 MM
31	MAIER POLYPUS, SPONGE AND DRESS.FORCEPS (4 Nos)
32	MIKULICZ PERITONEUM FORCEPS LARGE, 205MM (6 Nos)
33	OVERHOLT-GEISSENDOERFER, DISS. FORCEPS
34	OVERHOLT-GEISSENDOERFER, DISS. FORCEPS
35	MIXTER LIGATURE FORCEPS230MM
36	DISSECT.FORC.,OVERHOLT-GEISSENDOERFER
37	GEMINI DISS. AND LIGATURE FORCEPS, 230MM
38	DISSECTING FORCEPS, O'SHAUGNESSY,230 MM
39	DESCHAMPS NEEDLE, BL, CVD TO LE, 215 MM
40	GUIDE PROBE,4,5MM BROAD, 195 MM
41	DUROGRIP CRILE-WOOD NEEDLE HOLDER,145MM
42	DUROGRIP HEGAR NEEDLE HOLDER, 205MM
43	DUROGRIP DE BAKEY NEEDLE HOLDER, 180 MM

44	DUROGRIP DE BAKEY NEEDLE HOLDER, 230 MM
45	DUROGRIP DE BAKEY NEEDLE HOLDER, 250 MM
46	STRATTE MEEDLEHOLDER, 230MM, DUROGRIP
47	ROUX RETRACTOR, DOUBLE-ENDED, SET OF 3
48	VOLKMANN RETRACTOR, SEMI-SHARP,4-PRONGED
49	FRITSCH ABDOMINAL RETRACTOR, 75 MM WIDE
50	MIKULICZ ABDOMINAL RETRACTOR
51	MIKULICZ ABDOMINAL RETRACTOR
52	MIKULICZ ABDOMINAL RETRACTOR
53	HABERER ADOMINAL SPATULA, MALLEAB., TAP.
54	CASPAR EXPLORATION HOOK, 7 MM
55	CUSHING VEIN- A. WOUND RETRACTOR,10X13MM
56	NON-TRAUM.KIDNEY PED.CLAMP,GUYON, 240 MM
57	GUYDN ATRAUMATA KIDNEY CLAMP, 230 MM
58	DE'BAKEY VESSEL CLAMP, JAW 38MM,220 MM
59	DE'BAKEY VESSEL CLAMP, JAW 48MM,265 MM
60	DE'BAKEY VESSEL CLAMP, JAW 54MM,270 MM
61	DE BAKEY DISS. A. LIG. FORC., ACUT. CVD.
62	NON-TRAUMATIC OVUM FORCEPS,STR.,250 MM
63	NON-TRAUM.GRASPING FORCEPS,ALLIS, 220 MM
64	NON-TRAUM.GRASPING FORCEPS,ALLIS, 255 MM
65	RANDALL KIDNEY STONE FORCEPS small
66	RANDALL KIDNEY STONE FORCEPS Medium
67	RANDALL KIDNEY STONE FORCEPS Medium
68	RANDALL KIDNEY STONE FORCEPS Large
69	PROBE WITH HANDLE, 30 CMS, 2,5 MM TIP
70	BAKES COMMON BILE DUCT DILATOR, 2 MM
71	LUER GALL STONE SCOOP, 2,8 MM, SIZE 000
72	LUER GALL STONE SCOOP, 4,3 MM, FIG 0
73	PROBE, DOUBLE ENDED, 300MM, OF TIN
74	INTERIOR BOX FOR BL 930
75	NEEDLE CASE, PERFOR., 7 COMP,150X90X10MM
76	LABORATORY DISH, 0.16 L
77	LABORATORY DISH, 0.4 L
78	KIDNEY TRAY, 250 MM
79	REDON SPIKE,CHAR.12,SLIG.CVD.,TRIANG.TIP
80	REDON SPIKE,CHAR.14,SLIG.CVD.,TRIANG.TIP
C	**INSTRUMENTS FOR RADICAL PROSTATE SURGERY 1 each**
1	Mc Dongal Right Angle for Right Hand
2	YU Hoffgroo Retractor
3	Prostatic Retractor- (Nante's Tech)

4	Apical Retractor-(Nante's Tech)
5	Dorsal Venous Clamp-(Nante's Tech)
6	B P handle-Long and Curved-(Nante's Tech)
7	Right Angle-fine and long-(Nante's Tech)
8	Jemmy's Scissor-(Nante's Tech)
9	Lowley's Retractor-Curved
10	Lowley's Retractor-Straight
11	Suction-steel-curved
12	Lighted suction
13	Curved needle holder single curved
14	Curved needle holder double curved
15	3.5 x optical loupe
16	Head light with light source
17	300 watt Xenon Dual port light source
18	Balfour Retractor,self retaining with three blades(63x35mm) maximum spread 180mm-4 No.
19	Baby Satinsky clamp,18 cm,straight-4 No.
20	Equipment Trolley-2 no (one for storage of equipment and one for procedure)
D	**VASCULAR - SUPPLEMENT** (ONE EACH)
1	DE'BAKEY VESSEL CLAMP, JAW 48MM,265 MM
2	DE'BAKEY VESSEL CLAMP, JAW 54MM,270 MM
3	DE'BAKEY VESSEL CLAMP, JAW 58MM,270 MM
4	DE'BAKEY VESSEL CLAMP, JAW 75MM, 280 MM
5	GLOVER VESSEL CLAMP, 210 MM
6	DE BAKEY-GLOVER VASC ULAR FORCEPS, 240MM
7	DE BAKEY-GLOVER VASC. FORCEPS, 240MM
8	NON-TRAUM.MOSQUITO FORC.STR.6 1/2" DULL
9	NON-TRAUMATIC MOSQUITO FORCEPS,CVD 165MM
10	NON-TRAUM.FCPS.COOLEY,BRANCHES ANG,125MM
11	NON-TRAUM.FCPS., COOLEY, ANGLED, 120 MM
12	NON-TRAUM.FORC.COOLEY,DERRA-JAWS,115 MM
13	DUROGRIP DE BAKEY NEEDLE HOLDER, 305 MM
E	**URETHRA SET (ONE EACH)**
1	MAIER POLYPUS FORCEPS, WITH RATCHET, CVD
2	BACKHAUS TOWEL HOLDING FORCEPS, 110MM,
3	TOWEL CLAMP, 115 MM LENGTH
4	SCALPEL HANDLE, NO. 3
5	SCALPEL HANDLE, NO. 4
6	DISSECT.SCISS.,METZENBAUM,145MM,CVD.DURO
7	KILNER DISSECTING SCISSORS, 150 MM
8	POTTS-SMITH, CARDIOVASC.SCISSORS,180 MM

9	DISSECT.SCISS.,METZENBAUM,180,CVD.DUROTP
10	DUROTIP DISS.SCISS.,MAYO-LEXER,CVD,165MM
11	OP. SCISSORS, STR., BL/SH, 145 MM, S
12	DISSECTING FORCEPS, SLEND. PATT., 145 MM
13	TISSUE FORCEPS, AM. PATT., 1X2 T., 145MM
14	TISSUE FORCEPS, 1X2 T.,200MM MEDIUM SIZE
15	FORCEPS, STRAIGHT, 2MM JAW, ATRAUM.150MM
16	FORCEPS, STRAIGHT, 2MM JAW, ATRAUM.200MM
17	HALSTED MOSQUITO FORCEPS, CURVED, 125MM
18	KOCHER FORCEPS, STR., 1X2 TEETH, 140MM
19	BABY-MIXTER ARTERY FORCEPS,180MM
20	DUROGRIP CRILE NEEDLE HOLDER, 150 MM
21	DUROGRIP CRILE-WOOD NEEDLE HOLDER,145MM
22	DUROGRIP HEGAR-MAYO NEEDLE HOLDER, 205MM
23	RETRACTOR, FINE PATTERN, 2 SHARP PRONGS
24	DESMARRES, LID RETRACTOR, FOR CHILDREN
25	KOENIG VEIN- AND WOUND RETRACTOR, SMALL
26	KOCHER-LANGENBECK RETRACTOR, 25X6MM
27	FINE SKIN RETRACTOR GILLIES,180MM, SMALL
28	CUSHING NERVE HOOK, PROBE POINTED, SMALL
29	BABY-DERRA FORCEPS, LARGE PATTERN, 175MM
30	DITTEL URETHRAL BOUGIE, CURVED, CHAR. 10
31	DITTEL URETHRAL BOUGIE, CURVED, CHAR. 14
32	DITTEL URETHRAL BOUGIE, CURVED, CHAR. 18
33	DITTEL URETHRAL BOUGIE, CURVED, CHAR. 22
34	DITTEL URETHRAL BOUGIE, CURVED, CHAR. 26
35	NELATON DIRECTOR, CVD., 160 MM
36	PROBE, DOUBLE ENDED, 145 MM, DIAM. 1,5MM
37	BOWMAN LACHRYMAL PROBE, 0,7/0,8 MM
38	INTERIOR BOX FOR BL 930
39	LABORATORY DISH, 0.16 L
40	LABORATORY DISH, 0.4 L
41	KIDNEY TRAY, 250 MM
42	Turner Warwick Ring Retractor for urethroplasty with blades 1 set
43	Mastoid retractor Large size
44	Mastoid retractor Medium size
45	Periosteal elevator
46	Chissel and hammer
47	Bone gouge
48	Bone punch
F	**URETHRAL - MICRO - SUPPLEMENT (ONE EACH)**

1	SCALPEL HANDLE F.MICRO SURG.BLADES,200MM
2	MICRO SPRING SCISSORS,225MM,CVD.ON FLAT
3	MICRO FCPS.,BAJON.SHAPED,BROAD P.,220 MM
4	FORCEPSF.MICRO SURG.,BAY.SH.,1X2T.200MM
5	FORCEPS F. MICRO SURG.,SMOOTH JAWS,200MM
6	MICRO NEEDLEHOLDER CURVED 225 MM
7	JACOBSON BLOOD VESSEL PROBE, ANGL.,185MM
8	LIGATURE GUIDE,PROBE POINT.3/4 CVD,185MM
G	**GENITAL SET (TWO EACH)**
1	MAIER POLYPUS FORCEPS, WITH RATCHET, CVD
2	BACKHAUS TOWEL HOLDING FORCEPS, 110MM, (6 Nos)
3	TOWEL CLAMP, 115 MM LENGTH (3 Nos)
4	SCALPEL HANDLE, NO. 3
5	SCALPEL HANDLE, NO. 4
6	IRIS AND LIGATURE SCISSORS, CVD., 110 MM
7	DISSECT.SCISS.,METZENBAUM,145MM,CVD.DURO
8	DISSECT.SCISS.,METZENBAUM,180,CVD.DUROTP
9	DUROTIP DISS.SCISS.,MAYO-LEXER,CVD,165MM
10	OP. SCISSORS, STR., BL/SH, 145 MM, S
11	DISSECTING FORCEPS, SLEND. PATT., 145 MM
12	TISSUE FORCEPS, AM. PATT., 1X2 T., 145MM
13	TISSUE FORCEPS, 1X2 T.,200MM MEDIUM SIZE
14	FORCEPS, STRAIGHT, 2MM JAW, ATRAUM.150MM
15	FORCEPS, STRAIGHT, 2MM JAW, ATRAUM.200MM
16	KOCHER FORCEPS, STR., 1X2 TEETH, 140MM (4 Nos)
17	HALSTED FORCEPS, CURVED, 1X2 TEETH,125MM (6 Nos)
18	HALSTED MOSQUITO FORCEPS, CURVED, 125MM (6 Nos)
19	KOCHER HYSTERECTOMY FORCEPS STR., 200 MM
20	MAIER POLYPUS, SPONGE AND DRESS.FORCEPS
21	MIKULICZ PERITONEUM FORCEPS LARGE, 205MM
22	BABY-MIXTER FORCEPS, 140 MM
23	BABY-MIXTER ARTERY FORCEPS,180MM
24	OVERHOLT-GEISSENDOERFER, DISS. FORCEPS
25	OVERHOLT-GEISSENDOERFER, DISS. FORCEPS
26	DUROGRIP CRILE-WOOD NEEDLE HOLDER,145MM
27	DUROGRIP HEGAR-MAYO NEEDLE HOLDER, 205MM
28	DUROGRIP DE BAKEY NEEDLE HOLDER, 180 MM
29	ROUX RETRACTOR, DOUBLE-ENDED, SET OF 3
30	VOLKMANN RETRACTOR, SEMI-SHARP,4-PRONGED
31	MIKULICZ ABDOMINAL RETRACTOR
32	VAGINAL RETRAC., TUEBINGER PATT.,95X20MM

33	ABDOMINAL SPATULA, 30 MM WIDE
34	WEITLANER RETRACTOR, LT-RATCH.,3X4 SH PR
35	NON-TRAUM.HOLDING FORC.,ALLIS,155 MM
36	NELATON DIRECTOR, CVD., 160 MM
37	PROBE, DOUBLE ENDED, 145 MM, DIAM. 1,5MM
38	PROBE, DOUBLE ENDED, 200MM, DIAM. 2,0 MM
39	INTERIOR BOX FOR BL 930
40	NEEDLE CASE, PERFOR., 7 COMP,150X90X10MM
41	LABORATORY DISH, 0.16 L
42	LABORATORY DISH, 0.4 L
43	KIDNEY TRAY, 250 MM
44	HEGAR UTERINE DILATOR, SINGLE, 4 MM
45	HEGAR UTERINE DILATOR, SINGLE, 4,5 MM
46	HEGAR UTERINE DILATOR, SINGLE, 5 MM
47	HEGAR UTERINE DILATOR, SINGLE, 5,5 MM
48	HEGAR UTERINE DILATOR, SINGLE, 6 MM
49	HEGAR UTERINE DILATOR, SINGLE, 6,5 MM
50	HEGAR UTERINE DILATOR, SINGLE, 7 MM
51	HEGAR UTERINE DILATOR, SINGLE, 7,5 MM
52	HEGAR UTERINE DILATOR, SINGLE, 8 MM
53	HEGAR UTERINE DILATOR, SINGLE, 8,5 MM
54	HEGAR UTERINE DILATOR, SINGLE, 9 MM
55	HEGAR UTERINE DILATOR, SINGLE, 9,5 MM
56	HEGAR UTERINE DILATOR, SINGLE, 10 MM
57	HEGAR UTERINE DILATOR, SINGLE, 10,5 MM
58	HEGAR UTERINE DILATOR, SINGLE, 11 MM
59	HEGAR UTERINE DILATOR, SINGLE, 11,5 MM
60	HEGAR UTERINE DILATOR, SINGLE, 12 MM
61	HEGAR UTERINE DILATOR, SINGLE, 12,5 MM
62	HEGAR UTERINE DILATOR, SINGLE, 13 MM
63	HEGAR UTERINE DILATOR, SINGLE, 13,5 MM
64	HEGAR UTERINE DILATOR, SINGLE, 14 MM
65	HEGAR UTERINE DILATOR, SINGLE, 14,5 MM
66	HEGAR UTERINE DILATOR, SINGLE, 15 MM
67	HEGAR UTERINE DILATOR, SINGLE, 15,5 MM
68	HEGAR UTERINE DILATOR, SINGLE, 16 MM
69	HEGAR UTERINE DILATOR, SINGLE, 16,5 MM
70	HEGAR UTERINE DILATOR, SINGLE, 17 MM
71	HEGAR UTERINE DILATOR, SINGLE, 17,5 MM
72	HEGAR UTERINE DILATOR, SINGLE, 18 MM
73	HEGAR UTERINE DILATOR, SINGLE, 19 MM

74	HEGAR UTERINE DILATOR, SINGLE, 20 MM
75	MALE DILATOR SET- CLUTTON
76	MALE DILATOR SET- LISTER
H	**AUTOCLAVABLE INSTRUMENT BOX FOR STORAGE : 7 nos(one for each of the above set)**
I	All above instrument should be of high medical grade.
J	Deleted
K	Company name and catalogue number engraved on each instruments
L	Corrosion free surgical grade stainless steel (Stainless steel alloy of 350-450 grade)
M	Item Code and Manufacturer name should be LASER engraved on the instrument.
N	Instruments supplied should be 90% or more from the same manufacturer.
	Added para:
	Tolerance in dimension +/-10%

Uroflowmetry	
Sl. No	Technical Specification
1	Flow system should have weight based Uroflow Transducer.
2	**The Uroflowmetry sensor should be wired/Wireless to the main unit. The sensor should also be operable by wireless Bluetooth mode.**
3	Should have Database Software and Uroflow Software which includes extensive report printed by PC printer, possibility to add investigation comments and real time on line view of the investigation. Should have the facility of wireless transfer of data using Bluetooth Technology with automatic start. Automatic Investigation and Analysis.
4	The Flow Transducer should be mounted on height adjustable stand having funnel and urine container for flow transducer.
5	Should have a flow range of 0-50 ml/sec with volume range upto 0- 1000 ml and the Uroflowmeter should come with the height adjustable (Foldable) Micturition chair.
6	Should have auto-record and zero facility for Uroflowmeter.
7	Should have Auto Artifact Detection and deletion
8	**Beakers for Uroflow -5 Nos, Rechargeable Batteries 2set for each (Uroflo & Blader scan), Charger for Rechargeable Batteries 1set for each (Uroflo & Blader scan). Should be supplied as standard**
9	**Bladder Scanner(3D) – 1 units**
a	The Bladder scanner to Measure bladder volume measurement (PVR).
b	Ultrasound Probe Should have Volume range: 0 to 1000 ml.
c	Accuracy : +/- 10 % of reading, +/- 20 ml.
d	Should have Database Software for Bladder Scanner
10	Deleted
11	COMPUTER: Should be supplied as per the following configurations: 1 No.
	Windows Based, 1 TB Hard Disk, 4GB RAM, CD/DVD-RW, i7 Processor, 19" LCD Monitor and Color LaserJet Printer

SN	BOQ	Qty	UOM
1	Uroflowmetry system	1	Nos
2	Beakers for Uroflow	5	Nos
3	**Rechargeable Batteries (Uroflo & Blader scan)**	2	sets each
4	**Charger for Rechargeable Batteries (Uroflo & Blader scan)**	1	sets each
5	**Bladder Scanner(3D)**	1	Nos
6	Computer	1	Nos

Laparoscopic Set	
Sl.No	**Technical Specification**
1	**Telescope 10mm 30 degree**: 2 No. (Should have following specifications)
a	Completely distortion free.
b	HD Optics for better contrast & colour reproduction.
c	**Deleted**
d	Large field of view and depth of focus.
e	Autoclavable type and should be supplied with autoclavable tray.
f	**Deleted**
g	**Deleted**
h	**Deleted**
2	**Telescope 5 -5.5mm 30 degree: 1 No. (Should have following specifications)**
a	Completely distortion free.
b	HD Optics for better contrast & colour reproduction.
c	**Deleted**
d	Large field of view and depth of focus.
e	Autoclavable type and should be supplied with autoclavable tray.
3	**Telescope 10mm 0 degree**: 1 No. (Should have following specifications)
a	Completely distortion free.
b	HD Optics for better contrast & colour reproduction.
c	**Deleted**
d	Large field of view and depth of focus.
e	Autoclavable type and should be supplied with autoclavable tray.
4	**Laparoscopic Hand Instrument set: quantity mentioned in front of each article.All forceps/Hand Instruments should be 5-5.5 mm in size and length should be between 33-36cm (Should have the following specifications) .**
a	Atraumatic bowel Grasping Forceps, both jaw opening 5 x 330 mm, ratchet, non locking 2 no.
b	Insert only of atraumatic bowel Grasping Forceps, both jaw opening 5 x 330 mm, ratchet: 2 no.
c	Maryland Forceps, 5 x 330 mm, Monopolar 2 no.
d	Metzenbaum Scissors, 5 x 330 mm, Monopolar 2 no.
e	Insert only of Metzenbaum Scissors, 5 x 330 mm, Monopolar 2 no.
f	Hook Scissors, 5 x 330 mm, Monopolar 2 no
g	Monopolar HF-Cable 4 no
h	Straight Needle Holder, 5 x 330 mm 2 no
i	**Self-Alignment Needle Holder, 5-5.5 x 330-360 mm - 2 nos**
j	**Curved Needle Holder (one right and one left) - 5-5.5 x 330-360 mm - 2 nos**
k	**Suction/Irrigation Tube (trumpet) with tubing distal holes - 2 nos, 5-5.5 x 330-360 mm - 2 nos**
l	Non disposable Verses Needle, 120 mm 4 no
m	Fan retractor 5mm 2 no
n	Haem O'-lock clip endo-applier for large clips 10mm 2 no

o	Haem O'-lock clip endo-applier for extra large clips 10mm 1 no
p	Laparoscopic liga clip applicator 10mm 1 no
q	Laparoscopic Babcock 5mm 2no
r	Laparoscopic Babcock 10mm 1 no
s	Laparoscopic right angle dissecting forceps 5mm 2 no
t	Laparoscopic right angle dissecting forceps 10mm 2 no
u	Insert only of laparoscopic right angle dissecting forceps 5mm 2 no
v	Insert only of laparoscopic right angle dissecting forceps 10mm 2 no
w	Tray to accommodate all hand instruments 2 no
5	**Others**
a	**Trocar & Cannula(metallic) 5-6mm: 5no 11mm: 5no**
b	**Deleted**
c	**Laparoscopic extra peritoneal Hassan's port: 2**
6	**CAMERA CONTROL UNIT & CAMERA**
a.	High definition Endoscopic camera system should have following features:
b	Pure Digital HD technology with high definition video of 1920 x 1080p (min) native resolution.
c	**Should have progressive scan technology**
d	Consistent use of 16:9 format for input and output for HDTV function
e	**3 chip CCD /3 chip CMOS having hi-fidelity image transmission with digital conversion at camera head itself**
f	**The system should have digital zoom and integrated optical zoom with auto focus to enhance the quality of image size & cross speciality standardization of the camera system, regardless of the telescope used.**
g	System should be able to optimize all the settings and should be ready as soon as connected to camera control unit with automatic brightness control
h	Should be compatible for remote controlled operation of various features
i	**Image Sensor:3 x 1/3 Progressive scan CCD/CMOS Chip.**
j	AGC Microprocessor controlled
k	**Lens F14-30mm ± 10 %**
l	**Video Outputs HDTV-DVI-D/3GSDI/HDSDI**
m	**The Camera should be capable of directly recording full HD quality photos(1920x1080p) and full HD quality videos(1920x1080p) into an internal memory of 300 GB or more / into an external hard drive of 300GB or more. If not, a medical grade HD recorder capable of directly recording full HD quality photos(1920x1080p)and full HD quality videos(1920x1080p) with internal memory of 300GB or more /external hard drive of 300 GB or more must be supplied.**
n	Camera settings (e.g. white balance, zoom, gain, sharpness etc.) should be possible directly from the camera head buttons.
o	**Deleted**
7	**MONITOR**
a	One Wide Screen Monitor having the following features:
b	**26" full HD medical grade monitor in 16: 9/10 HDTV format, LED/LCD display**
c	Resolution: Minimum of 1920 x 1080 pixels

d	**SDI/HD-SDI**
e	All required cables and connectors, which should be specified
f	**TFT/LCD/LED screen stand/Fixtures for connecting to Pendant System/Ceiling Light Arm**
g	Dustproof and Drip water protected
8	**CO2 Electronic INSUFFLATOR - 2 no**
a	Fully automatic, electronically controlled gas fill
b	**Adjustable flow rate of 30 litres per minute or more and pressure range adjustable between 0 to 30 mm Hg**
c	Optical and acoustic warning signals in case of malfunction or excessive pressure with automatic release of over pressure by back flow
d	Selective connection to medical gas pipeline as well as direct connection to high pressure CO2 cylinder should be available
e	Control by keys on front panel
f	Clear and adjacent front display of actual and preset flow rate, actual and preset pressure, gas consumed
g	**Facility for preheating of gas to body temperature with either internal or external heating device**
h	Should have smoke evacuation available in the system or separate smoke evacuation system should be offered
i	Memory for retention of previous pressure settings
j	Should include pin-index connection to small/big gas cylinder with regulator, high pressure hose, mains cord, silicone autoclavable tubing set, universal wrench and gas filter
9	**LIGHT SOURCE (Xenon 300) with TWO Spare Bulbs**
a	Xenon cold light fountain with 300 watts xenon lamp
b	Colour temperature of at least 5800 °K
c	Manual and automatic adjustment of light intensity
d	Brightness control to be regulated manually or automatically via the output signal of a video camera
e	Lamp life 500 hrs or more
f	Display of lamp life/Bulb usage meter warning light
g	**Deleted**
h	The light source should comply with IEC 60601-1, belong to Class II a with CE mark
i	**Light Guide Cable**, Must be Autoclavable: 2 No. (Should have following specifications) : High Resistance protection tube,Reduced diameter with high fiber density,Small bending radius for comfortable use,3 mtr. Length
10	**SUCTION-IRRIGATION UNIT**
a	Controlled suction and irrigation unit with flow rate of at least 1l/min.
b	Irrigation pressure control between 0-400 mm Hg, preferably by roller pump
c	**Suction pressure control 0.6 bar or more.**
d	Control from control panel and/or foot pedal
e	**Deleted**
f	Overflow protection on suction bottles
g	Accessories should include silicone suction tubing set with reusable pressure domes, bacterial filter and suction bottles with cap (minimum 5 ltrs.)

11	**VIDEO-CART (same OEM)**
a	Made of Stainless Steel/Epoxy coated metal with minimum 4 shelves
b	Portable on 4 antistatic dual castors, 2 with locking brakes
c	Required number of shelves for housing all the units of the set
d	Preferable adjustable arm for fixation to either side for fixing the TFT monitor
e	**Deleted**
f	Cable Manager
g	Power box with concealed wiring for providing electrical connections of proper rating to all the units suitable for Indian plugs
12	**CARBON DIOXIDE CYLINDER**
a	**5-6kg cylinder 2 nos** **10-12 kg cylinder 2 nos**
12	Deleted
13	**Suitable online UPS 2kVA with 30min battery backup for the complete system should be supplied.**

SN	BOQ	Qty	UOM
1	Laproscpy Complete system as specified	1	Set
2	Online UPS	1	Nos

OT Table Electro Hydraulic	
Sl.No	Technical Specification
	Multipurpose electro hydraulic with manual override/electromechanical with electrical override/ powered with powered override mobile Table with divided leg section suitable for all major surgical procedures complete with 5cm mattress and corded handset
A	**General operating table features:**
1	Full-length radio-translucent top.
2	4 or 5 sections tabletop, which should be made of a special scratch resistant, handwearing and easy to clean material. Basc column cover to be made of 100% stainless steel alloy and stainless steel.
3	**Removable head and leg sections to suit different applications.**
4	100% Kidney Bridge position should be obtained without moving the patient, through remote Control by using extension/break function.
5	Battery powered, with facility for connection to mains electricity for immediate use. Battery Exhaustion protection and low battery warning via an audible, beep"/display indicator should be available.
6	Table should not have a thread/sharp edge for ensuring proper cleaning and user safety.
7	Mattress should be of high quality that spans tabletop break for improved patient support. Its depth should be 50mm. Mattress must be Latex free.
8	**The robust handset should offer controls namely Trend. /Reverse Trend, Lateral Tilt, Flexion/ Extension ,Height functions and slide. Auto levelling should be available**
9	**Brakes, 4Nos. Wheels and 5th wheel for 360° rotation.**
10	**Table should have a narrow and eccentric base allowing optimum access and greater stability.**
11	Table should have offset slim-line column, with S.S. inverted telescopic covers, for superior imaging and access.
12	It should have a stable construction with 4nos Wheels of the base with large twin-disk castors for easy motion and manoeuvring (base braking by locking the twin-disk castors at the head end via a central foot pedal/ Hand control)
13	The table top should not be fitted with transverse members casting shadows on the X-ray images except for the release brackets for adjustment on either side.
14	The Table should be operated by the following operating elements: corded hand control, Manual override panel with manual override facility or electrical override panel should be available in case of power failure.
B	**Electrical specification:**
1	Special-design, maintenance-free rechargeable batteries with capacity for about a week"s use in the operating room.
2	Recharging of the batteries and supply of the operating table by means of a mains cord
3	Nominal mains voltage (selectable) 220/230-240V AC via mains cord with inbuilt stabilizer
C	**Technical Data:**
1	Length : 2000-2100 mm

2	Width : 500-600mm without side rail
3	Minimum height (without mattress) : 600-700mm
4	Maximum height (without mattress): Minimum of 1000 mm
5	Maximum lateral tilt: 20-30 deg. (either side)
6	Trendelenburg: atleast 25deg
7	Reverse Trendelenburg : atleast 25deg
8	Head section adjustment : - atleast +/-30 degree
9	Leg section adjustment: +10 deg; to -90 deg
10	Break (extension) position : 200-220 deg
11	Break (flexion) position : 110-130 deg
12	Cranial & caudal traversing: atleast 200mm
13	Deleted
14	Maximum patient weight : 450 kg or more at centered column and 270 kg in all articulations
D	Accessories
1	Arm board with clamp-02 nos.
2	Body strap with clamp if applicable -3 nos.
3	Anesthesia screen with clamps- 2
4	Side supports with clamps – 2
5	Clamp, rotary- 4 pc
6	Clamp, circular - 4 pc
7	Accessories stand, mobile on castors- 1 pc
8	Arm support, perplex -2 pc
9	Clamp for locking X Ray cassette -1
10	Lithotomy leg holders "Geopel type" (adult and paediatric)-1set each
11	Deleted
E	The table should be US-FDA or European CE (with four digit notified body number) approved product
F	For electrical IEC 60101-1, medical/electrical equipment for safety, IEC 60601-2-46 for safety of OT tables and IEC 60601-1-2 for Electromagnetic compatibility

Sl No	BOQ	Qty	UOM
1	OT Table as specified	1	Nos
2	Arm board with clamp	2	Nos
3	Body strap with clamp if applicable	3	Nos
4	Anesthesia screen with clamps	2	Nos
5	Side supports with clamps	2	Nos
6	Clamp, rotary	4	Nos
7	Clamp, circular	4	Nos
8	Accessories stand, mobile on castors	1	Nos
9	Arm support, perplex	2	Nos
10	Clamp for locking X Ray cassette	1	Nos
11	Lithotomy leg holders "Geopel type" (adult and paediatric)	1	Set each

Heart lung machine with accessories (Advance Version) (Heart Lung Machine)	
Sl.No	Technical Specification
1	**Description of function**
1.1	Heart Lung Machine is an apparatus, through which blood is temporarily diverted, during
2	**Operational requirements**
2.1	**Basic equipment will consist of the following unit**
1	**5 pump console or 4 pump console with 5 pump heads**
2	Temperature Control Module (Hypo-Hyper thermia unit)
3	**Monitors:**
a	Pressure monitor – arterial and cardioplegia with transducers
b	Time – at least three timers
c	Temperature Monitor with at least two probes
d	Cardioplegia pump should have display of total volume of each infusion along with delivery
4	
a	Air- Oxygen Blender with hoses and Flow meter
b	Deleted
5	Safety Devices –
a	Level Sensor
b	**Ultrasonic Air Sensor**
2.2	Accessories will include
1	Stainless steel line clamps - 10 nos
2	Stainless steel intra cardiac suckers - 4 adult & 4 Pead
3	**Remote Control module for Temperature Control Monitor with instrument tray and**
3	**Technical Specification**
3.1	5- Pump Console
1	The unit should have 5 pump console compactly arranged with separate power supply and
2	Each individual roller pump should be capable of running independently at available voltage.
3	Should have a spill proof base.
4	The unit should be supplied with a Battery backup for at least two pumps, all safety systems
5	"Individual pump heads should have Harvey Roller pumps with facility for tubing to be used
6	Individual pump heads should have display in digital –The total infusion volume in litres and
7	Each Pump should have easy mechanism for occlusion setting for different thickness of tubes
8	Should have hand crank facility as a critical safety feature hand crank loading should be from
9	The Console should have a compact base mount for the entire pump heads together, with
10	"Should have variable, changeable tubing holders in each pump head: 1/4", 3/8", ½" and
11	Should have movable oxygenator holder
12	Roller pump should have a self diagnostic circuit with provision to detect and display critical
3.2	Should have a venous control module with single pole mast with electronic venous line
3.3	Should have a monitor mount with adjustable monitoring arm
3.4	Instrument tray positionable with long monitoring arm
3.5	Lightweight surface table; writing surface
3.6	**TEMPERATURE CONTROL MODULE:**
	Temperature Control and Monitor system with Cardioplegia Supply and remote temperature
1	Simultaneous delivery of water for arterial and cardioplegia heat exchangers and to thermal
2	To work with power supply of 220± 20 V 50 Hz.
3	Pressure regulated blanket ports maintaining the temperature of the arterial port.
4	Temperature display range of 0- 41 ° Celsius with high temp alram/cutoff feature; remote
5	Microprocessor based unit to control, cool, rewarm and maintain temperature.
6	Water outlet temperature of heat exchanger and blanket range 0-40° C.
7	Maximum flow performance of oxygenator heat exchanger supply port 15 – 22 LPM for fast

8	Deleted
9	Should be capable of providing ice water for cardioplegia independently with variable
10	Rewarming facility with venous difference mode settable at 6 to 10 ° C gradients to hold
11	Temperature probe module for the operating ranges of 0-40° C.
12	Temperature probes to fit in standard oxygenators (bubble / membrane)
13	**Remote control unit should be capable of taking 3 Temp. Probes and display temperature**
3.7	**Monitors:**
	PRESSURE MONITOR: Facility to monitor one arterial line pressure and one cardioplegia line
	TEMPERATURE: 4 temperature displays for patient monitoring and for cardioplegia
3.8	**Air-Oxygen Blender:**
	To work at 50-60 PSI for membrane oxygenator with water trap attached with necessary
3.9	Sevoflurane Vapourizer - 1 no
3.10	Safety Devices: Safety monitor should have optional capability for computer interface to
	ULTRASONIC AIR SENSOR: Ultra sonic air sensor to detect bubbles to work equally well with
	LEVEL SENSOR SYSTEM: Ultrasonic transducers to work well with crystalloid and blood with
3.11	**Accessories:**
1	STAINLESS STEEL LINE CLAMPS for cardio pulmonary bypass 12 Nos.
2	REMOTE CONTROL MODULE FOR THE TEMPERATURE CONTROL MONITOR Optional remote
3	Instrument Tray with Mounting Arm
4	Two Thermal Blanket.
5	**Compatible Co2 Blender should be supplied as standard**
6	Deleted
4	**System Configuration Accessories, spares and consumables**
4.1	Remote Control module for Temperature Control Monitor
4.2	Machine cover
4.3	System should be provided with appropriate furniture like adjustable revolving chair for the
5	**Standards, safety and training**

Deleted

Sl No	BOQ	QTY	UOM
1	Heart Lung machine as specified	1	Nos.
2	Stainless steel line clamps	10	Nos.
3	Stainless steel intra cardiac suckers (adult & Pead)	4	Nos. each
4	Remote Control module for Temperature Control Monitor	1	Nos.
5	Instrument Tray with Mounting Arm	1	Nos.
6	Thermal Blanket.	2	Nos.
7	Deleted		
8	Sevoflurane Vapourizer	1	Nos.
9	Deleted		

Electric operated sternum saw system (Sternal Saw)			
SN	Technical Specification		
1	**Driving Unit** Completely enclosed Motor 220V / 5 amp AC/DC with MCB Supported on a Mobile Folding Stand (Stainless Steel tubes & M.S. square bars, with castors). Should include a Foot Control, (Stainless Steel Body) with step-less speed control & ON / OFF switch with fuse.		
2	**Reciprocating Saw Pistol Grip Hand piece (Autoclavable)** a.Reciprocating Type Blades b.Weight 850 gms. Approx. c.Set of 30 blades (hardened & tempered high quality stainless steel)		
3	**Resternotomy Saw Hand Piece (RD)(Autoclavable)** A.Oscillating blade type B.Sector type blade. C.Weight approx. 750 gms. D.Should be supplied 20 blades		
4	**Flexible Shaft (Autoclavable).** A.Length 2 mtrs. B.Weight approx. 1000 gms. C.Push-Pull type ends. D.Spring loaded.		
5	Company should be ISO 9001, 13485		
6	Deleted		

S. No.	BOQ	Qty	UOM
1	Driving Unit	1	Nos.
2	Reciprocating Saw Pistol Grip Hand piece (Autoclavable)	1	Nos.
3	Resternotomy Saw Hand Piece (RD)(Autoclavable)	1	Nos.
4	Flexible Shaft (Autoclavable)	2	Nos.
5	Re DO saw blade	20	Nos.
6	Reciprocating Type Blades	30	Nos.
7	Autoclaving Box for hand pieces and shaft	2	Nos.

Instrument Set for Cardio-Vascular & Thoracic Surgery- Low End
(Surgical Intruments sets for Various Procedure)

Sl.No	Technical Specification
1	**CASTROVIEJO NEEDLE HOLDER**
	MICRO NEEDLE HOLDER Round Handle with rachet, enhanced needle. Grip surface, DIAMOND DUST regular box lock. Soft pressure spring handle very delicate jaws, all edges carefully rounded in order to avoid damage of even the finest needles and sutures.
a)	Length 180 mm / 7", 1.2 mm x 11 mm straight tip for suture 5-0 and smaller - 2
b)	Length 180mm / 7", 0.4 mm x 11 mm straight jaw for suture 8-0 and smaller -1
c)	Length 180mm / 7", 0.8 mm x 11 mm straight jaw for suture 6-0 and smaller -2
d)	Length 180mm / 7", 0.6 mm x 11 mm straight jaw for suture 7-0 and smaller -1
e)	Length 210mm / 8 1/4", 0.4 mm x 11 mm straight jaw for suture 8-0 and smaller 1
f)	Length 210mm / 8 1/4", 0.6 mm x 11 mm straight jaw for suture 7-0 and smaller 1
2	**RYDER NEEDLE HOLDER Intra Cardiac stainless steel TUNGSTEN CARBIDE / DIAMOND DUST, Ring Handle.**
a)	Length 21 cm / 8", Round Tip 1.9 mm jaw – 2
3	**MINI RYDER with round jaw of 1.4 mm, with TC tip**
a)	Length 15 cm / 6" – 2 nos.
4	**BOZEMANN FINNOCHIETTO Needle Holder with TC inserts gentle smooth curve at the shaft and curve at the tip**
a)	Length 24 cm -1
b)	Length 30cm -1
5	**CRILE – WOOD Needle Holder with box joint**
a)	Length 15 cm / 6" – 3Nos.
6	**MAYO HAGGER Needle Holder**
a)	Length 20 cm / 8" – 3 Nos.
7	**HEAVY BARRY WIRE TWISTER with TC inserts**
a)	Length 20 cm -2 no.
b)	Length 17cm -2 no.
8	**RUBIO MINI WIRE TWISTER with TC inserts**
a)	Length 13 cm / 5" – 1
9	**Sternal Wire Cutter Pliers**
a)	Length 21 cm – 1
b)	Length 17.5cm - 2
	TISSUE FORCEPS
10	**RING TIP TITANIUM MICRO TISSUE FORCEP, Sapphire / Enhanced needle grip Surface, round handle ring smooth.**
a)	Length 180mm / 7" – 0.5 x 1 mm – 1 No.
b)	Length 180mm/ 7" – 0.5 x 1 -1.3 x 2 mm – 1 No.
c)	Length 210mm - 0.5 x 1 mm – 1No.
	Delicate Tissue Forceps –
11	**DEBAKEY – GERALD – Atraumatic Tissue Forceps Titanium (2 each)**

a)	Length 15 cm / 6" Jaw 1.5 mm
b)	Length 18 cm / 7" Jaw 1.5 mm
c)	Length 24cm Jaw 1.5mm
12	DE- BAKEY – ADSON, Atraumatic tissue Forceps
a)	Length 12.5 cm / 4 1/2" Jaw 1.5 mm - 1 No
13	DEBAKEY, angled, Atraumatic tissue Forceps
a)	Length 19.5 cm / 7 1/2" Jaw 1.5 mm - 2 No
b)	Length 19.5 cm / 7 1/2" Jaw 2.0 mm - 1 no
14	Dressing forceps Pott-smith with TC
a)	23cm -3 No. &
b)	18cm- 3Nos.
15	ADSON TC SMOOTH 1 each
a)	Length 12.0 / 4 ½"
b)	Adson TC Standard Length 15.0 cm /6"
16	SPRING POTTS MICRO SCISSORS,ultra fine nano blade Radialis Round Handle – 1each
a)	Length 180 mmm/ 7" 45 deg nano blade
b)	Length 180 mmm/ 7" 60 deg nano blade
c)	Length 180 mmm/ 7" 90 deg nano blade
d)	Length 180 mmm/ 7" 125 deg nano blade
17	METZENBAUM SCISSORS , ring handle extra light curve edge ultra edge for ultimate cutting performance .Gold plate sank
a)	Length 180 mm /7" – 2Nos.
18	METZENBAUM SCISSORS , Straight, ring handle extra light curve edge ultra sharp edge for ultimate cutting performance TC inserts with micro serration
a)	Length 180 mm – 1 No.
b)	Length 200 mm -1 No.
19	BABY METZENBAUM SCISSORS ring handle extra light curve super cut ultra sharp edge for ultimate cutting peformance TC inserts with micro serration
a)	Length 12 cm Str. -1 No.
b)	Length 12cm CVD – 1No.
20	METZENBAUM FINO TC scissors curved – 1each
a)	Length 14 cm /5 ½"
b)	Length 18 cm /7"
c)	Length 20 cm /8 "
21	METZENBAUM FINO TC scissors pointed – 1 No.
a)	Length 18 cm /7 "
22	IRISH SCISSORS straight
a)	Length 11.5 cm /4 ½" – 1No.
23	IRISH SCISSORS Curved
a)	Length 11.5 cm /4 ½ - 1 No.
24	HOHENFELLNER Valve cutting scissors – 1each
a)	Length 21 cm /8 ½"
b)	Length 24 cm /9 ½"
25	NELSON METZENBAUM SCISSORS WITH tc EDGES CURVED – 1 each
a)	Length 18 cm / 7"
b)	Length 23 cm /9 "
26	ATRAUMATIC VASCULAR CLAMP COOLEY – BECK vessel clamp – 1each

a)	Length 15 cm /6"
b)	Length 15.5 cm /6"
27	**COOLEY MULTIPURPOSE CLAMP – 1each**
a)	Length 14.5 cm /5 ½" ,90 deg
b)	Length 16 cm /6 1/4", 60 deg
c)	Length 20.5 cm /8"
28	**Cooley-Derra ANASTOMOSIS VASCULAR CLAMP – 1each**
a)	Length 16.5 cm /6 ½"
b)	Length 17 cm /6 ½"
29	**COOLLEY PEDIATRICS ATRAUMATIC VASCULAR CLAMP**
a)	Length 14 cm – 1 No.
30	**COOLEY ILIAC CLAMP**
a)	Length 24 cm- 1No.
31	**COOLEY AURICULAR APPENDIX CLAMP**
a)	Length 25 cm – 1No.
32	**Debakey TANGENTIAL OCCLUSION CLAMP – 1each**
a)	Length 197mm – jaw working length -45mm and depth 12mm
b)	Length 265 mm – jaw working length -65mm and depth 18mm
33	**Debakey Ring handle bulldog clamp – Straight shank with jaw working length 45mm – 2each**
a)	Straight 130mm
b)	Cuved 130mm
c)	Angled 45deg 130mm
d)	Angled 45deg 100mm
34	**Cooley Aoarta clamp – 1 each**
a)	10 ½" jaw working length – 2 ½" & depth ½"
b)	10" jaw working length –3" & depth ¼"
35	**Castanoda Neonatal Minature Clamp - 1each**
a)	length 11cm/ 41/4 "
b)	Length 12cm/ 4 ½"
36	**Debakey morris atraumatic vascular clamp – 1each**
a)	length 25cm/10"
b)	length 26.5cm/10 1/2"
c)	length 22cm/8 1/2"
d)	length 18cm/7"
37	**Tube occluding forceps with safety guard for CPB – 10 each**
a)	length 15cm/6"
b)	length 20cm/8"
38	**Aortic vascular punch of sizes – 1 each**
a)	4mm
b)	5mm
c)	3.5mm
39	**Line organizer for ciruit for cardiopulmonary bypass with slots to fit the tubings of size ¼" (one slot), 3/8" (two slots), ½" (four slots) – 2 Nos.**
40	**Cooley atrial retractor rigid – 1each**
a)	21.5 cm
b)	23 cm
c)	27 cm

	41	IMA retractor (sterna retractor for harvesting internal mammary artery – 1No.
	42	Cushing nerve hooks 19cm / 7 ½" – 1No.
	43	Crile nerve hooks 14.5cm/ 5 ½" – 1 No.
	44	Desmarves retractors sizes stainless steel – 1each
a)		13cm/5" width 8mm
b)		13cm/5" width 10mm
c)		13cm/5" width 12mm
d)		13cm/5" width 14mm
	45	Epicardial fat retractor for CABG small & medium – 1 each
	46	Cooley ligature carriers size, stainless steel 17cm/ 6 ¾" – 1No.
	47	Debakey adson-suction tubes, stainless steel (dedicate 4mm suction tube for coronary surgery with 5mm basket with 4 sides openings at the distal tip. Tip permanently attaches) – 2 Nos.
	48	Andrew-pynchon suction tubes stainless steel – distal tip 8mm, shaft 4mmx24cm – 2Nos.
	49	Baby-Yankauer suction stainless steel – 8mm distal tip, shaft 5mm with 21cm length – 2Nos.
	50	Yankauer suction – distal tip 10mm, shaft 6mm and distal tip is detachable length 29.5cm – 6 Nos.
	51	Morse Sternal retractor –double blade Aluminium
a)		Adult – maximum spread 200mm, length – 150mm, 40x20mm blade
b)		Pediatric - maximum spread 150mm, length – 120mm, 12x20mm blade
	52	Borford Rib & Sternal retractor – single blade with two pairs of detachable blade
		65mm & 45mm blade, maximum spread 190 - 220mm – 1No.
	53	Fino-Chietto rib & sternal retractor Aluminium – 1 no. each
a)		Infant- maximum spread 70mm, length – 55mm
b)		Children- maximum spread 100mm, length – 75mm
	54	Beck's aortic clamp –straigth shanks jaw working length 40mm , depth 10mm – 1each
a)		8"
b)		81/2"
	55	Titanium clip applying forceps – 2each
a)		For small clip – 19.5cm (length)
b)		For Medium clip – 19.5cm(length)
c)		For Large clip – 20.5cm(length)
	56	Rumel-belmont torniquet – 1 No.
	57	Debakey's vascular dilator – 1each
a)		0.5mm
b)		1.0mm
c)		1.5 mm
d)		2.0mm
e)		2.5mm
f)		3.0mm
	58	58. Langenbeck's retractors -2 each
a)		10x40mm- 21cm(length)
b)		10x28 mm– 21cm(length)
	59	Langenbeck's kocher's retractor 20x30mm, 21cm (length) – 1No.
	60	Allison Lungs spatula – 1 each

a)	27cm (length) & 40mm blade
b)	32cm(length) & 65mm blade
c)	26cm (length) & 132mm blade
61	**Weitlaners self retaining retractor**
a)	16.5cm – 2No.
b)	20cm -2Nos.
c)	16.5cm – 2No. Breakable
62	Lambotte rasporatories sharp light curve 10mm tip & 21cm length – 1No.
63	Doyen's rasporatories 17cm – 1No.
64	Lekself bone cutting rongeur light curved handle – 23cm (length) – 1No.
65	Ruskin-Iston bone cutting forceps – 18cm(length) – 1No.
66	Giertz rib shear 25cm -1 No.
67	Bailey rib spreader 17cm – 1No.
68	Tubb's mitral valve dilator – max. blade opening 45mm, working length – 200mm – 1No.
69	Bailey aortic valve rongeur – 31mx7.8mm jaw, working length – 4 ½" – 1No.
70	Mills endarterectomy spatula – 7" with 1.5mm blade – 1No.
71	Carwford – cooley graft tunneler, light curve, length 18" & internal dia 10mm - 1No.
72	Diethrich (straight) bull dog clamp 5cm- closing pressure 50g, weigth 3g – 2 each
73	Diethrich (Curved) bull dog clamp 5cm- closing pressure 50g, weigth 3g – 2 each
74	Mixter baby forceps 14cm & 19cm – 1each
75	Mixter forceps 22cm fully cvd, fine point surgical right angled jaw – 1 No.
76	Price Thomas brochus clamp 22cm – 1No. Each for Right & Left
77	Instrument Tray with silicone mat 280x170x55mm: For careful sterilization and storage of fine and delicate instruments, for example microsurgery instruments & fine hooks. May be sterilized and stored together with the instruments in sterilizing container, autoclavable upto 134 deg C, low weight, simple and secure locking system and stackable – 5 Nos.
78	Instrument Tray with silicone mat 590x290x150mm: For careful sterilization and storage of instruments. May be sterilized and stored together with the instruments in sterilizing container, autoclavable upto 134 deg C, low weight, simple and secure locking system and stackable – 7 Nos.
79	Cardiac tissue stabilizer with enhanced stability and flexibility (disposable with sternal spreader) – 2 No.
a.	automatic pod spread for effective visualization of anastomotic site.
b.	very secure arm for maximum stabilization
c.	Greater flexibility with unlimited positioning options with 360deg movement
d.	simple, secure one handed attachment of the clamp to the retractor
e.	Dual vacuum tubes for superior tissue capture, whale tail easily tightening facility

f.	Head-lock design for toes up position, pod spread and bend
g.	Rigid clamp to eliminate rocking
h.	Reduced handling profile to improve visibility of surgical site
80	Cardiac apex vacuum stabiliser/positioner - 2nos
	Note:
	Bidder should quote all the instruments specified above
	Instuments should be of high quality and standard
	Deleted
i	All instruments should be highly heat and corrosion resistant.
ii	Manufacturer name and port number should be mentioned on each and every instrument
iii	All instruments should be matt finish or non reflective
iii	Bidder has to provide the demonstartion of the item

IABP (Intra Aortic Balloon Pump) IABP Machine)	
Sl.No	Technical Specification
1	**Description of Function**
1.1	Intra-aortic balloon pump (IABP) is a mechanical device that is used to decrease
2	**Operational Requirements**
2.1	Microprocessor / microcontroller based system. System should be complete with Display
3	**Technical Specifications**
3.1	Pneumatics: Drive system: **Dual head reciprocating compressor or stepper motor**
3.2	In Automatic Mode: System should be capable of automatically selecting appropriate
3.3	Should be able to trigger on 7 mm Hg of Pulse pressure when used in Pressure Trigger
3.4	Single key start-up to make it fast, user friendly and easy to use
3.5	Should be able to display at least 3 wave forms as ECG, Invasive Pressure and Balloon
3.6	Large display for brighter and very good visibility from a distance in lighting conditions
3.7	On screen indication for Helium level in the cylinder and battery level for timely
3.8	ECG inflation marker to indicate inflation period on ECG which can be useful when
3.9	On screen indication of standby time and should give alarm after 15-30 minutes, to draw
3.10	Optical Blood leak detect for early indication of blood coming into the balloon lumen due
3.11	Should have extensive Help Text available during start-up to make the system easy to
3.12	Should give extensive Help messages to correct the alarm conditions that are specific to
3.13	Should be capable of removing condensation automatically without user intervention
3.14	Should have Peripheral Vascular Doppler for detecting limb ischemia, which is attached
3.15	Should have automatic Altitude correction to make it safer for the use during Air
3.16	Should have software which allows the user to monitor the IABP from any remote
3.17	In-built Comprehensive Service Diagnostics to help the technician to locate the fault
3.18	Should have capability to connect on the Hospital network
3.19	Integrated Printer OR Chart recorder to print the reports.
3.20	**Added para:**
4	**System Configuration Accessories, spares and consumables**
4.1	System as specified-
4.2	System should be supplied with the following: ECG cable and Refillable Helium cylinder
4.3	Intra Aortic Balloon Catheter for Adults, Size: 34cc - Qty: 3 Nos, Size: 40cc - Qty: 7 Nos.
4.4	Invasive Blood pressure transducer system with **pressure flush device system - 10Nos**
5	**Power Supply**
5.1	Power input to be 220 V AC, 50Hz fitted with Indian plug
5.2	Should have inbuilt battery backup of minimum 3hrs
7	**Standards, Safety and Training**
7.1	Deleted

Sl No	BOQ	QTY	UOM
1	IABP System, as specified	1	Nos.
2	ECG cable	3	Nos.
3	Refillable Helium cylinder compatible with the IABP system	3	Nos.
4	Intra Aortic Balloon Catheter for Adults, Size: 34cc	3	Nos.
5	Intra Aortic Balloon Catheter for Adults Size: 40cc	7	Nos.
6	Invasive Blood pressure transducer system with pressure flush device system	10	Nos.
7	Transducer stand		Nos.

ACT Machine			
Sl.No	Technical Specification		
1	**Description of Function**		
1.1	Activated Clotting Time (ACT) is a measure of the anticoagulation effects of heparin. The main use of this diagnostic test is in cardiac catheterization labs and open heart and vascular surgery, where they need to keep track and have specific measures of clotting times.		
2	**Operational Requirements**		
2.1	One button operation, easy to use		
2.2	Portable system		
3	**Technical Specifications**		
3.1	ACT machine having at least two test well		
3.2	The equipment should have 2 channel for measuring the individual clotting time and average difference for the two channels with the help of 2 channel test cattridge		
3.3	Parameters- ACT (Mandatory) APTT & PT (Optional).		
3.4	Shall use fresh blood at the bedside.		
3.5	Shall require less than 3 cc of blood per sample		
3.6	The display should show the coagulation time of 2 channels		
4	**System Configuration Accessories, spares and consumables**		
4.1	System as specified.		
4.2	ACT Tubes - 200 nos (to be supplied as per the user requirement in staggered manner) - Rate to be quoted separetly and its price should be frozen for the next 5 years. Rate of 200 nos ACT tubes will be taken for price ranking.		
5	**Environmental factors**		
5.1	The unit shall be capable of being stored continuously in ambient temperature of		
5.2	The unit shall be capable of operating in ambient temperature of 20-30° C and		
6	**Power Supply**		
6.1	Should work on 180-270V AC as well as batteries. Mains adaptor to be supplied		
7	**Standards, Safety and Training**		
7.1	Deleted		
7.2	Manufacturer/Supplier should have ISO certification		
8	**Documentation**		
8.1	User/Technical/Maintenance manuals to be supplied in English.		
8.2	Certificate of calibration and inspection.		
8.3	Log book with instructions for daily, weekly, monthly and quarterly maintenance		
Sl no	**BOQ**	**QTY**	**UOM**
1	ACT Machine as specified	1	No.
2	ACT Tubes	200	Nos

Single Chamber Pacemaker	
Sl.No	Technical Specification
1	Should at least have modes AAO, AAI, VOO and VVI.
2	Should have facility to attach to patient arm, leg as well as IV Pole
3	Should have sensitivity range from 0.1 to 20mv.
4	Should have basic pacing rate 30 to 180ppm which is continuously adjustable.
5	Should have rapid atrial pacing rate atleast in the range 80-700 ppm, with easy
6	**Should have an output amplitude 0.4 to 10 mA continuously adjustable"**
7	Should have incremental adjustable sensitivity 0.1 to 20 mv.
8	Should have refractory period of 250 ms.
9	Should have work on 9 V alkaline batteries or 1.5 V AA batteries which are very easily
10	Should have back up battery life > 200 hrs.
11	Should have low battery indicator
	Should provide 4 pacing cables with each unit.
13	Deleted
14	Adequate service backup should be available.

Sl No	BOQ	Qty
1	Single chamber pacemaker	1
2	Pacing cables	4

Dual chamber pacemaker		
Sl.No	Technical Specification	
1	MODE OF OPERATION: Demand or Asynchronous	
2	Voltage output:0.1 TO 20 mA or wider	
3	Pulse rate 30-200 or more ppm with rapid atrial pacing available	
4	Pulse width 1 msec or wider.	
5	Display should demonstrate both sensing and pulsing.	
6	Dimensions- should be compact and light in weight	
7	Control: All controls are to be located on the face and are to be protected by a	
8	Should have safety lock for set pacing parameters	
9	Sensitivity: Should be continuously variable from 1 to 20 mV or more in ventricle and	
10	Refractory period –Atrial 200-500 msec, PVARP	
11	Inhibit sensitivity 1-20 mV	
12	Should have pacing pause mode.	
13	AV interval-manual range 200-300, sensed A-V 100-200	
14	Power backup to be 9 volts, pacing should continue during battery change period.	
15	Deleted	
16	Should have low battery indicator	
16	Six Pacing cables should be provided with each unit.	
17	Adequate service backup should be available.	
Sl No	BOQ	Qty
1	Dual chamber pacemaker	1
2	Pacing cables	6

ICP Monitor	
Sl. No	Technical Specification
1	Measurements of Intracranial pressure at the source-subdural, parenchymal or
2	Delivers an ICP waveform and ICP readouts.
3	Provides continuous recording and display of ICP over the most recent 12 or 24
4	The monitor unit should be able to be clamped on bedrail or pole mounted, and
5	On –screen user instructions.
6	**One-touch key/touch screen operation**
7	Continuous display of ICP parameters.
8	Sensors and transducers with high reliabilty and permitting visual display of
9	Rechargeable 1-hour battery operation or more for patient transport
11	Audible and visual low-battery alert functions.
12	User-programmable High ICP/means ICP alarms
13	Integral pole clamp.
14	1 Deleted

Sl No	BOQ	Qty	UOM
1	ICP Monitor (para 1 to 14 excluding para 8)	1	Nos.
2	**skull bolt & catheter kits**	20	Nos.
3	Transducer cable	2	Nos.

SN	High Speed Electrical Drill system		
I	**Technical Specification**		
1	**Universal High Speed Electrical Drill system with Variable speed setting with maximum speed of 70,000 rpm or more.**		
2	Should have touch screen display panel.		
3	Should automatically display various information like motor type, maximum rpm and current rpm level.		
4	Console to allow visible display and setting of maximum speed limit.		
5	Should have provision to attach two motor at the same time.		
6	**Should have customizable settings like Acceleration and stopping characteristics for individual motors, oscillation cpm**		
7	**Should have pedal foot control for varying the speed and forward & reverse rotation.**		
8	System should give audible beeps / alerts while in reverse action.		
9	No inline Lubrication should be required to run the motor.		
10	Should have integrated irrigation pump to allow precise adjustments of the pump flow. Surgeon should be able to control irrigation from the sterile field.		
11	Irrigation spray nozzle should be supplied with all handpeice attachments.		
12	Should have provision to use various saw system.		
13	Should have quick release and lock system for tools.		
14	A perforated sterilization basket of SS should be supplied. The sterilization basket should have racks to hold the cables, motor and various hand pieces (Optional- Price should be quoted separately)"		
15	Attachments should have tapered design for better visibility under microscope.		
16	The design should be ergonomic with ease of use in confined spaces like transsphenoidal pituitary and minimally invasive spine surgery.		
17	There should be easily visible markings to identify matching attachments and tools.		
18	System should have quick connect and lockable attachment system.		
19	**Deleted**		
20	Torque should be (30-50) mNm		
II	**Accessories**		
A	**Perforator set**		
i	Should have a perforator driver with Hudson Chuck system		
ii	**Disposable cranial perforators for adult and pediatric sizes (10 each) OR Reusable 1 no to be supplied. (Price should be quoted seperately)**		
B	**Craniotomy set**		
i	Should have footed attachments (dural guard) for craniotomy in pediatric and adult sizes (one each).		

ii	Corresponding craniotomy drill bits should be supplied in the following manner: **(Price of drill bits should be quoted seperately)**		
	a.Adult: 30		
	b.Pediatric: 30		
C	**Osteotomy saw set (Optional- Price should be quoted separately)**		
i	Should be supplied saw system with oscillating and reciprocating attachments necessary to perform cranial osteotomies for skull base, orbital and neurospinal surgeries.		
ii	It should also have tools to harvest bone grafts from ribs or iliac crest.		
iii	**Oscillating and reciprocating blades (10 disposable each or 1 reusable each) to be supplied**		
D	**Suture hole**		
i	Should be supplied with necessary attachment to make small suture holes in craniotomy flaps and spinal laminae.		
ii	The corresponding suture hole tool to be supplied in 10 nos. **(price of disposable bits should be quoted seperately)**		
E	**Burr system**		
i	Should have long (approx 13 to 15 cm) and short (approx 8 to 10 cm) straight attachments – one each		
a	with corresponding cutting burrs of 2mm, 4mm and 6mm heads – 20 each **(price of disposable bits should be quoted seperately)**		
b	With corresponding diamond burrs of 2mm, 3mm and 5mm – 10 each **(price of disposable bits should be quoted seperately)**		
ii	Should have angled long (approx 14 to 16 cm +/-1) and short (approx 10 to 12 cm +/-1) attachments of less than 5mm outer thickness for use in transsphenoidal, transoral, microspinal and endoscopic surgeries (preferably of variable length) – one each,		
a	with corresponding cutting burrs of 1mm, 2mm and 4mm heads – 10 each (price of disposable bits should be quoted seperately)		
b	With corresponding diamond burrs of 1mm, 2mm and 4mm – 10 each (price of disposable bits should be quoted seperately)		
F	**Steel Cutter: (Optional - Price should be quoted seperatly)**		
	Should have attachments for cutting steel and iron.		
	The entire list of price of the individual consumable items should be mentioned and valid for entire warranty period.		
III	**Standards, Safety and Training**		
1	Manufactures/Supplier should have ISO certificate to Quality Standard.		
2	Deleted		
3	Comprehensive training for staff and support services till familiarity with the system.		
SN	**BOQ**	**Qty**	**UOM**
1	High Speed Electrical Drill as per specification	1	Nos.
2	Perforator set	1	Set
a	Disposable cranial perforators: Adult	10	Nos.
	OR		
a	Reusable cranial perforators: Adult	1	Nos.

b	Disposable cranial perforators: Pediatric	10	Nos.
	OR		
b	Reusable cranial perforators: Pediatric	1	Nos.
3	Craniotome set	1	Set
a	Drill bit: Adult	30	Nos.
b	Drill bit:Pediatric	30	Nos.
4	Osteotomy oscillating and reciprocating saw set (Optional) - 1 set each	1	Set each
a	Oscillating and reciprocating blades (10 disposable each)	10	Nos. each
	OR		
a	Oscillating and reciprocating blades (1 reusable each)	1	Nos. each
5	Suture hole set	1	Set
a	Disposable bits	2	Set
6	Burr system set (long & short)	1	Nos. each
a	Cutting burr of 2mm head (long & short 10 each)	20	Nos.
b	Cutting burr of 4mm head (long & short 10 each)	20	Nos.
c	Cutting burr of 6mm head (long & short 10 each)	20	Nos.
d	Diamond burr 2mm (long & short 5 each)	10	Nos.
e	Diamond burr 3mm (long & short 5 each)	10	Nos.
f	Diamond burr 5mm (long & short 5 each)	10	Nos.
7	Steel Cutter 1 set(Optional)	1	Set
8	Perforated SS sterilization basket (Optional) - 1 no	1	Nos.

Intra-Operative Facial Nerve Monitoring System				
Sl. No	Technical Specification			
1	A microprocessor controlled system for recording the motor nerve responses during			
2	The system should work on 220V/50Hz mains only and have the following specifications:			
3	MAIN UNIT:			
a	EMG Channels	:	Minimum 2 Nos.	
b	Noise	:	< 10 mV P/P(Peak- Peak)	
c	Bandwidth	:	10 Hz - 10 kHz	
d	Audio Output	:	Approx 14 W	
4	**STIMULATOR:**			
a	Constant Current stimulus			
b	Frequency of Stimulus : 3Hz or 30 Hz selectable			
c	Range of stimulus: 50uA- 5 mA			
d	Display in form of bar graph/Digital and audible sound response			
e	Should record 2 EMG signals.			
f	Should have identification of channels for precise diagnosis.			
g	Deleted			
h	Should able to detected operation of electro-cautery devices and machine should stop			
5	**ACCESSORIES:**			
a	The system needs to be supplied with complete set of accessories:			
b	**Forceps probe - Reusable 1 no or disposable 10 nos**			
c	Disposable Monopolar Stimulator Probe Box of 10- 1 Box			
d	Disposable Recording Needles/ Surface electrodes Box of 10- 2 Box			
e	**Twisted sub dermal Needles – Reusable 1 no or disposable 10 Nos.**			
f	Disposable subdermal Needles (Box of 10) – 2 Boxs			
g	Surface electrodes- 10Nos			
h	Sensor to mute electro-cautery devices.			

BOQ			
SN	Item Name	Qty	UOM
1	System as specified	1	No
2	**Forceps probe - Reusable**	1	No
	OR		
	Disposable	10	Nos
3	Disposable Monopolar Stimulator Probe Box of 10	1	Box
4	Disposable Recording Needles/ Surface electrodes Box of 10- 2 Box	2	Box
5	**Twisted sub dermal Needles – Reusable**	1	No
	OR		
	Disposable	10	Nos
6	Disposable subdermal Needles (Box of 10) – 2 Boxs	2	Nos
7	Surface electrodes- 10Nos	10	Nos

Sl.No	Transcranial Doppler System		
1	Two Channel Transcranial Doppler capable of Intracranial and Extracranial use.		
2	Should be supplied with 1.6/2 MHz PW probes (2 Nos.) for bilateral Intracranial Monitoring		
3	Should be supplied with following probes for extra cranial monitoring:		
a	4 MHz -CW & PW (1 no. each) (Price should be quoted separately)		
b	8 MHz -CW & PW (1 no. each) (Price should be quoted separately)		
c	Add on imaging probe 5-10MHz- optional		
4	Should have color M mode feature with able to re-adjust the 64 gates digitally per probe.		
5	Should have excellent signal quality.		
6	Should have automatic emboli detection with real time histogram of HITS Energy distribution		
7	Should have the software feature to differentiate emboli with artefacts.		
8	Should have user-definable defaults for individual blood vessels		
9	Should have summary screen which displays all studies performed on a patient on a single screen		
10	Should have long term monitoring with trending of selected parameters		
11	Should be supplied with probe holder made of Medical grade plastic for long term monitoring or monitoring under CT/MRI. The Probes provided should be compatible to be fixed with the probe holder.		
12	Should have manual control of gain.		
13	Should have FFT size adjustable from 64 points to 512 points		
14	Should have ability to change spectrum display size from 2.5 sec to 1 min		
15	Should be able to display Pulsed wave parameters like Peak Velocity, Mean Velocity, Diastolic Velocity, Pulsatalility index, Resistivity index, Standard deviation, Heart rate, CO2 reactivity and VMR		
16	There should be provision of 2 vertical and 2 horizontal cursors for measuring the values manually.		
17	Should have 16 colour spectrum display and able to display up to 8 spectrums with Color M mode feature.		
18	Should be able to generate report with option of transferring all waveforms into report.		
19	Should have facility of storing the waveforms of complete spectrum with audio digitally and replaying with audio the complete study as recorded.		

20	Should be supplied within built PC of Pentium processor, 2 GB RAM,15" inbuilt LCD touch panel monitor, 1TB GB Hard disk drive, Latest operating system , MS office, Keyboard. Computer / PC should not be separate. It should be one unit and portable to move around.		
21	Should be supplied with External DVD writer.		
22	The data can be exported of any display in either Excel or BMP/PDF/DICOM/WAV format		
23	Should be supplied with Color Laser jet printer.		
24	Should be supplied with UPS of suitable rating.		
25	**Should be supplied with dedicated equipment trolley**		
26	System should be US FDA/European CE approved product		
27	Should be HL7 compliant systeem		
Sl.No	**BOQ**	**Qty**	**UOM**
1	System as specified	1	Nos
2	Bilateral Intracranial Monitoring 1.6/2 MHz PW probes	2	Nos
3	Extra cranial probe 4 MHz -CW & PW (1 no. each)	1	Nos
4	Extra cranial probe 8 MHz -CW & PW (1 no. each)	1	Nos
5	Add on imaging probe - optional	1	Nos
6	**Dedicated Equipment Trolley- 1No.**	1	Nos
7	**16Mz Probe (Optional Price)**		

Sl. No	General Neurosurgery Instrument Set
1	All instruments should be corrosion resistant, autoclavable, with European CE/US FDA or BIS approved
2	All the bidders are required to submit their catalogue along with tender / quotation clearly marking the quoted item and no. With a highlighter.
	Added para:
3	**It should be non-magnetic.**
4	**Instruments not exactly as per description below but with similar functionality will be considered.**
5	**Tolerance of +/- 10% is acceptable for the all instruments where range is not mentioned**
6	**All instruments should be supplied from single manufacturer (80% of the instruments should be from same manufacturer)** **Undertaking from the principal manufacturer should be submitted for not manufacturing of balance instruments. Rest 20% items should also meet quality standards as asked in the tender** **Note: MAF is required only for principal manufacturer**
	DESCRIPTION (1 no each)
1	KERRISON PUNCH, UPWARD OPENING 130^{O}, LENGTH 180-190MM, JAW OPENING 8-9MM KERRISON Punch, Upward 1mm, 2mm, 3mm, 4mm, 5mm
2	KERRISON PUNCH, UPWARD OPENING 130^{O}, LENGTH 180-190MM JAW OPENING 8-9MM ,90°downwards cutting 1mm,2mm, 3mm,4mm,5mm
3	COATED BRAIN SPATULA – FLEXIBLE METAL SPATULA CONICALLY TAPERED, SMOOTH SURFACE
	8 X 4 MM
	13 X 6 MM
4	MICRO SCISSORS- BAYONET SHAPED , STRAIGHT
	185-195MM
	200-210 MM
	220-230 MM
5	TUMOUR FORCEPS, BAYONET SHAPED, 3MM RING, 200-210 MM
	SERRATED
	SPOON SHAPED
6	TUMOUR FORCEPS, BAYONET SHAPED, 5MM RING, 200-210 MM
	SERRATED
	SPOON SHAPED
7	MICRO FORCEPS, BAYONET SHAPED, FINE TIP
	180-190 MM
	200-210MM
	SUCTION CANULA WITH STYLET (FERGUSON) 180-190 MM

8	1.5 MM
	2.0 MM
	2.5 MM
	3.0 MM
	4.0 MM
9	WULLSTIN TWIN PIECE MICRO-SUCTION
	SUCTION CANULA
	SUCTION TIP 0.4 MM
	SUCTIPN TIP 0.6 MM
	SUCTIPN TIP 0.8 MM
10	METZENBAUM SCISSORS, CURVED, SHARP TIP
	140-150MM
	180-190 MM
11	DEBAKEY DISSECTION SCISSOR, CURVED170-180 MM
12	DURAL TOOTH FORCEPS, DELICATE (MICRO ADSON)140-150 MM
13	DEBAKEY DELICATE NEEDLE HOLDER, 160-170 MM
	0.4 MM TIP
	0.2 MM TIP
14	HEGAR MAYO NEEDLE HOLDER, 180-190 MM 0.5 MM TIP
15	YASARGIL PHYNOX MINI CLIPS, TEMPORARY
	STRAIGHT 5 MM
	STRAIGHT 7 MM
	CURVED 6.5 MM
16	YASARGIL PHYNOX CLIP APPLIER (BAYONET SHAPED, WITHOUT HINGE)210-220 MM
	FOR STANDARD SLIPS
	FOR MINI CLIPS
17	YASARGIL PHYNOX CLIP REMOVER (BAYONET SHAPED, WITHOUT HINGE)210-220 MM
	FOR STANDARD SLIPS
	FOR MINI CLIPS
18	INTERVERTEBRAL DISC. RONGUERS, 150-160 MM
	2 X 5 MM
	2 X 10 MM
	3 X 10 MM
	4 X 10 MM
19	BULLDOG CLAMPS, 80-90 MM LENGTH, JAW 30-40MM
	STRAIGHT
	CURVED
20	SATINSKY VASCULAR CLAMPS, 160-170 MM LENGTH
21	CERVICAL SELF RETAINING RETRACTOR SET, 240-260 LENGTH, 100-120 MM OPENING

	BLADES RANGING FROM WIDTH 25-30 MM, DEPTH 65-70 MM
22	CONTAINER WITH LID FOR STORAGE OF INSTRUMENTS
	DIMENSIONS: 300-350MM X 250-300MM X 450-500MM
23	DURA HOOK-130 - 140MM (CAIRNS)
24	Arachnid KNIFE (VESSEL KNIFE) JACOBSON 185-190mm
25	GIGLI HANDLE FOR WIRE SAWS
26	DE MARTEL GUIDE, FLEXIBLE, 350MM.
27	VENTRIC PUNCTURE CANNULA 100 MM. JEFERSON'S (COPPER)
28	PENFIELD DURA CURRETE AND DISSECTOR (17-18 MM) , PENFIELD DURA DISSECTORS 190-200 MM, PENFIELD DURA DISSECTORS 200-210 MM
29	Love Nerve Root Retractor angled shaft, 90° at handle, blade 5 x 5 mm
30	Love Nerve Root Retractor angled shaft, 45° at handle, blade 5 x 5 mm.Tip Width: 1 1/4" (32mm)

Neurosurgical Operating Microscope			
SN	Technical Specification		
A	**MICROSCOPE BODY and OPTICS:-**		
1	Should have Motorized zoom magnification system with apochromatic optics, zoom magnification factors to be around the range of 0.4x to 2.4x.		
2	All activation should be by handgrip, Stand Mounted LCD control panel and foot control panel, with manual override. Total magnification range 2X-15X or higher.		
3	**Dual laser focusing OR Auto focus feature for ease of use**		
4	Internal motorized fine focusing system. All activation should be by handgrip, Stand Mounted LCD control panel and foot control panel, and with manual override. These should be continuously adjustable with working distance from about 200 mm (+/- 25mm) to 500 mm (+/- 25mm) or better without exchange of objective lens. There should be integrated continuously variable illumination field from 60mm – 15mm or less. Foot control panel should be provided with microscope. **Also optional price should be quoted for mouth control**		
5	Beam Splitter should preferably be integrated in the microscope body, without any external attachment with face to face attachment with rotatable dovetail mount for fatigue free surgeries.		
B	**BINOCULAR TUBE:**		
1	180 degree range tiltable binocular tube with focal length = 170 mm or higher. Should Graduated knob for continuous adjustment of interpupillary distance from 55 mm to 75 mm		
C	**Auto Balance:**		
1	System should be capable of auto-balancing the microscope intraoperatively.		
2	Autobalance should be fully computerized and should not involve any manual rotation of knobs (automatic self balancing).		
D	**EYEPIECES:**		
1	Pair of high eye point wide field push-in eyepieces 10x magnification with magnetic locks, with diopter setting range from -5D to +5D for spectacles wearers.		
2	The lenses should have rubberized cuffs for comfort and should preferably have antifogging coating.		
3	Face to face attachment for spinal surgery.		
4	Stereo Co Observation attachment with two joints with side changer.		
5	Optics and eyepiece similar to main surgeon unit.		
E	**ILLUMINATION SYSTEM:**		
1	Coaxial xenon illumination of about 300W with back up similar rating xenon with quick-action lamp changer in case of failure of main lamp should be integrated within the microscope stand.		
2	Should have automated illumination Brightness control linked to working distance and magnification.		
3	Should have automatic zoom-synchronized illumination field diameter, with manual override and reset feature.		

F	**HANDGRIPS:**		
1	Easily maneuverable handgrips with adjustable keys for zoom and focus, Illumination & Magnetic brakes.		
2	Programming for magnetic brake for control of stand & Microscope body brakes.		
3	Camera controls for video and still images should be programmable on handgrips		
G	**FLOOR STAND:**		
1	**Counterweight balance technology**		
2	**Rollable floor stand on base with lockable castors, carrier and swivel arms with Large reach of 1.7m or higher, weight carrying capacity of at least 12 kg or more**		
3	Should have free float magnetic system with Multiple magnetic brakes for Microscope body& Stand with, release of magnetic brakes by handgrips.		
4	Touch screen LCD or touch screen LED, with user prompts, quick set up of different parameters and their activation at press of a button such as automatic speed adjustment or automatic brightness setting depending on magnification.		
H	**INTEGRATED DIGITAL VIDEO CAMERA SYSTEM:**		
1	Advanced digital Full HD Video camera (1920 x 1080p) should be attached to supply output to the stand mounted colour LCD screen and for recording purpose.		
2	In addition there should be ports for connection to PC via USB/FireWire ports, 15 pin VGA port for color monitor, HDMI port +/- DVI port and preferably LAN connectivity.		
3	**All imaging to be DICOM compatible. Should provide hardware and software for DICOM compatibility.**		
I	**USER PROGRAMMING:**		
1	Programming for starting illumination, Magnification, working distance, Zoom speed & Focus speed for at least 8 - 9 different users.		
J	**VIDEO/ IMAGE DATA MANAGEMENT SYSTEM:**		
1	**Should have attached video recording system & Still photo in the microscope stand with internal HDD of at least 1 TB, and high speed DVD writer/USB.**		
K	**VIDEO MONITOR:**		
1	**Medical grade 19" or more Colour LCD/LED display should be mounted on Microscope stand.**		
L	**ADDITIONAL FEATURES: (Price should be quoted separately)**		
1	Should have installed ICG and sodium fluorescence (Yellow -560) Note: All the two facilities should be available with the machine.		
2	**Deleted**		
3	The microscope should be capable to superimpose the images of CT scan, MRI and Endoscopy (image guided neuro surgery). Microscope should work with Neuro navigation system available with the hospital		
4	The microscope and camera system should be upgradable to 3D facility.		
M	**CERTIFICATIONS:**		

1	Manufactures/Supplier should have ISO certificate to Quality Standard.		
3	: Deleted		
N	**Accessories:**		
1	Spare Xenon lamp - 1 no (Price should be quoted separately)		
2	**Disposable drapes for microscopes- 250nos.**		
3	Vials for Sodium Fluorescence - 560 : 10 nos		
4	Vials for ICG drugs - 50 nos		
SN	**BOQ**	**Qty**	**UOM**
1	System as specified	1	Nos.
2	Spare Xenon lamp	1	Nos.
3	Disposable drapes for microscopes	250	Nos.
4	Vials for Sodium Fluorescence - 560	10	Nos.
5	Vials for ICG drugs	50	Nos.
6	Mouth control (Optional)	1	Nos.
7	Image guided neurosurgery facility	1	Nos.

Sl No.	Laparoscopic Surgery Set with High Definition Camera (Laparoscope Set)	
	1 Description of Function	**Qty**
	1.1 Laparoscope is used for minimally invasive surgery and comprises of telescope and associated instruments and units	
	2 Operational Requirements	
	2.1 The set for Laparoscopic surgery should have units/groups of items/components as given	
	3 Technical Specifications	
	3.1 CAMERA CONTROL UNIT & CAMERA	1
	High definition Endoscopic camera system should have following features:	
	a) Pure Digital HD technology with high definition video of 1920 x 1080p (min) native resolution	
	b) Progressive scan technology both on camera head and console	
	c) Consistent use of 16:9 format for input and output for HDTV function	
	d) CCD/CMOS technology for hi fidelity image transmission	
	The system should have integrated optical zoom with autofocus facility	
	f) System should be able to optimize all the settings and should be ready as soon as connected to camera control unit with automatic brightness control	
	Camera control unit should be compatible with full HD three chip camera heads. In case of downtime standby unit provided should also be of full HD three chip camera head.	
	h) Should be compatible for remote controlled operation of various features	
	Technical Specifications :-	
	a) Image Sensor 3 x 1/3 Progressive scan CCD Chip	
	b) Pixels 1920 X 1080 pixels per chip (min)	
	c) AGC Microprocessor controlled	
	d) Video Outputs Composite to BNC, Y/C to S-VHS, RGB to D socket, HDTV-DVI-D, DV for recording	
	Keyboard/ Touchscreen keyboard for character generator	
	f) Camera settings (e.g. white balance, zoom, gain, sharpness etc.) should be possible directly from the camera head buttons.	
	g) Facility of direct recording into external storage from camera HUB should be available	
	3.2 MONITOR	1
	One Wide Screen Monitor having the following features:	
	HDTV display in 16:9/16:10 HDTV format	
	b) 26" Medical grade Full HD, LED Crystal display	
	c) Resolution: More than 1100 lines and 1920 x 1200 pixels	
	d) SDI/HD-SDI, Composite, S-Video, RGB, DVI-D and VGA input	
	e) All required cables and connectors, which should be specified	
	f) TFT screen stand/Fixtures for connecting to Pendant System/Ceiling Light Arm	
	g) Dustproof and Drip water protected	
	3.3 Telescope (High Definition)	
	1. 5 mm - 30 degree angle of view	1
	1. 5 mm - 0 degree straight view (each approximately 27-30 cm long)	1
	10 mm- 30 degree angle of view	1
	10 mm- 0 degree straight view(each approximately 30-35 cm long)	1

2. Low risk of object burn	
4. Autoclavable/sterilizable	
5. Fibreoptic light transmission incorporated	
3.4 CO2 insufflator	1
1. Fully automatic, electronically controlled gas fill	
2. Adjustable flow rate till a maximum of 30-45 litres per minute and pressure range adjustable between 0 to 30 mm Hg	
3.Optical and acoustic warning signals in case of malfunction or excessive pressure with facility of automatic release in case of over pressure.	
4 Facility for connection to CO2 medical gas pipeline as well as high pressure CO2 cylinder.	
5. Control by keys on front panel	
6. Clear and adjacent front display of actual and preset flow rate, actual and preset pressure, gas consumed	
7 Facility for preheating of gas to body temperature with internal/external OR both heating devices.	
8. Facility for easy evacuation of smoke and mist	
9. Memory for retention of previous pressure settings	
10. Should include pin-index connection to small/big gas cylinder with regulator, high pressure	
3.5 LIGHT SOURCE (Xenon 300W) with One Spare Bulb or Comparable LED Light source.	1
1. Xenon cold light fountain with 300 watts xenon lamp	
2. Manual and automatic adjustment of light intensity	
3. Brightness control to be regulated manually or automatically via the output signal of a video camera	
4. Display of lamp life/Bulb usage meter warning light	
6. Standby mode should be available	
7.DELETED	
8.DELETED	
3.6 SUCTION-IRRIGATION UNIT	1
1.Controlled suction and irrigation unit with flow rate of atleast 10lt/min	
2. Irrigation pressure control between 0-400 mm Hg	
3. Suction pressure control between 0.75 bar	
4. Control from control panel and/or foot pedal	
5. Main unit with digital display	
6. Overflow protection on suction bottles	
7.Accessories should include silicone suction tubing set, reusable pressure domes, bacterial filter and sterilizable suction bottles with cap of 3-5 lit capacity (2nos)	
3.7 VIDEO-CART (Same Make)	1
a. Made of Stainless Steel/Epoxy coated metal	
b. Portable on 4 antistatic dual castors, 2 with locking brakes	
c.Required number of shelves for housing all the units of the set	
c. Adjustable arm for fixation to either side for fixing the TFT monitor	
d. One drawer unit with lock and key	
e. Cable Manager	
f). It should have minimum 4 shelves	
g power box with concealed wiring for providing electrical connections of proper rating to all	
3.8 IMAGE MANAGEMENT SYSTEM	1
a. Documentation system for digital storage of still images, video sequences and audio files	
b. Resolution of still images should be 1920x1080 and HD video	
c. Writes multi session and multi-patient CDs/DVDs	
d. Fully controllable from inside and outside the sterile field	
e. USB support for storage on USB drives	
f) Latest processor & HDD (atleast 500GB)	
g. atleast 4GB RAM should be available	
h. Integrated DVD/CD writer with maximum speed which should be specified	
i) Compact key board with cordless mouse or touch screen keyboard.	

	j. Deleted		
	k. All types of connecting cables (BNC, DVI) and connectors, which should be specified		
	l. Flat screen colour monitor of 1024x768 resolution with all connectors and connection cables		
	(m). deleted		
	n. It should have operating system of Windows Xp or latest.		
	3.9 CARBON DIOXIDE CYLINDER (B-type,20kg)		2
	3.10 HAND INSTRUMENTS & OTHER ACCESSORIES		
	Instrument	Specifications	
	Reusable Veress Pneumoperitoneum Needle	Spring loaded blunt stylet luer lock Length - 10cm	2 2
	Reusable Trocar :- 5mm	Multifunctional valve/Magnetic ball, insufflation stopcock and smooth sleeves, pyramidal tip, length (10.5cm), autoclavable	5
	Reusable Trocar :- 10/11mm	Multifunctional valve/Magnetic ball,, insufflation stopcock and smooth sleeves, pyramidal tip, length (10.5cm), autoclavable	4
	Reusable Trocar :- 5mm	Multifunctional valve/Magnetic ball,, insufflation stopcock and threaded sleeves, pyramidal tip, length (10.5cm), autoclavable	2
	Reusable Trocar :- 13.5mm	Multifunctional valve/Magnetic ball, insufflation stopcock and smooth sleeves, pyramidal tip, length (10.5cm), autoclavable	1
	Two ways Suction and Irrigation cannula	Size 5mm, length 36cm, used with suction and irrigation handle and handpiece with stopcock Size 10mm, length 36cm, used with suction and irrigation handle and handpiece with stopcock	2 2
	Tissue Grasping forceps – toothed 2x3 teeth	Double action jaws of 20-23 mm , rotating with connector pin for unipolar coagulation, size 5mm, length 33-36cm, dismantling facility, plastic handles with rachet, autoclavable	1
	Tissue Grasping forceps – toothed 2x 3 teeth	Single action jaws of size 30-35mm, rotating with connector pin for unipolar coagulation, size 5mm, length 33-36cm, dismantling facility, plastic handles with rachet, autoclavable	1
	Maryland forceps	Double action jaws with size 14-16 mm , rotating with connector pin for unipolar coagulation, size 5mm, length 33-36cm, dismantling facility, plastic handles without rachet, autoclavable	2
	Grasping forceps- Atraumatic	Double action jaws, spoon shaped with multiple teeths of jaw length 18-23 mm and rotating with connector pin for unipolar coagulation, size 5mm, length 33-36cm, dismantling facility, plastic handles without rachet, autoclavable	1
	Dissecting and Grasping forceps-Alligator type	Double action jaws , rotating with connector pin for unipolar coagulation, size 5mm, length 33-36cm, dismantling facility, plastic handles with rachet, autoclavable	1

	Dissecting and Grasping forceps-	Single action jaw , with dolphin nose tip of 16-20 mm, rotating with connector pin for unipolar coagulation, size 5mm, length 33-36cm, dismantling facility, plastic handles without rachet, autoclavable	1
	Grasping forceps- Atraumatic – Reddick Olsen type	Double action jaws, with fine serrations on jaw length 12-18 mm and rotating with connector pin for unipolar coagulation, size 5mm, length 33-36cm, dismantling facility, plastic handles without rachet, autoclavable	1
	Grasping forceps- Fenestrated	Single action straight jaw of 24-26mm length with fine serrations and fenestration , rotating, size 5mm, length 33-36cm, dismantling facility, plastic handles with rachet, autoclavable	1
	Grasping forceps- Fenestrated	Double action straight jaws of 35-40 mm length with fine serrations and fenestration, rotating, size 5mm, length 33-36cm, dismantling facility, plastic handles with rachet, autoclavable	1
	Babcock Grasping forceps- (5 mm)	Double action jaws, atraumatic fenestrated, rotating, size 5mm, length 33-36cm, dismantling facility, plastic handles with rachet, autoclavable	1
	Babcock Grasping forceps- (10 mm)	Double action robust jaws with large atraumatic gripping surface, rotating, size 10mm, length 33-36cm, dismantling facility, plastic handles with rachet, autoclavable	1
	Fan shaped retractor	Rotating with 4-5 blades, size 5mm, length 33-36cm, dismantling facility	1
	Hook Scissors,	Double action jaws , rotating with connector pin for unipolar coagulation, size 5mm, length 33-36cm, dismantling facility, , autoclavable	1
	a. Rotating Metzenbaum Scissor	Double action jaws of length 14-16mm, rotating with connector pin for unipolar coagulation, size 5mm, length 33-36cm, dismantling facility, autoclavable	1
	b. Insert of Metzenbaum scissors		2
	Bipolar coagulating forceps	Wide jaws for dissection, grasping large vessels, size 5mm, length 33-36cm fenestrated. Jaws with robust hinge and 360° rotational, ring handles, can be completely disassembled and a cleaning port, autoclavable	1
	Bipolar coagulating forceps (Only insert)	Maryland type jaw of 18-20 mm length, and 34-36 cm long to fit into the other parts of No. 23, autoclavable	1
	Needle Aspirator	Size 5mm, length 30- 36cm, Needle diameter of 1.5-2 mm	1
	Needle holder (Disengageable, coaxial type)	Size 5mm, tungsten carbide tip, straight handle with ratchet, single moving with curved tip to left, length 33-36cm	1
	Needle holder insert (Straight type)	Size 5mm, tungsten carbide tip, single moving straight jaws, length 33-36cm,	1
	Extracorporeal Knot pushers ,	Closed Eye type, length 28-32cm, size 3mm	1

	Endoloop applicator	To fit into trocar size of 6 mm	1
	Clip Applicator - Medium Large	Rotatable, provision for locking the shaft conveniently, 10mm, compatible with clip LT 300	1
	Clip Applicator - Large	Rotatable, provision for locking the shaft conveniently, 10mm, compatible with clip LT 400	1
	Hassan cone	Adaptable to 10mm trocar	1
	Reduction Sleeves/Extractors	From 10/11mm to 5mm, metallic	5
	Reducers	from 10/11mm to 5mm	5
	L-Hook	Size 5mm, length 33-36cm with pin for cautery	2
	Spatula	Size 5mm, length 33-36cm with pin for cautery	1
	Fascia closure instrument	Size 2.8mm, length 17cm with single action jaw	1
	High Frequency Cord.	For 5mm & 10mm hand instruments with Monopolar Electrodes, spatula tip	2
	Washers	For 5 & 10 mm cannula and reducers	20 pieces each
	Fibreoptic Light cables	With straight connectors of 4.8mm diameter and 250 cm long	1
	Fibreoptic Light cables	With straight connectors of 4.8mm diameter and 300 cm long	1
	Light Adaptor	Angled 90°, diameter 4.8 mm, free rotatable, to connect with standard telescopes	1
	Insufflator Tube		2
	Container Systems: Metal & Plastic	For sterilization and storage of telescopes, hand instruments and other accessories. Different sizes.	2
	4 System Configuration Accessories, spares and consumables		
	4.1 System as specified. Telescope, Light source, Camera Head, Image Management system, CO2 insufflator Suction-irrigation from same make. 80% of the Hand instruments should be of same make of principal system.		
	7 Standards & Safety		
	7.1 Should be US FDA or European CE with 4 digit notified body number or BIS approved product		
	7.2 Manufacturer and Supplier should have ISO certification for quality standards.		
	7.3 Electrical safety conforms to standards for electrical safety IEC 60601-1 General Requirements (or equivalent BIS Standard)		
	8 Training		
	8.1 Comprehensive training for staff of user department and support services till familiarity with the system		
	1. Bidder has to give demonstration of the equipment if required. **2. All the instruments mentioned in Technical specifications Sl no 3.1 to 3.10 (Not necessary for Sl no 3.9 & 3.7) should be from the same manufacturer.**		

Sl No.	OPEN GENERAL SURGERY INSTRUMENTS		
	Description of Funtion		
	1.1 Open surgery instruments are required to carry on conventional general, gastrointestinal,		
	2 Operational Requirements		
	2.1 1. The instruments quoted should be of high quality and standard		
	2.1.2 DELETED		
	2.1.3 Deleted		
	2.1.4. The instruments must be ISO certified and copy to be enclosed.		
	2.1.5The part number and name of manufacturer should be engraved on the each instrument		
	3 Technical Specifications		
	3.1 MAJOR BASIC SET		
	Instrument	**Specifications**	**Qty**
1	Sponge Holding Forceps	a- Rampley type. 180 mm long	4
		b- Rampley type. 250 mm long c- FOERSTER-	4
		BALLENGER. Serrated jaws; straight 180 mm long	6
		d- FOERSTER-BALLENGER. Serrated jaws; curved 245 mm long	
		e- FOERSTER-BALLENGER sponge & dressing forcep,smooth jaws 245mm	6
2	Steel Basin	a- Small size b- Large size	5 5
3	Galley Pots	a- 8.3x5.4x4.1 cm	20
4	Cheattle forceps	270-280 mm long	10
5	Kidney trays	a- 170 mm size b- 250 mm size c- 275 mm size	10 10 10
6	BP handle of standard length and type	a- No. 3 b- No.4 c- No. 7	15 15 05
7	Humby"s knife handle	Length of 30 – 32 cm	2
8	Towel Clamps	a) Jones type. 8-10cm b) Backhaus type. 8-10 cm	60 60
9	Metzenbaum Scissors, (Tungsten Carbide)	a- Curved, blunt tip, 145 mm b- curved, blunt tip, 180 mm long c- curved, blunt tip, 230 mm long	10 10 10
10	Metzenbaum Scissors, (Tungsten Carbide)	a- fine, straight, blunt tip, 145 mm b- fine, straight, blunt tip, 180 mm	06 06

11	Baby-Metzenbaum Scissors	a- fine, curved, pointed tip, 145 mm	6
12	Operating scissors	a- Straight, B/B; 14-15 cm long	04
		b- Straight, B/B; 18-19 cm long	04
		c- Straight, S/S; 12-13 cm long	04
		d- Straight, S/S; 16-17 cm long	04
		e- Curved, B/B, 17-18 cm long	04
		f- Curved, S/S, 17-18 cm long	04
13	Suture cutting Scissors	a) Straight, 11-12cm	05
		b) Straight, 16-18 cm	05
		c) Curved, 20-22cm	05
14	Iris Scissors	a- Straight, 11-12 cm	06
		b- Curved, 11-12 cm	06
15	Metzenbaum"s – Thorek Scissors (Tungsten Carbide)	a- 20-21 cm long	6
16	Pott"s Smith Scissors	a- 180-190 mm long; 25 degree with bead at the tip of posterior blade	01
		b- 180-190 mm long; 45 degree	02
17	Favaloro vascular forceps	a- 140 mm long	2
18	Mayo"s Scissors	a- Straight, bevelled edges, 13-14 cm	05
		b- Curved, bevelled edges, 13-14 cm	05
		c- Straight, bevelled blades, 18-20 cm	05
		d- Curved bevelled blades, 18-20 cm	05
19	Stitch cutting scissors	Straight type; 13-15 cm long	10
20	Lister"s Bandage scissors	a- Double finger bow of 18-20 cm	2
21	ALLIS Baby tissue grasping forceps 4/5 teeth	a- 130 mm long	15
22	ALLIS tissue grasping Forceps atraumatic jaw 150mm" "	a- 155 mm long	24
		b- 200 mm long	24
23	ALLIS tissue grasping forceps; 4x5 teeth	a- 155 mm long	24
24	ALLIS tissue grasping forceps; 2x3 teeth	a- 155 mm long	12

25	Standard Dissecting forceps, medium width	a. 11-12 cm long	10
		b. 15-16 cm long	10
		c. 30-31 cm long	02
26	Standard Tissue Forceps with 1 x 2 toothed	a- 11-12 cm long	10
		b- 15-16 cm long	10
27	WAUGH toothed dissecting Forceps medium	a- 100 mm long	6
28	ADSON dissecting forceps; bayonet shaped	a- 175 mm long	6
29	Lister Sinus Forceps	a- 12-13 cm long	02
		b- 17-18 cm long	06
30	Micro Dissecting Forceps	15-16 cm long	3
31	Mini-Adson"s dissecting Forceps	11-12cm;	10
32	Micro-Adson"s tissue Forceps	11-12cm; 1x2 toothed	8
33	DEBAKEY dissecting and tissue forceps; jaws 2mm width	a- 150 mm long	06
		b- 200 mm long	06
		c- 240 mm long	06
34	Mc Indoe"s dissecting forceps	a- 15-16 cm long	2
35	Bull dog clamp	a- Debakey"s type:30-35mm; angled10 mm jaw	05
		b- 40-45 mm;20mm straight jaw	05
		c- 55-60 mm; straight 20-22 mm jaw length	05
36	SPENCER WELLS Haemostatic Forceps	a- Curved, serrated Jaws, 130 mm	30
		b- Curved, serrated Jaws, 175 mm	30
		c- Curved, serrated Jaws, 230 mm	30
		d- Straight, serrated Jaws, 130 mm	30
		e- Straight, serrated Jaws, 175 mm	30
		f- Straight, serrated Jaws, 230 mm	30
37	Dunhill Hemostatic Forceps	a- Straight, 125 mm	24
38	MICRO-HALSTEAD Mosquito Artery Forceps	a- Straight, 120-130 mm	30
		b- Curved, 120-130 mm	30

39	Baby-Mosquito (Hartmann	a- 100 mm, straight b- 100mm, curved	30 30
40	KOCHERS haemostatic forceps	a- Straight, 1x2 teeth, 130-140 mm b- Curved, 1x2 teeth, 130-140 mm	10 10
41	KOCHERS- OCHSNER haemostatic forceps	a- Straight, 1x2 teeth, 225 mm b- Curved, 1x2 teeth, 225 mm	10 10
42	Lahey"s Hemostatic Forceps	a- Curved, 180-200 mm long b- Curved, 220-230 mm long	06 06
43	KELLYS Dissecting & Hemostatic Forceps	a- Curved, 190 mm long b- Curved, 240 mm long	12 12
44	MIXTERS Dissecting & ligature forceps	a- 160 mm long b- 220 mm long c- 250 mm long	04 04 04
45	MIXTERS- Baby Dissecting & ligature forceps	a- 130- 140 mm long	6
46	Adson Baby Dissecting and Hemostatic Forceps	a- 140-150 mm long b- 180 mm long	03 03
47	BABCOCK tissue grasping Forceps atraumatic jaw	a- 155 mm long b- 200 mm long	24 24
48	Duval intestinal and tissue grasping forceps	a- 230 mm long	3
49	Kocher Atraumatic Intestinal Clamps; very soft and elastic	a- Straight type; 220 mm long b- Straight type; 280 mm long c- Curved type; 220 mm long d- Curved type; 280 mm long	06 06 06 06
50	Baby Kocher Intestinal clamps: very elastic	a- Straight; 130 mm long b- Curved; 130 mm long	06 06
51	PAYRS stomach clamps large	a- 145mm jaw length; 315mm long	2
52	Desjardins Gallstone Forceps (of different curvatures)	a- 225 mm long, b- 240 mm long	06 06
53	Mixter Gallstone Forceps	22-23 cm long	3
54	Skin Hook	a- Single Sharp hook; 15-16 cm long b- Double Hooklets; 15-16 cm	12 06
55	CUSHING VEIN RETRACTOR	a- 10 X 13 mm, 205 mm long	6
56	DEBAKEY TANGENTIAL OCCLUSION CLAMPS	a- 58mm x 270mm	2
57	KRYENBHUL nerve hook with small ball	a- 180-190 mm long	6
58	Proctoscope	a- Paediatric size b- Adult size	02 10
59	Rectal Punch Biopsy Forceps	a- Paediatric size b" Adult Size	01 02

60	MAYO HEGAR needle holder T/C Tip	a- 150 mm long b- 180 mm long c- 200 cm long	5 5 5
61	De Bakey Needle Holders	a- 250mm long b- 300 mm long	04 04
62	BABY CRILE WOOD Needle Holder	a- 150 mm long	6
63	Ryder-vascular needle holder	a- 155 mm long b- 220 mm long	03 03
64	CASTROVIEJO needle holder, TC tip	a- 145 mm long b- 180 mm long	03 02
65	DENIS-BROWNE abdominal retractors	a- Frame of 175x150 mm with 4 blades of 40x30 mm b- Frame of 175x150 mm with 4 blades of 40x40 mm	2 sets 2
66	Senn-Miller retractor	a- Triplet hooklets, blunt hooklets; 16-18 cm long	3
67	Langenbeck"s retractor	a- Ring type fenestrated handle; 30x11mm, 21-22cm long b- Ring type fenestrated handle; 40x11mm, 21-22cm long c- Ring type fenestrated handle; 50x11mm, 21-22cm long d- Ring type fenestrated handle; 85x15mm, 22-23cm long	15 06 06 04
68	Lahey"s Retractor	a- 29x6 mm jaw length, 19-20 cm long	6
69	Deaver Retractor	a. 30-35 cm long, 3.8-4.2cm wide b. 30-35 cm long, 4.8-5.2cm wide c. 30-35 cm long, 7.0-7.5cm wide d. 30-35 cm long, 2.0-2.5cm wide e. 20-25cm long, 2.0-2.4cm wide	06 06 06 02 02
70	Morris wound retractors	a- Limb of 70x40 mm; 245 mm long b- Limb of 70x65 mm; 245 mm long	04 05
71	Allisons Lung retractor	a- 320 mm long; jaw width of 54 mm	2
72	Joll retractor	15 - 16 cms size	4
73	Balfour –Standard abdominal Retractor	Size 20 cm; lateral blades of 100x35 mm with one central blades	2
74	Doyen"s retractor	Blade of 45x88 mm , 24- 25 cm long	6
75	Czerny retractor	175mm long, 38 X 22mm	6
76	Satinsky Tangential clamps	a- 22 cm long	4
77	De Bakey multipurpose vascular clamps	a- 15 cm long b- 22 cm long	03 03
78	PEAN hemostatic forceps	a- Straight, 155 mm long b- Curved, 155 mm long	03 03
79	De Bakey-Pean Hemostatic Forceps	a- Curved, 200 mm long b- Straight, 200 mm long	06 06

80	Suction Tips	a- Frazier type; 3 mm: 19-20 cm long b- Poole type; Sump suction tube of 10mm size and 23-24 cm long.	06 06
81	MAYOS safety pin instrument Holder	a- 140 mm long	12
82	DOYEN'S rib raspatories; left, adult	a- 175 mm long	3
83	DOYEN'S rib raspatories; right, adult	a- 175 mm long	3
84	SAUERBRUCH RIN RONGEURS Powerfulc/action 310mm	a- 310 mm long, round bite	1
85	LISTON-KEY-HORSLEY bone cutting forceps	S shaped; 255mm long	1
86	Hernia Ring Forceps for retraction of cord	a- 145 mm long	6
87	FARABEUF periosteal elevators	155	1
88	BRISTOW periosteal elevator	230 mm long	1
89	VOLKMANN double ended bone currette	170-180 mm long	4
90	FINOCHIETTO chest retractor	c- Large size; lateral blades of 80x65 mm long d- Large size; lateral blades of 80x65 mm long	02 01
91	Bailey rib contractors for adults	Long claw; 200mm long	4
92	Container Systems: Metal & Plastic	For sterilization and storage of telescopes, hand-instruments and other accessories. Different sizes	3
93	Hemorrhoidal banding gun with accessories	Suction type	4

Sl. No	Ultrasonic cutting and coagulation device		
SN	**Ultrasonic cutting & coagulation , advanced Radio frequency/Bipolar energy system**		
A	**GENERATOR**		
1	System should be a single/dual generator with **single/dual** footswitch that provides ultrasonic energy and advanced RF energy technology for soft tissue dissection and vessel sealing		
2	Should have the ability to select hand switch or footswitch activation or both for ultrasonic and advanced RF energy instruments and the ability to change selection during use can seal and transect vessel upto 7mm with system feedback mechanism for better patient safety.		
3	Should have very minimal lateral thermal with spread not more than 1mm.		
4	RF energy instruments compatible with generator should have controlled gap mechanism for uniform compression across the instrument jaw for better sealing and transaction of vessels and tissue bundles upto 7mm simultaneously.		
5	Should have standby mode to ensure safety.		
6	Should be able to power ultrasonic energy instruments with **35 KHz and above** frequency.		
7	Should be compatible for RF energy and ultrasonic energy instruments for open and laparoscopic surgery.		
8	Should be able to power energy instruments with microprocessor controlled bipolar electrosurgical radiofrequency technology with a sinusoidal forced impedance output.		
9	Should be equipped with smart advanced RF energy technology to measure the tissue impedance and control the power delivery and that can simultaneously seal and transect vessels up to 7mm, large tissue pedicles and vascular bundles with system feedback.		
10	Should be compatible with **360 deg** shaft rotation and can simultaneously seal and transect vessel upto 7mm, large tissue pedicles and vascular bundles with system feedback		
11	Should provide temperature controlled energy delivery which should maintain tissue temperature less than 100 deg C and hand instruments that provide tissue/vessel seal strength to withstand bursting pressure of minimum of **3 times** the systolic pressure		
12	Should be compatible with **integrated RF/bipolar or ultrasonic energy** instruments which can simultaneously seal and transect vessels 7mm, large pedicles and vascular bundles with ultrasonic energy with system feedback		
13	All hand probes **(description given in BOQ)** for open and lap procedures should be able to simultaneously cut and coagulate tissues with integrated hand activation control buttons.		
14	Should have the ability for software updates via USB memory stick/HDMI/Link		

15	Deleted		
16	Should provide class I protection against electric shock		
17	Should come equipped with system diagnostics and troubleshooting guide to pin point any problem in the system.		
18	Well-equipped service centre should present in India with trained OEM Engineers/Technicians		
B	**FOOT SWITCH & CABLE**		
C	**Accessories: All the accessories should be mentioned in BOQ and price should be quoted seperately. Price should be valid for the entire warranty period.**		
1	Generator cart - **1 no**		
2	Adapters for ultrasonic and radiofrequency instruments **(if required)**		
3	Hand piece/Hand pieces (transducer) compatible with various hand instruments used in open and laparoscopic surgeries. Sufficient number of transducers so as to last **90 cases to be supplied** **(Certificate from OEM regarding life of each transducer)**		
4	Ultrasonic 5 mm Laparoscopic hand activated curved tip coagulating probe **Quantity 2 nos**		
5	Ultrasonic hand activated curved tip coagulating probe for open surgery: **Quantity 2nos**		
6	Advanced RF/Bipolar 5 mm Laparoscopic hand activated curved tip coagulating probe: **Quantity 2 nos**		
7	Advanced RF/Bipolar hand activated curved tip coagulating probe for open surgery **Quantity 2 nos**		
	BOQ	**Qty**	**UOM**
1	System as specified	1	Nos
2	Generator cart	1	Nos
3	Hand piece/Hand pieces (transducer) compatible with various hand instruments used in open and laparoscopic surgeries. Sufficient number of transducers so as to last **90 cases to be supplied**	1	Nos
4	Ultrasonic 5 mm Laparoscopic hand activated curved tip coagulating probe	2	Nos
5	Ultrasonic hand activated curved tip coagulating probe for open surgery	2	Nos
6	Advanced RF/Bipolar 5 mm Laparoscopic hand activated curved tip coagulating probe	2	Nos
7	Advanced RF/Bipolar hand activated curved tip coagulating probe for open surgery	2	Nos

Bone Mineral Densitometer (BMD)	
Sl. No	Technical Specification
A	Scanner hardware and acquisition technology
1	Isocentric or Linear fan beam acquisition
2	Energy Switching technique - Energy switching should be mentioned with supporting documents.
3	Internal reference system for pixel by pixel data calibration (either automated or by phantom)
4	Multi-element solid state detector array, at least 16 detectors
5	Oil cooled/air cooled high capacity X-ray tube
6	Computer aided re-positioning
7	Cross hair style laser for patient positioning
8	High scan table for easier patient accessibility
9	Controls on C-arm or on the side of patient table for user convenience
B	Quality assurance
1	Deleted
2	Multiple system checks with pass/fail results
3	Whole body research phantom for quality assurance. Also quote small animal phantom or equivalent for small animal studies optionally
4	Automatic trending graph of QA variables
5	Should have provision to print QA results
6	Radiation Dose: Scatter dose less than 0.1 uGy/hr at 1 meter
C	Clinical applications
1	Facility for supine or decubitus positions
2	Second spine and hip scan acquisition or by dual energy scanning in spine and hip
3	Express exam productivity tools or express exam protocol grouping programme.
4	Patient call back list
5	Greater than 1.0% in vivo precision
6	L1-L4 standard spine analysis
7	L1-L4 standard spine analysis (Trochanteric, Trochanteric, wards triangle
8	Automated dual Femur
9	Onscreen help graphically displays proper patient positioning
10	Automatic BMD spine and hip analysis
11	Scoliosis spine analysis
12	Pediatric spine and hip and whole body analysis
13	Whole body analysis
14	HD fVA or fVA or Equivalent vertebral analysis
15	Small animal
16	Infant
17	Body composition

18	Pediatric whole body	
19	Fracture risk indication with IVA	
20	Hip structure analysis (HAS)	
21	Standardize BDM reporting	
22	Single/dual energy image display	
23	Context sensitive help software	
24	Serial scan comparison	
D	**Connectivity/Reporting tools**	
1	Reporting software with fracture risk indication	
2	Standardized BDM reporting	
3	Extended spine reporting	
4	Extended proximal femur rate of change reporting	
E	**Reference Data**	
1	Reference data n > 8000	
2	Default NHANES III standardized database	
3	Age, sex and ethnic matched reference data	
F	**Computer hardware**	
1	APEX/Windows based operating system	
2	4 GB RAM minimum	
3	1TB Hard drive recommended	
4	CD R/W Drive	
5	128MB video board	
6	Network interface card	
7	High resolution monitor	
8	**Laserjet color printer along with consumables supplied for initial startup. All consumable price to be quoted seperately. Price to be fixed for 5 years**	
G	Weighing scale & height measurement device to be supplied	
H	Suitable Online UPS with 30 min backup for the entire system including computer and printer	
I	Deleted	
J	**Site Modification Works**	
	Bidder to execute site modification works in an area of approx. 300 sq feet as per AERB norms.	
	Bidder should assist institute in getting AERB site approval.	
	Bidder should quote separate rate for each of the following items.	
	The payment shall be made as per the actual work done.	
	Name of the particulars	Qty
1	Construction of 9" brick wall	60 sq meter
2	Provision of wall tiles- Reputed make	30 sq meter
3	Provision of Floor tiles- Reputed make	20 sq meter
4	Provision of false ceiling – reputed make	20 sq meter
5	Air conditioning for room and equipment- suitable AC unit split or package unit - 1	

6	Electrical works including general electrification and control panel for equipment (if required) - LS
7	Any other miscellaneous works if necessary for successful installation and commissioning of the DEXA scanner - LS
	Added Para:
	Following accessories to be supplied as per AERB norms:
1	**Lead Apron - 2 nos**
2	**lead protection barrier with viewing window - 1 no**
3	**Lead lining of door and window.**
	Installation has to be done as per AERB norms.

IPL (INTENSE PULSE LIGHT SYSTEM)
1. It should have following application Application: Hair Reduction, Vascular Lesions, Pigmented Lesions, Acne, Photo rejuvenation.
2. It should have energy up to 300J.
3. It should have energy fluence up to 70 J/CM2.
4. It should have light source Xenon Flash Lamp.
5. It should have control panel display screen 10.4 inch True Color LCD Touch Screen.
6. It should have pulse mode variable single and Multi-Pulse Modes.
7. It should have single pulse duration variable (1-40 msec).
8. It should have multiple pulse in pulse (PIP) selections.
9. It should spot sizes large handpiece 4.5 cm2 (45mm x 100mm) surface area (640-1200 nm Quartz Light Guide)
10. It should have standard handpiece 4.5cm2 (40 mm X 10mm) surface area (six (6) Sapphire Filters)
11. It should have spectrum range 410 nm – 1200 nm.
12. It should have multiple filters and treatment indication(s) like:
a) 410nm - 1200 nm (Acne) optional
b) 510nm - 900 nm (Pigmented Lesions)
c) 560 nm - 1200 nm (Skin Rejuvenation; Wrinkles)
d) 580 nm - 580 nm (Vascular Lesions)
e) 640 nm - 1200 nm (Hair Reduction)
f) 690 nm - 1200 nm (Hair Reduction Skin Type V – VI)
13. It should have repetition rate 0.33 to 1 Hz.
14. It should have integrated contact cooling adjustable (Ambient Temp. to -10 degree C) with filtered water circulation system.
15. It should have capacitor 60,000 MF Capacitance.
16. Safety goggles -5 should be provided.
17. Eye shield and Cornea shield- 2 each.
18. Supplier should provide as suitable UPS with equipment.
19. Deleted
20. Demonstration is must.
21. Observation fellowship training for 2 concerned faculty members of the department for a period of 3 days, at an advanced internationally reputed laser centre.

Radiofrequency ablation (RFA) machine
RFA machine (Bipolar Diathermy) with following features:
1. Adequate safety to operator, patients, attendants and other medical apparatus connected.
2. Bipolar diathermy machine should have the following specifications:
i. Input voltage: 220-240 Volts
ii. Output Voltage: Variable from 500-600 ± 20%
iii. Output frequency: 4 MHz for unipolar and 1.7 MHz for bipolar.
iv. Output Power: 50 to 120 W
v. Output Waveforms: Cut (fully filtered), Cut and Coag (fully rectified), Coag (partially rectified), Fulguration (spark-gap) and Bipolar.
vi. Electronic display screen.
vii. Hand switch in the hand piece.
viii. Dual frequency footswitches with cables.
3. Standard accessories should include:
i. Neutral plates (3 different sizes)
ii. Two sets of surgical electrodes (loops, balls, knives, pin, fine wire, needle, sharp pointed electrodes, scalpel, coagulation ball). Loops should be round, oval, triangular and diamond shaped. Electrodes' proximal diameter should be 1.6 and 2.4 mm, to accommodate standard hand piece connection.
iii. RF surgipens.
iv. Bipolar forceps with cable.
v. Instruction manual.
vi. Earthing plate.
vii. Electrode protector stand.
4. There should be a digital display for power control.
5. RFA machine should be able to produce very sharp and precise cutting, negligible lateral heat production, adequate haemostasis and good cosmetic results.
6. Deleted

Trinocular Microscope with camera attachment
Trinocular Teaching Microscope with High Definition Digital Camera (for Projection)
□ Trinocular Microscope with high definition digital camera for Bright field microscopy, upgradable for Digital imaging and fluorescence.
□ Observation tube 45 degrees, IPD adjustment 50mm - 75 mm
□ High resolution Digital CCD Camera with resolution: 12.0 mega pixels
□ Eye-piece 10x with eye guard
□ Objectives – Nose Piece 5 Position to hold 5 objectives
o Obj. Plan Achromat 4x/0.10
o Obj. Plan Achromat 10x/0.25
o Obj. Plan Achromat 20x/0.40
o Obj. Plan Achromat 40x/0.65
o Obj Plan Achromat 100x/1.25 Oil
□ Mechanical stage - Mechanical stage with double plate flat top with stainless steel slide holder
□ Condenser – Condenser for Bright field phase contrast
□ Illumination – LED Illumination.
□

Hand foot UV phototherapy device
1. Unit should have 311nm NB-UVB lamps, min 4 numbers 36W lamps
2. It should work with 220V VAC 50Hz, 3.0 Amps with grounded plug.
3. It should include goggles and user's manual.
4. Unit should have sturdy, protective lamp shield and electronic digital timer.
5. It should be shipped fully assembled.
6. Mobile trolley should have the provision for 4 units/modules, two for hands and two for foot.
7. Unit should include UPS and back up batteries.
8. Ventilated fans should be included.
9. Deleted
10. Manufacturer and supplier should have ISO certification for quality standards.

SPECIFICATION FOR E.N.T. OPERATING MICROSCOPE

1. Heavy Mobile floor stand with mechanical brakes and good sturdy balancing system and locking device.
2. All the cables should be inside the stand and microscope arm for protection.
3. Motorized Zoom Magnification system with apochromatic optics
4. Magnification ranges: 2.0X to 25X or better continuously variable with eye piece 10X or 12.5X.
5. Field of View 25mm to 150 mm continuously variable.
6. Objective lens for 200mm,300mm and 400mm
7. Tilt able Binocular tube up to 180 degree.
8. Mortised zoom and focus **control on Pair of handles** and **foot switch.**
9. Microscope Head should be freely mobile to all the directions and can be maneuvered to laryngeal surgery.
10. **Xenon illumination** for day light character with **back-up** illumination of Xenon/Helogen lamp with power supply preferable inbuilt in sturdy floor stand.
11. Three chip CCD camera
12. 20"LCD monitor compatible with camera, mounted on the microscope arm
13. CD/ DVD recording device for documentation
14. Trolley (indigenous) to station recording device etc.
15. One Spare Xenon bulb
16. Microscope should be adaptable to Micromanipulator for LASER
17. Any other accessory which is must for functioning of the equipment like continuous voltage stabilizer etc.
18. Voltage 230, frequency 50-60 Hz
19. Deleted

Pure Tone Audiometer	
	1. Should be advance 2 channel clinical audiometer with High Frequency upto 20KHz.
	a. Air , Bone and Speech
	b. Free Field ,Speech and Pure Tone
	c. 2 Channel Binaural Speech
	d. Automatic Threshold
	e. Automatic Speech Scoring
	f. Tones : Pure, Warble and Pulsed Tones
	g. Masking : WN, NB and SN Masking
	2. Special Test:
	a. SISI Free Field
	b. Tone decay
	c. ABLB Test
	d. MLB
	e. MLD
	f. Loudness Balancing: 250 Hz, 500 Hz, 2kHz, 4kHz, 6kHz NB noise with direct comparison to standard curves
	3. Tone decay:
	a. Number of Channels : Two Independent Oscillators
	b. Frequency Range : 125 Hz – 20kHz
	c. Intensity Range : 10dB – 120dB (Air Conduction) -10dB – 80dB (Bone Conduction) 5dB and 1 dB Attenuators
	d. Frequency Resolution: Multi frequency
	4. Others
	a. All accessories for all the above units to be included.
	b. Facility for the free field audiometry to be included.
	c. Software for report, data storage and printing should be included.
	d. Regular calibration of equipment.
	e. Deeted
	Audiometer should have:-
	1. Facility to connect printer directly.
	2. Mention availability of Audiogram display.
	3. Should have internal memory for 500 patients.

	Impedance Tympanometer
	Impedance audiometer with contra ear testing facilities
	1. Multifrequency
	2. Probe Frequency- 226Hz, 678Hz,800Hz,1000Hz
	3. Pressure Range- +200 to – 400 daPa
	4. Volume Range - 0.1 ml to 6.0 ml
	5. Accuracy - ±5% to ±10 daPa
	6. Test Time- < 3 Seconds
	7. Reflex Mode
	8. Test Frequencies- 500, 1000, 2000, 4000 Hz ± 2%
	9. Test Method- Ipsilateral, Contralateral
	10. Noise (Band) - WN/HP/LP
	11. Intensities IPSI Lateral-70 to 110 dbHz
	12. Intensities Contra Lateral- 70 to 120 dbHz
	13. Intensity Setting- Automatic or Manual
	14. Eustachian Tube Function - Intact and Perforated mode
	15. ETF Pressure Range -+ 300 to – 400 daPa
	16. Test - Ipsilateral Reflex Test with AGC, Reflex Decay
	17. Test Programme- Reflex Test selectable
	18. Memory :test results of minimum 20 cases.
	19. Probe - Light weight, Hand Held , With Built in control light & switch.
	20. Printer- Silent Thermal Printer , (with paper printer facility)
	21. Display-Graphic LCD with adjustable contrast
	22. Power Supply- Mains 100-240 Volts, 50/60 Hz 25 VA
	23. PC Interface- USB Cable
	24. Automatic self calibration
	25. Regular calibration of equipment.
	26. Deleted

sho

Otoacoustic Emission (Screening unit)	
	1. TEOAE
	i. 1.5 to 4 kHz
	ii. Sample Rate - 16 kHz
	iii. Stimulus Level- ca. 80 dB SPL peak
	2. DPOAE
	i. DP 2 to 5 kHz
	ii. Frequency Ratio f2/f1- 1.2
	iii. Level Ratio L2/L1- Scissor Paradigm
	iv. Measurement Interval- 512 samples
	v. Frequencies f2- 1.5, 2, 3, 4, 6, 8, kHz (single & multiple selections possible)
	vi. Stimulus Levels L2- 35 to 65 dB HL (in steps of 5dB)
	vii. Also battery operated
	viii. Multiple test methods
	ix. Database for at least 200 tests
	x. Data transfer to PC via USB or wireless
	xi. Printing via PC/ Printer(Software should be included)
	xii. Stimulus intensity: 40 to 70 dB SPL (DPOAE). 83 dB
	xiii. Maximum output (Protection): 90 dB SPL.
	xiv.Power supply: (4) AA/UM-3/R6 - alkaline, lithium.
	xv. Battery life: Approximately 250-300 tests.
	xvi. Display: LCD-display 4 line x 10 character.
	xvii. Deleted
	It should be upgradable to diagnostic DPOAE and TEOAE
	Should have cavity test to check probe maintenance.
	Should have adjustable noise floor.
	Should have neonate modes for newborn hearing screening
	Should have ear tips of different size & both foam types.
	OAE should be upgradable.

Brainstem Evoked Response Audiometer (BERA) with ASSR	
	1. BERA:
	i. 2 channels.
	ii. Windows based.
	iii. Bone Conduction.
	iv. Integrated database.
	v. Pre-programmed auto tests.
	vi. Waveform reproducibility indication.
	vii. Split left/right recordings.
	viii. Simultaneous recording of condensation rarefaction stimuli.
	ix. Normative data indication.
	x. Wave editing during testing
	xi. Digital filter application (during and after test).
	xii. Add, subtract curves
	xiii. Low noise amplifier
	xiv. Ecoch G recordings with markers
	xv. Middle Latency
	xvi. Late Latency (P300, MMN etc.)
	xvii. Essential facility for OAE and NCT.
	2. ASSR:
	i. PreAmplifier
	ii. 2 channels
	iii. Gain 80 dB
	iv. Frequency Response upto 8000Hz
	v. Noise 6.0 nV Hz
	vi. CMR Ratio > 115 dB at any frequency between 0.1Hz & 10Hz.
	vii. Input Impedance > 10M
	viii. Impedance Check
	ix. Ranges 0.5k – 25k.
	3. Deleted
	Should have adjustable Intensity- Latency norms
	Should have stimulus type; should be- clik, pure tone & Filter.

Endoscopic sinus surgery set

A	Instruments	Quantity
1.	0 degree, 4mm, 18cm wide angle straight forward telescope, autoclavable	03
2.	30 degree, 4mm, 18cm wide angle straight forward telescope, autoclavable	02
3.	45 degree, 4mm 18cm wide angle straight forward telescope, autoclavable	02
4.	70 degree, 4mm, 18cm wide angle straight forward telescope, autoclavable	02
5.	0 degree, 2.7mm, 18cm straight forward telescope, autoclavable	01
6.	30 degree, 2.7mm, 18cm straight forward telescope, autoclavable	01
7.	Compatible handle for above telescopes	02
8.	Sickle knife, pointed, 19cm long	04
9.	Freer elevator should be double ended, semi sharp and blunt, 20cm long	04
10.	Small size oblong shaped Antrum curette, straight, 19cm	01
11.	Sinus curette 90deg and 55 deg curved	02 each
12.	Antrum curette forward cutting small size, 19cm length	01
13.	Double ended maxillary sinus ostium seeker, ball shaped ends diameter 1.2 and 2mm, length 19cm	02
14.	Cottle elevator double ended, semi sharp and blunt, graduated, length 20cm	04
15.	Conical suction tube should be malleable, with finger grip plate, luer lock,Outer diameter 2.5cm, working length 13cm	01
16.	Antrum cannula, Luer-lock, with cut-off hole, short curved, outerdiameter 3mm & 4 mm, length 12.5cm	01
17.	Bipolar coagulation forceps, insulated, angular, blunt, with integrated suction channel, with cut-off hole, length 19cm, to be supplied with Bipolar High frequency cord	01
18.	Bipolar Suction forceps, 15 deg upturned, with suction channel, working length 12.5cm, to be supplied with Bipolar High frequency cord	02
19.	Antrum punch for Left & Right side downward and forward cutting, working length 10cm	02
20.	Nasal cutting forceps, working length 13cm	02
21.	Antrum Punch, right and left side backward cutting, working length 10cm	02
22.	Antrum grasping forceps for maxillary sinus, jaws curved to right, fixed jaw curved 90 deg, opening 120 deg, movable jaw backward, length 10cm	01
23.	Blakesley nasal forceps, straight with working length 13cm	04
24.	Blakesley nasal forceps, Upturned 45deg & 90deg with working length 13cm	02 each
25.	Giraffe forceps 65deg upturn, cup jaws diameter 3mm with horizontal & vertical opening, length 12cm	02
26.	Biopsy & Grasping forceps, vertical opening, malleable sheath end, cupped jaws diameter 4mm, working length 18cm	02
27.	Sphenoid Punch, circular cutting circular punch, dia 4.5mm, working length 18cm	02
28.	Sphenoid Punch, 65 deg upturned, circular cutting, dia 3.5mm, length 17cm	02
29.	Nasal Scissors (Straight/right/left)	01
30.	Antrum punch(small) Pediatric size , backward cutting	01
31.	Biopsy forceps for nasopharynx	02
32.	Turbinectomy Scissors	02
33.	Tilley henckel forceps	04
34.	Through cut forceps(straight/ 45deg) – 18x3mm, 11.5x3.5mm	02 each
35.	Malleable suction	02
36.	DCR punch	02
37.	Frontal sinus seeker(Double ended 22cm- 70deg and 90deg)	01
5 years comprehensive warranty + 5 years AMC/CMC for the S. No 1 to 6 & 17, 1		

B. XENON LIGHT SOURCE AND LIGHT CABLE QUANTITY: 1

a. High light intensity with 300watt Xenon Lamp(with one extra spare bulb)
b. High colour temperature – more than 6000 K corresponds to brightness of sunlight resulting in high visual and photographic clarity.
c. Monitoring of lamp function.
b. Unit should be compatible with Communication Bus system for remote controlled operation of the various features along with other equipment. .
c. Lamp type- Xenon lamp, 300 watt
d. Colour temperature- approx. 6000 K
e. Light outlets - 1
f. Light intensity adjustment continuously adjustable from 0 to 100% either manually or automatically by the camera video-output signal.
g. FIBER OPTIC LIGHT CABLE: Size 3.5 to 5mm, length 250 -275cm should be European CE / US FDA approved.
h. Fiberoptic Head Band - 2
i. With 5 years comprehensive warranty & 5 years AMC/CMC.

C. SPECIFICATION FOR FULL HD CAMERA WITH RECORDING QUANTITY: 1

The system should be truly Digital Full HDTV Endoscopic video camera. The system should qualify all the essential criteria for full

A. HDTV system: •
   a) Maximum Resolution of 1920 X 1080 pixels,• Progressive scan .
   b) Consistent use of 16: 9 format for Input & Output to guarantee genuine HDTV.

The system should have following features:

i. HD CCD sensing chip should optimize image quality & Digital Source Sampling for maximizing hi-fidelity image transmission.
ii. Optimize to Any Size: The system should have integrated Optical Zoom (f= 14- 30 mm, 2X) to enhance the quality of Image size & cross specialty standardization of the camera system, regardless of the telescope used.
iii. The system should automatically optimize all settings. The system should be ready- to- use as soon as it is connected to the camera control unit.
iv. The system should have the facility to use a single camera control unit for all camera heads (either single chip or three chip) thus minimizing preparation & maximize interspeciality standardization.
v. The system should be Menu driven , thus allowing the surgeon to program the camera head functions as per the surgical needs & requirement.
vi. The system should be capable of controlling the light control function from the camera head buttons without any additional requirement of hardware & software.
vii. Automated digital image enhancer
viii. Should have USB/ Image capture interface for direct storage of still/ video sequences
ix. Screen diagonal – minimum 23".
x. Desk top with pedestal.

xi. HD LCD crystal display.
xii. Trolley for whole unit.

Technical Specifications:

a. Image sensor: 3X1/3'' CCD-Chip.
b. Pixels 1920 x 1080
c. AGC: Microprocessor controlled
d. Lens: Integrated Parfocal Zoom Lens, f=14mm-30m

All 3 parts A,B,C should be of same company

Shaver System Cum Micro Drill
A. It should be fully upgradable to one unit- six functions:
1. Shaver system for surgery of the paranasal sinuses and anterior skull base
2. Drill for Otology/NASAL/DCR & Skull Base Surgery
3. Sinus shaver
4. Micro saw (Oscillating type)
5. Drill for Otology/NASAL/DCR & Skull Base Surgery
6. Skeeter Drill(for stapedotomy)
B. Drill System:
1. Built in microprocessor controlled flow rate irrigation pump.
2. Integrated irrigation and coolant pump(silicon tubing)
3. Should be compatible with Micro ear drill handpiece & drill bits (universal)
4. Maximum Revolution for Shaver mode should be 5000 rpm or more
5. Maximum revolution for sinus burr mode should be 12,000 rpm
6. Maximum revolution speed for Drill mode should be 40,000 – 60,000 rpm.
7. Power supply 230-240 VAC, 50/60 Hz.
8. Easy to maintain and sterilizable.
9. Both Autoclavable and Disposable range of blades should be available.
10. Along with blades (2 each) – straight, curved (45, 60 & 90 degrees) and circular (laryngeal)
11. Multifunction foot switch
C. Handpiece Maintenance kit
1. Lubricating and cleaning
2. Voltage 220V AC at 50Hz / 22 V at 1 Hz
3. Air supply 0.35 to 0.60MPa
4. Capability – 350ml
5. Air Displacement – 60 L/min
D. Hand piece Straight / angled (compatible with micromotor drill) 02 each
E. Drill bit Cutting/polishing 0.5 or 0.6/1.0/2.0/3.0/4.0/5.0/6.0/7.0 or 8.0 mm 04 each
F. Saw blades – 04 nos (Separate handpiece for SAW to be provided)
G. Nasal drill bit with and without guard 02 Each

H. Deleted

Sl. No	ENT Workstation
1	Durable, steel casing, non-rusting, long lasting worktop
2	Minimum 02 large pull-out trays with dividers located in compartment under hinged cover
3	At least 1 drawer with dividers.
4	Containers for used instruments and waste
5	Min. 4 power sockets 230V
6	Right-handed use. Either mobile on castors or fitted as a fixture.
7	Operates on 230V (± 10%) – 50/60 Hz.
8	Writing drawer/dressing plate/X-ray viewer on the same horizontal platform with illumination. X ray viewer as different vertical attachment is not preferable.
9	Plateau for additional equipment like monitor, separate endoscopy recording system or such devices.
10	Extension fitted with halogen head mirror lamp with adjustable intensity.
11	Should be fitted with glove, cotton and tissue/ paper dispenser drawer.
12	Separate endoscopy recording system (from the same manufacturer).
a)	This recording system should be separate from the imaging and recording system integrated with the microscope.
b)	For recording purposes for digital and video images with all essential software and essential back up and accessories.
c)	High performance using at least i-5 processor or better. At least 500 GB of memory. Capable of recording at least 15 hours of video or at least 10,000 images.
d)	At least 2 LAN ports.
e)	Capable of integration with HIS and PACS via standered interfaces.
f)	The system should be compatible for attachment to the endoscope. Should be able to enter patient's details and to record and store for images.
g)	Should have ability to generate dvi and/or mpeg4 videos. Ability to generate jpeg and tiff images of at least 600 dpi. Capable of taking at least 180 images per second.
h)	At least 15 inch Full HD Monitor with foldable attachment on main unit of recording system. 40-45o tillable backwards. Viewing angle 170o - 180° horizontal and vertical.
i)	Still photo/video mode is selected by foot pedal or by shutter release on the touchscreen. The findings can be tagged directly on the touchscreen using finger touch.
j)	Touch screen should also be operable with gloves and also by mouse & keyboard. Result finding tagging by touching the image. Mouse and keyboard wireless attachment.
k)	Capable of comparing at least 2- 4 stills, single image view and zoom.
l)	Capable of connecting two monitors with automatic switching between them.
m)	Should have incorporated global shutter technology so that it can be used for stroboscopy.
n)	Facility for photo creation from recorded videos.
o)	C-MOS technology with high sensitivity to light.
p)	Data can be sent to printer via LAN and be saved directly to USB stick or internal memory.
q)	A laser coloured multifunction (copy, scan and print) printer for printing reports be provided with the device. It is permissible for that a printer be of different manufacturer but should be European CE or US FDA approved.
r)	Should be compatible with Microsoft windows XP, 7, and/or the latest versions.
s)	Footswitch for freezing function.
t)	It should have custom designed special case for keeping the unit.
13	Cautery power output with banana sockets in front panel: Integrated with the main unit. 50 Watt high frequency electrosurgical unit, Monopolar accessories & set of cautery probes
14	Noiseless preferably separate Suction system.
a)	Supplied with suction hand piece and tubing. Maintenance-free.
b)	Capacity: 55 ltr/min to 70 ltr/min, vacuum: -80 to -98kpa, with secretion collection of 1ltr/1.5ltr with automatic secretion canister evacuator system.
c)	Suction should have automatic start up feature while removing suction cannula adaptor from the support.
d)	Should have facility of hose rising the suction tube to avoid any growth of Bactria/fungus in the suction tubing.
e)	Suction Cannulas 1.0 to 4.0 mm (Preferably 4 sizes).
15	Compressed air system complete with spray hand piece (autoclavable) with tubing and 3 spray bottles.
a)	Should preferably have compressed air system have a tank for compressed air so that compressor is not required repeatedly.
b)	Powder and liquid atomizers with holder for atomizers (nozzles removable)

c)	Adjustable pressure by means of regulator valve
d)	Automatically activated via sensor when hand piece is removed from its holder
e)	Manometer in front panel
f)	Low maintenance
g)	Max. pressure: 0.1 to 4 bar
h)	Politzer olive universal sizes, fits directly into compressor hand piece
i)	Suction tube cleaner with exchangeable reusable stainless steel adapter.
16	Telescopes
a)	0° & 30° - 2.7 mm - 110 -140 mm working length
b)	0° & 30° - 4 mm - 175 -180 mm working length
c)	70° with handle (angle of view, 4 mm diameter, 175 -180 mm working length)
d)	Oto-endoscope 0° & 30° (Length 5-6cm approx, diameter 2.7mm).
e)	90°Tele laryngo-pharyngoscope, magnifier scope (4X), fibre optic light transmission, air insufflation channel, adjustable focus.
	Suitable fibroptic chords or light carriers for endoscopes. Disinfection and warming quivers for endoscopes preferably placed in extension arm (preferably for 5 endoscopes). Preheating quivers disinfection quivers, disinfection quivers, disinfection time control, removable and disinfectable quivers for flexible scopes. Both USFDA and European CE approved and inclusion subject to demonstration if asked for by experts.
17	Warm water irrigation system
a)	With for ear syringing and caloric testing.
b)	Electronic temperature control of water temperature.
c)	Autoclavable handles with snap closure system and fine regulation valve.
d)	Should preferably have a separate stainless steel tank.
e)	Should have sinus drainage tube as well as front cannulas and a water supply hose and autoclavable water filter with cartridge.
f)	Disposable filters with short life are not permissible.
18	Ear rinse cup with ear rinsing funnel with active motor system & automatic liquid bottle drainage system preferably on swivel arm. Flow adjustable in ml per minute.
19	Pre-heater for up to 60 mirrors of different sizes mounted on pull-out tray. Removable block for sterilization. Mirror re-warmer with the single handed heating
20	Microscope
a)	With 3-5 step magnification changers
b)	Mounted on ENT unit
c)	Switched on/off from control panel with dimmer or Switched automatic on/ off, on the movement of the microscope Column
d)	10X Object F = 200-300 mm with fine focusing
e)	Binocular vision
f)	3 to 5 step magnification changer
g)	Inbuilt LED light source in the camera head.
h)	HD Camera with microscope with a facility to take images, video with arching software.
i)	Supplied with a Laptop (i5 processor, 6 GB RAM, 64 BIT operating system, ≥3.3 GHz, at least 2 years onsite warranty covering physical damage with 3 years extended warranty of the manufacturer). It is permissible for that a laptop be of different manufacturer but should be European CE or US FDA approved.
j)	Digital Video Camera with PAL/NTSC video system, CCD sensor 1/3"
k)	Automatic white balance with control on base unit and also on camera. Integrated Zoom
	Instrument coupling for rigid endoscopes. Enlarged view.
l)	Preset function keys on camera for control of functions and focus.
m)	Switchable 230/240 VAC
n)	C-mount adaptor 28mm, waterproof
o)	Long camera cable with minimum length 300cm.
p)	16" TFT monitor, LCD flat screen. Not same as in point number 12.
q)	Swivel arm mounted on microscope column for video monitor.
r)	Aseptic splash protection for the objective lens.
s)	Sterilizable hand grip covers and caps.
21	Both USFDA and European CE approved and inclusion subject to demonstration if asked for by experts.
22	Integrated fibre optic light source for telescopes with 4 fibre optic cable. Cold light source (Preferably LED) Intensity adjustable from 50- 150W. Heat absorbance filter and ventilation system. Four outlets for light cable. It will be preferable if light source is placed near the
23	Fibroptic head light.
a)	Adjustable & comfortable head band vertical and side to side adjustable. Preferably automatic activation of head light.
b)	Approximately 300 cm fibroptic chord.

c)	Focal height 20-30 cm.
d)	Adjustable light spot diameter.
e)	Spare lamp for head light.
f)	Compatible with light source housed in main unit.
	Doctor's Stool with adjustable backrest and height
a)	Pneumatic cylinder with height adjustable
b)	Min. seat height: 46 cm to 55cm
c)	Max. seat height: 50cm to 75cm
d)	360° rotatable
e)	Seat Ø 30 cm to 40cm
f)	Adjustable backrest (height and depth)
g)	Cross-type base
h)	Safety castors
25	Patient Examination & Treatment Chair
a)	Motorized and ergonomically designed facilitating the postures of both Doctor and patient.
b)	Seat should have motorized lifting device. Lifting range 30 cm. Height 50 to 82 cm.
c)	Integrated foot switch for easy adjustment of height.
d)	Should have complete rotation 360 degree with locking device.
e)	Armrest should be comfortably padded and can be folded back for enabling easy sitting of overweight
f)	Backrest should recline to horizontal position and -10O to Trendelenberg position and adjustable head rest.
	Arm rest and leg rest should simultaneously fallow the chair's sequence of movement until it reaches the complete horizontal position. Electric back rest adjustment.
g)	Head rest should have adjustable height.
h)	Electric rotation 180O.
i)	Should confirm US FDA and European standards.
j)	Power 220-240 Volts/50 Hz.
26	Separate Instrument Cabinet Unit
a)	Should have stainless steel top with large instrument surface with aluminium trays and set of stainless steel dividers.
b)	Dust cover, integrated waste container with foot pedal.
c)	Removable drawer for used instrument along with compartment for bottles.
d)	It should have drawers for storage and instrument drawers with aluminium, trays and set of stainless steel dividers.
e)	The unit should be mobile on castors.
27	Head mirror rest with automatic on/off switch.
28	Appropriate UPS with 15 minutes' backup for the whole equipment.
29	Other terms and conditions
a)	Warranty 5 years from the date of installation.
b)	CMC for 5 years. It should cover all components of unit (i.e. microscope, cold light source, suction system, head lamp suspension, fibre-optic head light, examination chair, doctor's chair, endoscopy centre including endoscopes, camera and monitor etc.)
c)	An undertaking to be provided by the principal/manufacturer of the system for availability of spares for 10 years from the date of installation.
d)	Technical bid should mention complete specifications of the unit. A pen/pencil diagram of the unit is to be provided with the technical bid which should show all specifications labelled as numbers of the specifications mentioned in the tender.
	This document attachment is not to be taken as replacement of original brochure which is to be essentially provided. No photocopy of the brochure is to be attached.
e)	A separate compliance report (other than technical bid) is required.
f)	A point wise technical compliance report prepared in the same sequence as specifications are mentioned in the tender must be provided. The document should clearly indicate that weather the compliance on each specification has been met or not, and any deviation if present should be mentioned. A separate column showing the location of particular specification on brochure should be added.
g)	All essential components should of the same manufacturer.

Ear Surgery Instruments

SI NO.	Description	Quantity
1	Chisel, 2mm. Jenkins. 14cm/5.5".	02 Nos.
2	Chisel, 4mm. Jenkins. 14cm/5.5".	02 Nos.
3	Chisel, 8mm. Jenkins. 14cm/5.5".	02 Nos.
4	Gouge, 2mm. Jenkins. 14cm/5.5"	02 Nos.
5	Gouge, 4mm. Jenkins. 14cm/5.5".	02 Nos.
6	Gouge, 8mm. Jenkins. 14cm/5.5".	02 Nos.
7	Mallet. OD 20mm. 100gms. 16.5cm/6.5".	02 Nos.
8	Nibbler/Rongeur, S/A. Lempert. 3mm-Jaw.Straight 19cm/7.5"	03 Nos.
9	Punch/Rongeur. Kerrison. 2mm-Up Bite. 9cm/3.25".	02 Nos.
10	Punch/Rongeur, Kerrison. 4mm Up Bite. 9cm/3.25".	02 Nos.
11	Curette, No:4/0. Lempert. Hollow handle. 21cm/8.25".	04 Sets
12	Curette, No:2/0. Lempert. Hollow handle. 21cm/8.25".	04 Sets
13	Curette, No:1.Lempert. Hollow handle. 21cm/8.25".	04 Sets
14	Seeker, Dundas-Grant. 15cm/6".	03 Nos.
15	Raspatory/Rugine. Lempert. 5mm. 16cm/6.5".	04 Nos.
16	Elevator, Farabeuf. 8mm. Straight 15cm/6".	04 Nos.
17	Elevator, Farabeuf. 8mm. Curved 15cm/6".	04 Nos.
18	Retractor, Mollison. 2x2 Prong-Sp. Curved13cm/5.25".	03 Nos.
19	Retractor, Mollison. 4x4 Prong-Sp. Curved16cm/6.25".	06 Nos.
20	Retractor, Plester-Jansen. Right-Solid Blade 14cm/5.5"	03 Nos.
21	Retractor, Plester-Jansen. Left-Solid Blade 14cm/5.5"	03 Nos.
22	Suction Tube. Frazier/Lempert. Set of 4. 1mm St-4mm. Length 19cm/7.5".	06 Nos. 06 Nos. 06 Nos. 06 Nos.
23	Suction/Irrigation Tube. Fisch/House. 4.0mm x 2.5mm/12 x 8Ch. Length 16cm/6.5"	03 Nos.
24	Ear Specula. Hartmann. Set of 3. i3/4/5mm. Black. 3.5cm.	06 Nos.
25	Ear Specula. Heath. Set of 4. I4/5/6/7mm 5cm	03 Nos.
26	Eustachian Catheter, Kramer/Hartmann. i2mm/6 Tip. 14cm/5.5".	03 Nos.
27	Jobson Horne Probe, D/E. Serrated. Tip & smooth Straight Ring. 14cm/5.5".	06 Nos.
28	Hook, Cerumen/Wax. K E M. 15cm/6".	03 Nos.
29	Loop, wire. 3mm. Billeau. 16cm/6.5".	03 Nos.
30	Curette, Buck. 2mm. Straight Sharp.15cm/6".	03 Nos.
31	Curette, Buck. 3.5mm. Straight Sharp.15cm/6".	03 Nos.
32	Myringotome. Sexton. with protective sleeve.18cm/7".	03 Nos.
33	Myringotome, Upward Cutting. Trautmann Bynt. 18cm/7".	03 Nos.
34	Forceps, Aural, 1x2 Tth., Wilde. 12cm/5"	06 Nos.
35	Forceps, Aural, Serrated tips. Wilde. 12cm/5"	06 Nos.
36	Forceps, Hartmann. Fine. 55mm. Length 12.5cm/5".	06 Nos.
37	Forceps, Tilley. Fine. 55mm. Length 12.5cm/5".	06 Nos.
38	Forceps, Granulation. Heath. 8cm/3.25".	06 Nos.
39	Forceps, Crocodile, Fine 1x2 Jaws, Hartmann. 8cm/3.25"	12 Nos..
40	Forceps, Crocodile. 2mm. Cup Jaws.Hartmann. 8cm/3.25".	06 Nos.
41	Forceps, Ear. Crocodile. Fenestrated Cup Jaw. Henckel/Struempel. 8cm/3.25".	06 Nos.
42	Forceps, Crocodile, Grunwald. Punch Action Jaw. Hartmann. 8cm/3.25".	06 Nos.

43	Snare, Aural, Ballance/Krause. 15cm/6".	01 No.
44	Snare, Wire. Aural. SS. 36 S.W.G.Pkt. of 12.	01 No.
45	Retractor, Plester. 2 Prong X Right-Solid blade.11cm/4.5"	03Nos.
46	Retractor, Plester. 2 Prong X Left-Solid blade.11cm/4.5".	03Nos.
47	Retractor, Endaural. Lempert. With 2Pair Blades and 1 Temporal Muscle Blade9cm/3.5"	-03Nos.
48	Speculum, Endaural. Lempert/Storz. 14cm/5.5"	03Nos.
49	Holmgren Ear Speculum. S/R. Black. 6mm.	03Nos.
50	Holmgren Ear Speculum. S/R. Black. 7mm.	03Nos.
51	Rosen Slotted Speculum. Round. 4mm.Black. 38mm.	03Nos.
52	Rosen Slotted Speculum. Round. 5mm.Black. 38mm.	03Nos.
53	Rosen Slotted Speculum. Round. 6mm.Black. 38mm.	03Nos.
54	Rosen Slotted Speculum. Round. 7mm.Black. 38mm.	03Nos.
55	Zoellner Raspatory. Curved Rt. 7.5cm.	2set
56	Zoellner Raspatory. Curved Lt. 7.5cm.	2set
57	Zoellner Arrowhead. Curved Rt. 7.5cm.	2set
58	Zoellner Arrowhead. Curved Lt. 7.5cm.	2set
59	Zoellner Sickle Knife. Up cutting. 7.5cm.	2set
60	Zoellner Sickle Knife. Down cutting. 7.5cm.	2set
61	Zoellner Raspatory/Hook. Up. 7.5cm.	2set
62	Zoellner Raspatory/Hook. Down 7.5cm.	2set
63	Zoellner Pick. 0.5mm. Up. 7.5cm.	2set
64	Zoellner Pick. 0.5mm. Down 7.5cm.	2set
65	Zoellner Pick. Straight 7.5cm.	2set
66	Shea Incising Knife. Matted 17cm.	2 each
67	Shea Curette. Matted 17cm.	2 each
68	Shea Elevator. Lt. Matted 17cm.	2 each
69	Shea Elevator. Rt. Matted 17cm.	2 each
70	Shea Pick. Sharp. Curved Matted 17cm.	2 each
71	Shea Fenestra Hook. 25ø Angle. Matted 17cm.	2 each
72	Shea Fenestra Hook. 45ø Angle. Matted 17cm.	2 each
73	Shea Fenestra Hook. 90ø Angle. Matted 17cm.	2 each
74	Shea Fenestra Hook. 90ø Angle. Short. Matted17cm.	2 each
75	Shea Pick. 90ø Angle. Blunt. Matted 17cm.	2 each
76	Shea Anterior Crurotomy Knife. Matted 17cm.	2 each
77	Rosen Knife. Matted 16cm.	03 Nos.
78	Rosen Elevator. 3mm. Bayonet Shaft. Matted 20cm.	03 Nos.
79	Rosen Elevator, for drum. Matted 16cm.	03 Nos.
80	Rosen Mobiliser. 1.5mm. 2nd Matted 16cm.	03 Nos.
81	Rosen Curette. 3/0. Oval. Matted 16cm.	03 Nos.
82	Rosen Curette. 2/0. Oval. Matted 16cm.	03 Nos.
83	Plester Flap Knife. Oval. Vertical. 2mmWx4mmL. Matted 16cm.	03 Nos.
84	Plester Flap Knife. Oval. Vertical. 2.5mmWx3.5mmL. Matted 16cm.	03 Nos.
85	Plester Flap Knife. Oval. Vertical. 2.5mmWx4.5mmL. Matted 16cm.	03 Nos.
86	Plester Sickle Knife. Double Edge. Slightly. Curved Matted 16cm.	03 Nos.
87	Sickle Knife. Kley. Straight Matted 16cm.	03 Nos.
88	Sickle Knife. 6mm. Curved Matted 16cm	03 Nos.

89	Sickle Knife. 8mm. Curved Matted 16cm.	03 Nos.
90	Round Knife. Straight 1mm. Matted 16cm.	03 Nos.
91	Round Knife. Straight 2mm. Matted 16cm.	03 Nos.
92	Round Knife. 2mm. 45ø. Matted 16cm.	03 Nos.
93	Round Knife. 3mm. 45ø. Matted 16cm.	03 Nos.
94	Round Knife. 1mm. 90ø. Matted 16cm.	03 Nos.
95	Round Knife. 2mm. 90ø. Matted 16cm.	03 Nos.
96	Round Knife with Serrated Edges. 3mm. Matted16cm	03 Nos.
97	Revolving Knife. 3mm-Radial. Schuknecht Matted 16cm.	03 Nos.
98	Revolving Knife. 3mm-Axial. Schuknecht Matted 16cm.	03 Nos.
99	House Elevator. 1mm. Matted 16cm.	03 Nos.
100	Straight, Pick Matted 16.5cm.	06 Nos.
101	Pick, Short-Curved Matted 16.5cm.	06 Nos.
102	Pick, Long-Curved Matted 16.5cm.	06 Nos.
103	Pick, 0.3mm. 45ø. Matted 16cm.	06 Nos.
104	Pick, 0.4mm. 90ø. Matted 16cm.	06 Nos.
105	Pick, 0.6mm. 90ø. Matted 16cm.	06 Nos.
106	Fisch Hook. 0.2mm. Footplate. Matted 16cm	06 Nos.
107	Ball Probe, Goldman. 0.5mm. 45ø. Matted16cm.	03 Nos.
108	Ball Probe, Goldman. 0.8mm. 45ø. Matted16cm.	03 Nos.
109	Ball Probe. 0.8mm. 90ø. Matted 16cm.	03 Nos.
110	Larkin/Fisch Hand Trephine. 0.8mm. Matted	02 Nos.
111	Larkin/Fisch Hand Perforator. 0.6mm. Matted 7cm.	02 Nos.
112	House Measuring Rods. Set of 4.	02 sets
113	Piston Depth Gauge. Shea. Matted 17.5cm. Piston Depth Gauge. Fisch. Matted16.5cm.	02 Nos.
114	Teflon Piston Cutting Jig.	02 Nos.
115	Curette, House. Straight 1mm/1.5mm. Length15cm.	03 Nos.
116	Curette, House. Straight 2mm/2.5mm. Length15cm.	03 Nos.
117	Curette, House. Ald. 1mm/1.5mm. Length15cm.	03 Nos.
118	Forceps, Bone Nibbling. Wilson. Down Cutting. 15cm.	03 Nos.
119	Forceps, Ossicle/Incus Holding. Derlacki.12cm	06 Nos
120	Forceps, Piston Holding. 6mm. Jaw. Matted 8cm.	02 Nos.
121	Forceps, Crocodile. Serratedated .6mm/3.5mm. JawsStraight Matted 8cm.	03 Nos.
122	Forceps, Crocodile. Serratedated .8mm/4mm. Jaws Straight. Matted 8cm.	03 Nos.
123	Forceps, Crocodile. Serratedated .8mm/4mm. Jaws. Rt.Matted 8cm.	03 Nos.
124	Forceps, Crocodile. Serratedated .8mm/4mm. Jaws.Lt. Matted 8cm.	03 Nos.
125	Forceps, Crocodile. Serratedated .8mm/4mm. Jaws. Up. Matted 8cm.	03 Nos.
126	Forceps, Crocodile. Serratedated .8mm/4mm. Jaws. Down Matted 8cm.	03 Nos.
127	Scissors, Micro Ear. Straight 4mm. Blades Matted 8cm.	06 Nos
128	Scissors, Micro Ear. Curved Rt. 4mm. Blades Matted 8cm.	06 Nos
129	Scissors, Micro Ear. Curved Lt. 4mm. Blades Matted 8cm.	06 Nos
130	Scissors, Micro Ear. Up. 4mm. Blades Matted 8cm.	02 Nos
131	Malleus Nipper, House-Dieter. Upward Matted 8cm.	02 Nos
132	Malleus Nipper. House-Dieter. Downward Matted 8cm.	02 Nos

133	Malleus Nipper. House-Dieter. Right Matted 8cm.	02 Nos
134	Malleus Nipper. House-Dieter. Left Matted 8cm	02 Nos
135	Suction/Irrigation Tube. Fisch/House. 2.5mm x 2.0mm/ 8 x 6Ch. Length 16cm/6.5".	06 Nos
136	Suction Tube, Zoellner. 2mm. Length 15cm/6".	10 Nos
137	Suction Tube, Wullstein. 2mm. Length 14cm/5.5"	10 Nos
138	Adaptor, House/Fisch with cut-off. Luer.5.5cm.	03 Nos
139	Adaptor, Wullstein with cut-off hole. Luer cone. 10cm.	03 Nos
140	Cannula, Verhoeven. .3mm/26G. Luer. 7.5cm.	06 each
141	Cannula, Verhoeven. .4mm/25G. Luer. 7.5cm.	06 each
142	Cannula, Verhoeven. .7mm/22G. Luer. 7.5cm.	06 each
143	Cannula, Verhoeven. 1.0mm/19G Luer. 7.5cm.	06 each
144	Cannula, Verhoeven. 2mm/14G. Luer. 7.5cm.	06 each
145	Cannula, Verhoeven. 2.6mm/12G. Luer. 7.5cm.	06 each
146	Facia graft press	01 No.
147	Micro instrument tray- SS with Silicon sheet	02 Nos.
	Note for Instruments sets	
	TITANIUM INSTRUMENTS :	
1	All Instruments should be of international quality and made from surgical grade titanium.	
2	The "Hinges" should be rust proof	
3	The instruments should be guaranteed against metal fatigue and rust for atleast 02 years. Further repair should be available for next 5 years.	
4	The instruments surface should be non-reflective.	
5	The brand name along with catalogue number should be etched on the instruments.	
6	The other instruments should be made of high grade titanium, they should not magnetize with use and the surface should be non-reflective and glare free under OT light.	
7	Satisfactory Performance Certificate from a Central Government Hospital (AIIMS, PGI, SGPGIetc.) is mandatory.	
8	The instruments might be call for demonstration and approval. It is the sole discretion of the department to approve or disapprove the quality.	
	STAINLESS STEEL INSTRUMENTS : Sterilized quality	
1	All Instruments should be of ~~imported~~ and made from surgical grade stainless steel. Documentary evidence required for grade of material.	
2	The "Hinges" should be rust proof	
3	The instruments should be guaranteed against metal fatigue and rust for 02 years.	
4	The instruments surface should be non-reflective.	
5	The brand name along with catalogue number should be etched on the instruments.	
6	Deleted	
7	The instruments might be call for demonstration and approval. It is the sole discretion of the department to approve or disapprove the quality..	
	Septo- Rhinoplasty Set	

1	Retractor, Nasal. Aufricht. 4cm. Blade.16.5cm/6.5.	2
2	Retractor, Nasal. Aufricht. 6cm. Blade.16.5cm/6.5".	2
3	Retractor, Kilner. Alae. 2 Prongs. Sharp. 10mm wide. 10cm/4".	2
4	Retractor, Kilner. Alae. 2 Prongs. Sharp. 13mm wide. 10cm/4".	2
5	Retractor, Fomon/Joseph. 2 Prongs-Ball tipped. 10mmW. Length 16cm/6.25".	2
6	Retractor. Cottle. 2 Prongs-Sharp. 12mmW. Length 14cm/5.5".	2
7	Retractor. Cottle. 2 Prongs-Lt. Sharp.12mmW. Length 14cm/5.5".	2
8	Retractor. Cottle. 4 Prongs. Blunt.10mmW. Length 14cm/5.5".	2
9	Retractor, Alar. Cottle.13mmWx22mmD.15cm/6".	2
10	Hook, Tenaculum. Shallow Curved , 15cm/6".	2
11	Hook, Tenaculum. Deep Curved , 15cm/6".	2
12	Hook. Skin. 2mm. Gillies. 16cm/6.25".	6
13	Hook. Skin. 4mm. Gillies. 16cm/6.25".	6
14	Hook. Skin. 2mm. Mcindoe. 19cm/7.25".	2
15	Hook. Skin. 3mm. Mcindoe. 19cm/7.25".	2
16	Hook. Skin. 4mm. Mcindoe. 19cm/7.25".	2
17	Knife, Joseph. Button end. Straight 15cm/6"	2
18	Skin Grafting Handle. Rt. Hand. Watson-modification; with 20 Blades.	2
19	Spare Blades for Skin Graft Knives.Sterile.	2
20	Elevator, Farabeuf. 8mm. Curved 15cm/6".	2
21	Elevator, Septum. Masing. D/E. 22cm/8.75	2
22	Forceps , Adson. 1mm. Cross.Serratedated . 12cm/4.75"	4 each
23	Forceps , Adson. 1mm. 1x2 Tth. 12cm/4.75"	4 each
24	Forceps , Adson. 1.5mm. Serratedated 12cm/4.75"	4 each
25	Forceps , Adson. 1.5mm. 1x2 Tth. 12cm/4.75"	4 each
26	Fine Operating/Iris Scissors, SS. Straight 9cm/3	4 each
27	Fine Operating/Iris Scissors, SS. Curved 9cm/3.5".	4 each
28	Joseph Scissors, SS. Straight 14cm/5.5".	2 each
29	Joseph Scissors, SS. Curved 14cm/5.5".	2 each
30	Metzenbaum Scissors, Straight 10cm/4".	4 each
31	Metzenbaum Scissors, Curved 10cm/4".	4 each
32	Metzenbaum Scissors, Straight 12.5cm/5".	4 each
33	Metzenbaum Scissors, Curved 12.5cm/5".	4 each
34	Scissors, Reynolds. . 13cm/5.25".	4 each
35	Scissors, Reynolds. . 15cm/6".	6 each
36	Jameson Scissors. . 14cm/5.5".	6 each
37	Chisel. 6mm. Cottle. Graduated. 18cm/7.25".	2 each
38	Chisel. 7mm. Cottle. Graduated. 18cm/7.25".	4 each
39	Chisel. 9mm. Cottle. Graduated. 18cm/7.25".	2 each
40	Chisel. 12mm. Cottle. Graduated. 18cm/7.25".	2 each
41	Chisel. Fishtail. 16mm. Cottle. 18cm/7.25".	2 each
42	Osteotome. Walter. 2mm. 19cm/7.25".	2 each
43	Osteotome. Walter. 3mm. 19cm/7.25".	2 each
44	Osteotome. Walter. 4mm. 19cm/7.25".	2 each
45	Osteotome. Walter. 7mm. 19cm/7.25".	2 each
46	Osteotome. Walter. 9mm. 19cm/7.25".	2 each
47	Osteotome. Walter. 12mm. 19cm/.25".	2 each
48	Chisel, Nasal. Mcindoe. 11mm. 16cm/5.5".	2 each

49	Chisel, Nasal. McIndoe. 13mm. 16cm/5.5".v	2 each
50	Chisel, Nasal. Silver/Masing. Straight18cm/7".	2 each
51	Chisel, Nasal. Silver/Masing. Cvd.Rt. 18cm/7".	2 each
52	Chisel, Nasal. Silver/Masing. Cvd.Lt. 18cm/7".	2 each
53	Walsham forceps Right	2nos
	Walsham forceps Left	2 nos
54	Ash forceps	2
55	Ballenger swivel	4
56	Kerrison's rongeur (Small & large)	4 nos
		4 nos
57	Luc's forceps –small	4
58	Nasal Scissors straight	4 nos
	Nasal Scissors curved	4 nos
59	Nasal gouge	4
60	Mallet -100g	2
61	Bone Nibbler (single action & double action)	4 nos
		4 nos
	Note for Instruments sets	
	TITANIUM INSTRUMENTS :	
1	All Instruments should be of international quality and made from surgical grade titanium.	
2	The "Hinges" should be rust proof	
3	The instruments should be guaranteed against metal fatigue and rust for atleast 02 years. Further repair should be available for next 5 years.	
4	The instruments surface should be non-reflective.	
5	The brand name along with catalogue number should be etched on the instruments.	
6	The other instruments should be made of high grade titanium, they should not magnetize with use and the surface should be non-reflective and glare free under OT light.	
7	Satisfactory Performance Certificate from a Central Government Hospital (AIIMS, PGI, SGPGI etc.) is mandatory.	
8	The instruments might be call for demonstration and approval. It is the sole discretion of the department to approve or disapprove the quality.	
	STAINLESS STEEL INSTRUMENTS :	
1	All Instruments should be of imported and made from surgical grade stainless steel. Documentary evidence required for grade of material.	
2	The "Hinges" should be rust proof	
3	The instruments should be guaranteed against metal fatigue and rust for 02 years.	
4	The instruments surface should be non-reflective.	
5	The brand name along with catalogue number should be etched on the instruments.	
6	Deleted	
7	The instruments might be call for demonstration and approval. It is the sole discretion of the department to approve or disapprove the quality.	
	Tonsillectomy & Adenoidectomy Set	

1	Mouth Gag, Frame-Davis Boyle; with Fixed Teeth Plate. Complete with 3 Tongue Blades. Child.	2
2	Mouth Gag, Frame-Davis Boyle; with Fixed Teeth Plate. Complete with 5 Tongue Blades. Adult.	2
3	Mouth Gag, Frame-Davis Meyer; with Sliding Teeth Plate. Complete with 5 Tongue Blades. Adult.	2
4	Mouth Gag, Frame-Davis Boyle; with Fixed Upper Teeth Plate. Complete with 5 slottedDoughty blades. Adult.	2
5	Draffin Bipod, with 4 Rings. 48cm/19".	2
6	Negus Jack/Chest Support with rack action.	2
7	Forceps, Tonsil holding. Denis Browne. Small. 18cm/7".	2
8	Forceps, Tonsil Holding. Denis Browne. Large. 20cm/8".	2
9	Tonsil Dissector & Pillar Retractor. Beavis. 20cm/8".	2
10	Tonsil Dissector 9mmW & Pillar Retractor. Hurd. 20cm/8".	2
11	Remington Hobb Diathermy Forceps. Serratedated. Straight 25cm/10".	2
12	Forceps, Tonsil Artery. Birkett/Schnidt. 2nd Curved. 19cm/7.5".	2
13	Forceps, Tonsil Artery. Negus. 1 Curved. 19cm/7.5".	2
14	Forceps, Tonsil Artery. Negus. 2 Curved. 19cm/7.5".	2
15	Forceps, Tonsil Artery. Wilson. D Curved. 19cm/7".	2
16	Snare, Tonsil. Eves. Sliding Action. 28cm/11".	2
17	Snare Wire. Tonsil. 24 SWG. Packet of 12.	2
18	Needle, Suturing. Tonsil. Irwin Moore. Curved Rt. 20cm/8".	2
19	Needle, Suturing. Tonsil. Irwin Moore. Curved Lt. 20cm/8".	2
20	Pusher/Knot tier. Negus. 20cm/8". Curette, Adenoid; with cage. St. Clair Thomson. CP/SS Handle. 8mm, 24cm/9.25".	2
21	Curette, Adenoid; with cage. St. Clair Thomson. CP/SS Handle. 10mm, 24cm/9.25".	2
22	Curette, Adenoid; with cage. St. Clair Thomson. CP/SS Handle. 12mm, 24cm/9.25".	2
23	Curette, Adenoid; with cage. St. Clair Thomson. CP/SS Handle. 14mm, 24cm/9.25".	2
24	Curette, Adenoid; with cage. St. Clair Thomson. CP/SS Handle. 16mm, 24cm/9.25".	2
25	Curette, Adenoid; with cage. St. Clair Thomson. CP/SS Handle. 18mm, 24cm/9.25".	2
26	Forceps, Peritonsillar Abcess. St. Clair Thomson/Quincy.	2
27	Cannula, Suction. Yankauer. CP. 27cm	2
28	Tongue Depressor. Lack. Set of 3.	2
29	Tongue Depressor. Flat. 12.5cm./5".	2
30	Tongue Depressor. Flat. Dcv. 18cm/7".	2
31	Forceps , Swab Holding. Krause. 28cm/11".	2
32	Negus Jack/Chest Support with rack action.	2
33	Uvula Retractor	1
34	Bayonett forceps	2
	Note for Instruments sets	
	TITANIUM INSTRUMENTS :	
1	All Instruments should be of international quality and made from surgical grade titanium.	
2	The "Hinges" should be rust proof	

3	The instruments should be guaranteed against metal fatigue and rust for atleast 02 years. Further repair should be available for next 5 years.	
4	The instruments surface should be non-reflective.	
5	The brand name along with catalogue number should be etched on the instruments.	
6	The other instruments should be made of high grade titanium, they should not magnetize with use and the surface should be non-reflective and glare free under OT light.	
7	Satisfactory Performance Certificate from a Central Government Hospital (AIIMS, PGI, SGPGI etc.) is mandatory.	
8	The instruments might be call for demonstration and approval. It is the sole discretion of the department to approve or disapprove the quality.	
	STAINLESS STEEL INSTRUMENTS :-	
1	All Instruments should be of imported and made from surgical grade stainless steel. Documentary evidence required for grade of material.	
2	The "Hinges" should be rust proof	
3	The instruments should be guaranteed against metal fatigue and rust for 02 years.	
4	The instruments surface should be non-reflective.	
5	The brand name along with catalogue number should be etched on the instruments.	
6	Deleted	
7	The instruments might be call for demonstration and approval. It is the sole discretion of the department to approve or disapprove the quality..	
	Tracheostomy set (4 sets required)	
	Each sets includes -	
1	Mosquito artery forceps, Curved	4
2	Mosquito artery forceps, Straight	4
3	Medium sized artery forceps straight	4
4	Medium sized artery forceps curved	4
5	Langenback's retractor, small	4
6	Langenback's retractor, Large	2
7	15 no. Blade	20
8	Forceps, Tracheal Dilating. Child. 12cm/4.75".	2
9	Tracheostomy Tube, Chevalier Jackson.Silver Plated. 20 Fr.	2
10	Tracheostomy Tube, Chevalier Jackson.Silver Plated. 32 Fg.	2
11	Tracheostomy Tube, Chevalier Jackson.Silver Plated. 34 Fg.	2
12	Tracheostomy Tube, Fuller. 18Fg.	2
13	Retractor, Single hook. Sharp. 16cm/6.25". Also for Tracheostomy.	2
14	Retractor, Single hook. Blunt. 16cm/6.25". Also for Tracheostomy.	2
15	Retractor, Double hook. Sharp. 16cm/6.25".Also for Tracheostomy.	2
16	Retractor, Double hook. Blunt. 16cm/6.25". Also for Tracheostomy.	2
17	Needle Holder	2

18	Tissue holding forceps (Plain and tooth)	2 nos 2 nos
19	BP Handle	2
20	Sponge Holding forceps	2
21	Cricoid Hook(Single prong and Double prong)	2 nos 2 nos
	Note for Instruments sets	
	TITANIUM INSTRUMENTS :	
1	All Instruments should be of international quality and made from surgical grade titanium.	
2	The "Hinges" should be rust proof	
3	The instruments should be guaranteed against metal fatigue and rust for atleast 02 years. Further repair should be available for next 5 years.	
4	The instruments surface should be non-reflective.	
5	The brand name along with catalogue number should be etched on the instruments.	
6	The other instruments should be made of high grade titanium, they should not magnetize with use and the surface should be non-reflective and glare free under OT light.	
7	Satisfactory Performance Certificate from a Central Government Hospital (AIIMS, PGI, SGPGI etc.) is mandatory.	
8	The instruments might be call for demonstration and approval. It is the sole discretion of the department to approve or disapprove the quality.	
	STAINLESS STEEL INSTRUMENTS:- international quality	
1	All Instruments should be of imported and made from surgical grade stainless steel. Documentary evidence required for grade of material.	
2	The "Hinges" should be rust proof	
3	The instruments should be guaranteed against metal fatigue and rust for 02 years.	
4	The instruments surface should be non-reflective.	
5	The brand name along with catalogue number should be etched on the instruments.	
6	-- Deleted	
7	The instruments might be call for demonstration and approval. It is the sole discretion of the department to approve or disapprove the quality..	
	INSTRUMENTS FOR MICROLARYNGEAL SURGERY (MLS)	
1	Operating laryngoscope Adult size-18cm- Large	2
2	Operating laryngoscope Adult size-18cm-Medium	2
3	Anterior commissure scope Adult size-22cm	1
4	Crico –Pharyngoscope	1
5	Laryngoscope – Pediatric	1
6	Laryngoscope holder and chest support for use with above laryngoscopes Adult size (ring 9.5 cm, rod 34 cm)	2
7	Laryngoscope holder and chest support Child size (ring 9.5 cm. Rod 24 cm)	1
8	Fiber optic light carrier to fit in operating laryngoscopes Adult size	2
9	Fiber optic light carrier to fit in operating laryngoscopes Child size	2
10	Straight forward wide angle telescope-4mm	1

	30cm length- 0º angle, autoclavable with attached handle	
11	Fiber optic light cable, fully autoclavable 4.9mm-180cm with adapters for use with light source and above scopes	2
12	Laryngeal cutting forceps-23 cm 2mm round cupped jaws, straight	2
13	Laryngeal cutting forceps-23 cm 2mm round cupped jaws, angular upwards	2
14	Laryngeal cutting forceps-23 cm 2mm round cupped jaws, bent to right	2
15	Laryngeal cutting forceps-23 cm 2mm round cupped jaws, bent to left	2
16	Laryngeal artery forceps with rachet-23 cm Serrated, straight	1
17	Laryngeal alligator forceps-23 cm Serrated –straight	2
18	Laryngeal alligator forceps-23 cm Serrated -bent to right	1
19	Laryngeal alligator forceps-23 cm Serrated -bent to left	1
20	Laryngeal scissors-23 cm Straight	3
21	Laryngeal scissors-23 cm Angular 45º up	2
22	Laryngeal scissors-23 cm Bent to right	2
23	Laryngeal scissors-23 cm Bent to left	2
24	laryngeal scissors-23 cm Straight, horizontal cutting	2
25	Laryngeal forceps-23 cm Round cupped jaws 5 mm, straight, double action	2
26	Laryngeal grasping forceps for arytenoids-23 cm	1
27	Laryngeal biopsy forceps-23 cm Oval cup shaped jaws	2
28	Laryngeal needle holder with ratchet	1
29	Atraumatic vocal cord retractor-23 cm Self retaining with rachet	1
30	Arnold vocal cord holding forceps-23 cm Triangular jaws, for right side	1
31	Arnold vocal cord holding forceps-23 cm Triangular jaws, for left side	1
32	Laryngeal knife-23cm Straight cutting	3
33	Laryngeal knife-23cm Sickle shaped, curved	2
34	Laryngeal knife-23cm Round vertical cutting	2
35	Laryngeal hook-23 cm Blunt	1
36	Laryngeal hook-23 cm Sharp	1
37	Laryngeal needle-23 cm Curved to right	2
38	Laryngeal needle-23 cm Curved to left	2
39	Laryngeal elevator with suction channel-23 cm	1
40	Laryngeal knot tier-23 cm	1
41	Laryngeal hook, blunt with probe end	2
42	Instrument handle For use with item No 30to 38 mentioned above	1
43	Laryngeal suction tube (micro laryngeal) –25 cm Diameter 2 mm	3
44	Laryngeal suction tube (micro Laryngeal) –25 cm Diameter 3mm	3
45	Laryngeal insulated canula-25 cm 3 mm O.D. for suction and coagulation	2
46	Laryngeal cotton wool carrier-25 cm Straight, serrated	2
47	Bipolar electrode –3 mm, length 23 cm With removable suction tube	1

48	Cable for bipolar forceps-5 m long	1
49	Injection Needle, Leus lock, straight	2
50	Teeth protector one metallic and one silicon (autoclavable)	1 each
51	Laryngeal Biopsy forceps 3x4mm, 20-25cm	2
52	FB forceps	2
	All accessories should be from the same manufacturer and should be European CE/ US FDA approved	
	Note for Instruments sets	
	TITANIUM INSTRUMENTS :	
1	All Instruments should be of international quality and made from surgical grade titanium.	
2	The "Hinges" should be rust proof	
3	The instruments should be guaranteed against metal fatigue and rust for atleast 02 years. Further repair should be available for next 5 years.	
4	The instruments surface should be non-reflective.	
5	The brand name along with catalogue number should be etched on the instruments.	
6	The other instruments should be made of high grade titanium, they should not magnetize with use and the surface should be non-reflective and glare free under OT light.	
7	Satisfactory Performance Certificate from a Central Government Hospital (AIIMS, PGI, SGPGI etc.) is mandatory.	
8	The instruments might be call for demonstration and approval. It is the sole discretion of the department to approve or disapprove the quality.	
	STAINLESS STEEL INSTRUMENTS :-	
1	All Instruments should be of imported and made from surgical grade stainless steel. Documentary evidence required for grade of material.	
2	The "Hinges" should be rust proof	
3	The instruments should be guaranteed against metal fatigue and rust for 02 years.	
4	The instruments surface should be non-reflective.	
5	The brand name along with catalogue number should be etched on the instruments.	
6	Deleted	
7	The instruments might be call for demonstration and approval. It is the sole discretion of the department to approve or disapprove the quality..	
	General Instruments for ENT (Head & Neck)	
1	BP Handle	2 Nos.
2	Skin hooks(single and Double)	4 nos 4 Nos.
3	Langenbeck right angle retractor(Short Blade)	2 Nos.
	Langenbeck right angle retractor(Long Blade)	2 Nos.
4	Allis tissue holding forceps	1 No.
5	Adson tissue forceps	4 Nos.
6	Artery forceps	
	i. Small (Curved and straight)	6 nos 6 Nos.

	ii. Medium (Curved and straight)	6 nos
		6 Nos.
	iii. Large (Curved and straight)	4 nos
		4 Nos.
7	Babcock tissue forceps	6 Nos.
8	Tissue holding forceps	
	i. Small	4 Nos.
	ii. Medium	4 Nos.
	iii. Large	4 Nos.
9	Lahey's tissue forceps	2 Nos.
10	Vessel clamps(Bull Dog clamp)	4 Nos.
11	Joll's retractor	2 Nos.
12	Dingman's retractor	2 Nos.
13	Needle holder(Variable size)	4 Nos.
		4 Nos.
		4 Nos.
		4 Nos.
14	Sponge holding forceps	2 Nos.
15	Gigli saw holder	2 Nos. Set
16	Periosteum elevator	2 Nos.
17	Dural retractor	4 Nos.
18	Spoon curette	
	i. Medium	2 Nos.
	ii. Large	2 Nos.
19	Tissue cutting scissors(Small, Medium & large)	3 Nos.
		3 Nos.
		3 Nos.
20	Suture cutting scissors(Small, Medium & large)	3 Nos.
		3 Nos.
		3 Nos.
21	Doyen mouth gag	2Nos.
22	Heister jaw opener	2Nos.
23	Ferguson Mouth gag	2Nos.
	Note for Instruments sets	
	TITANIUM INSTRUMENTS :	
1	All Instruments should be of international quality and made from surgical grade titanium.	
2	The "Hinges" should be rust proof	
3	The instruments should be guaranteed against metal fatigue and rust for atleast 02 years. Further repair should be available for next 5 years.	
4	The instruments surface should be non-reflective.	
5	The brand name along with catalogue number should be etched on the instruments.	
6	The other instruments should be made of high grade titanium, they should not magnetize with use and the surface should be non-reflective and glare free under OT light.	
7	Satisfactory Performance Certificate from a Central Government Hospital (AIIMS, PGI, SGPGI etc.) is mandatory.	

8	The instruments might be call for demonstration and approval. It is the sole discretion of the department to approve or disapprove the quality.	
	STAINLESS STEEL INSTRUMENTS :-	
1	All Instruments should be of imported and made from surgical grade stainless steel.	
2	Documentary evidence required for grade of material.	
3	The "Hinges" should be rust proof	
4	The instruments should be guaranteed against metal fatigue and rust for 02 years.	
5	The instruments surface should be non-reflective.	
6	The brand name along with catalogue number should be etched on the instruments.	
7	Deleted	
8	The instruments might be call for demonstration and approval. It is the sole discretion of the department to approve or disapprove the quality..	
	Added Para. Items of Sl no 8,9,10,38,39,40,41,42,66,76,77,83,84,85,86,87,88,89,90,91,92,93,94, 95,96,97,98,118,121,122,123,124,125,126,127,128,129,130,131,32,1 33,134 (TITANIUM)	

Rigid Bronchoscope & Oesophagoscope *Set for Adult for the Deptt. Of E.N.T.*

The Technical Specification should be as follows:

Description	Qty.
Straight ForwardTelescope 0°, diameter 4.5 mm,length 50 cm, autoclavable. Fiber optic light transmissionincorporated,	ONE
Bronchoscope Tube Universal, without distal fiber optic ligth carrier, for use with proximally insertable prismatic light deflector and plugs length 43 cm, size 8.5	ONE
Bronchoscope Tube Universal, without distal fiber optic light carrier, for use with proximally insertable prismatic light deflector and plugs length 43 cm, size 7.5	ONE
Bronchoscope Tube Universal, without distal fiber light carrier, for use with proximally insertable prismatic light deflector and plugs length 43 cm, size 6.5	ONE
Prismatic Light Deflector with connection for fiber optic light cable.	ONE
Glass Window Plug	ONE
Rubber Telescope Guide	ONE
Adaptor with sliding glass window plug, sealing cap, notched lens and keyhole opening, movable, for use with Full Lumen Tracheoscopes and Bronchoscopes	ONE
Injection Cannula for possitive pressure assisted ventilation system, O.D. 3.5 mm for use with bronchoscopes and tracheoscopes with LUER-lock female fitting	ONE
Tube Guide, for Bronchoscope	ONE
Adaptor from bronchoscope to any type of pediatric respiration equipment.	ONE
Plug for Ventilation Attachment of Bronchoscopes	ONE
Bronchoscopic Forceps, circular cup, biopsy, malleable, double action jaws, diameter: 2.5 mm, working length 50 cm	ONE
Bronchoscopic Forceps, universal biopsy and grasping,double action jaws, diameter: 2.5 mm, working length 50 cm	ONE

Bronchoscopic and Esophagoscopic Forceps, universal biopsy and grasping, double action jaws, diameter: 2.0 mm, working length 35 cm	ONE
Bronchoscopic and Esophagoscopic Forceps, alligator, grasping, double action jaws, diameter 2.0 mm, working length 35 cm	ONE
Bronchoscopic Forceps, alligator, grasping, double action jaws, diameter: 2.0 mm, working length 45 cm	ONE
Bronchoscopic Forceps, universal, biopsy and grasping,double action jaws, diameter: 2.0 mm, working length 45 cm	ONE
Rigid Suction Tube, working length 35 cm	ONE
Suction Tube for Bronchoscopy, O.D. 2.5 mm working length 50 cm	ONE

	Flexible Rhino-Pharyngo Laryngoscope
	A. General Specifications:
	1. Should have large viewing angle and movable distal tip for better orientation
	2. Waterproof, fully immersible for cleaning and disinfections
	3. Sterilizable with ETO gas, steris and sterrad
	4. Resistant construction and robust mechanics
	B. Technical Specifications:
	1. Direction of view: 0 deg.
	2. Angle of view: 100-110 deg.
	3. Working length: 20-25 cm or better
	4. Outer diameter: 5-5.5 mm
	5. Instrument Channel: 2-2.5mm
	6. Deflection: Upward upto 160 deg, Downward upto 150 deg.
	C. The following accessories should be included:
	1. Carrying Case
	2. Pressure compensation cap
	3. Leakage tester
	4. Mouth piece
	5. Cleaning Brush
	6. One Biopsy Forceps- Double action Jaws
	7. One Grasping Forceps- Double action Jaws
	D. Deleted be

Laparoscopic Surgery Set with Hysteroscope & Resectoscope with High Definition Camera & Monitor
Technical Specification of Laparoscope
1 Description of Function
Laparoscope is used for minimally invasive surgery and comprises of telescope and associated instruments and units
2 Operational Requirements
1. Telescopes, Insufflator, Suction Irrigation Unit, Camera Control Unit and Camera head, HD Medical grade monitor, Light source, Image management system, Hysteroscope & Resectoscope should be from same manufacturer with USFDA or European CE approved
2. Morcellator with accessories, CO2 cylinder (Type – B, 5 Kg), Video Color printer/Laser color printer and Electro cautery should be compatible with the principal system and it should be USFDA or European CE approved.(Except CO2 cylinder).
3. [illegible] Deleted pr
3 Technical Specifications
3.1 TELESCOPES
a) 5 mm forward oblique, 30 degree – 1 no
b) 10 mm forward oblique, 30 degree – 1 no
c) 10 mm straight forward 0 degree – 1 no
d) All telescope should have following
Low risk of object burn
Colour coded for identification
Autoclavable
Fibreoptic light transmission incorporated
3.2 HAND INSTRUMENTS & OTHER ACCESSORIES
1. Reusable Veress Pneumoperitoneum Needle- Spring loaded blunt stylet luer lock length8-10/15cm/12cm - 4 each
2. Reusable Trocar:- 5/5.5mm – Multifunctional , insuflation stopcock and threaded sleevers, pyramidal tip, length (10.5cm) ,Flapper valve - 4 nos
3. Reusable Trocar:- 10/11mm & 12/13 mm-Multifunctional valve, insufflation stopcock and threaded sleeves, pyramidal tip, length (10.5cm/11) Flapper valve - 4 each
4. Suction and Irrigation cannula-Size 5mm, length 33-36cm, used with suction and irrigation handle, size 10 mm also, Reusable suction irrigation tubing set, Multifunction suction irrigation handle with provision for using 5/10mm diameter auxiliary instruments - 2 each
5. Grasping forceps curved - toothed 2x4 teeth-2 each-Double action jaws, rotating with connector pin for unipolar coagulation, size 5mm, length 33-36cm, dismantling facility, size 10mm - 2 each(5 & 10mm)
6. Grasping forceps straight- toothed 2x3 teeth-Double action jaws, rotating with connector pin for unipolar coagulation, size 5mm, length 33-36cm, dismantling facility, size 10mm - 2 each(5 & 10 mm)
7. Maryland forceps-Double action jaws, rotating with connector pin for unipolar coagulation, size 5mm, length 33-36cm, dismantling facility - 2 nos

8. Grasping forceps-Atraumatic-Double action jaws, rotating with connector pin for unipolar coagulation, size 5mm, length 33-36cm, dismantling facility - 2nos
9. Grasping forceps-Allis-Double action jaws, rotating with connector pin for unipolar coagulation, size 5mm, length 33-36cm, dismantling facility - 2nos
10. Grasping forceps Mixter-Double action jaws, rotating with connector pin for unipolar coagulation, size 5mm, length 33-36cm, dismantling facility - 2nos
11. Grasping forceps-plain dissection & Grasping Double action jaws, rotating with connector pin for unipolar coagulation, size 5mm, length 33-36cm, dismantling facility - 2nos
12. Grasping forceps-Babcock-Double action jaws, rotating with connector pin for unipolar coagulation, size 5mm, length 33-36cm, dismantling facility, size 5mm &-10 mm - 2 each
13. Fan shaped retractor-Rotating, size 5mm, length 33-36cm, dismantling facility - 2nos
14. Hook Scissors-Double action jaws, rotating with connector pin for unipolar coagulation, size 5mm, length 33-36cm, dismantling facility- 2nos
15. Rotating Metzenbaum Scissors-Double action jaws, rotating with connector pin for unipolar coagulation, size 5mm, length 33-36cm, dismantling facility – size 5mm 2nos & 10mm -1 no
16. Bipolar coagulating forceps-Size 5mm, length 33-36cm fenestrated- 2 nos
17. Bipolar coagulating forceps-Size 5mm, length 36cm, 3mm width of jaws -2 nos
18. High Frequency Cord-For 5mm & 10mm hand instruments with Monopolar Electrodes, spatula tip, needle electrode- 2 each
19. High Frequency Cord-For 5mm & 10mm hand instruments with Monopolar Electrodes, hook tip, knife electrode - 2 each
20. Knot pushers-Eye type, length 33-36cm,2 each for intra and extra corpal knotting
21. Needle holder coaxial type-5mm, tungsten tip, straight handle with ratchet, single moving jaw, length 33-36cm,2 with carbide insert tips for straight and curved needles
22. Clip Applicator-Medium -Size -Rotatable, Provision for locking the shaft conveniently, 10mm, compatible with clip LT 300, 2 quoted with adequate no. of spare clip (Minimum of 100 Clips)
23 - Clip Applicator- Large-Rotatable, Provision for locking the shaft conveniently, 10mm, compatible with clip LT 400/LT 300, 2 quoted with adequate no. of spare clip (Minimum of 100 clips).
24. Hassan cone-Adaptable to 10mm/11 trocar- 2nos
25. Blunt Obturator-For 11mm port-From 10/11 mm to 5mm & 5 to 3 mm - 2nos
26. Reducer-Size 5mm, length 33-36cm with pin for cautery - 2nos
27. L-Hook-Size 5mm, length 33-36cm with pin for cautery- 2nos
28. Spatula-Size 5mm, length 33-36cm with pin for cautery - 2nos
29. Fascia closure instrument-Size 2.8mm, length 17cm - 2nos
30. Washers-For 5 & 10 mm cannula and reducers - 100 each
31. Container System: Metal & Plastic-For Sterilization and storage of telescopes, hand instruments and other accessories. Different sizes - 3nos each
32 - Metzenbaum scissors-High performance for bipolar cautery - 2nos
33. Large operating scissors-With double action jaws (slightly curved) Rotatable 10mm diameter instruments with a working length of 33-36cm, dismontting facility - 2 nos

34. Assistant needle holder-5mm diameter instrumentations with a working length of atleast 33-36 cms with carbide insert tips for straight and curved needles. 2 for straight & curved needles with carbide insert tip
35. Disposable extraction bags of any international brand, maximum 10 Nos.
36. Injection and puncture canula-5 mm diameter, 33-36cms length with luer lock - 2 nos
37. Myoma screw-5 mm, 33-36 cms length, 10mm – 2 nos
38. Uterine Manipulator-LAVH, mobilization of uterus, indentification of vaginal fornices and sealing of vagina during hysterectomy.
39. CCL Vaginal extractor for LAVH Surgery
40. HF Needle electrode for splitting & coagulation insulated with connection pin for unipolar coagulation, working length – 31-33cm
41. Electronic morcillator-With cutting sleeve and protective sleeve along with spare knife (Fully autoclavable) can be from other make. It should be European CE or USFDA approved.
Morcellator with accessories
a. Electronic Drive unit with motor for use with morcellator
b. Morcellator tube serrated edge
c. Atraumatic trocar sleeve with pyramidal trocar 12mm
d. Claw forceps insert 2 x 3 teeth
e. Insulated sheath
f. Laproscopic Bag
g. Insulated handle with HF connection rotating with ratchet
42 High frequency monopolar cables-For above auxiliary instruments.
43 Hight frequency bipolar cables-For above auxiliary instruments
44 Cleaning accessories-
a. Cotton carrier with thread
b. Cotton carrier with "U" shapod handle
c. Cleaning brush
d. Brush for cleaning jaws
e. Oil dropper
f. Wadding silver polish
g. Special lubricating oil minimum 10 bottles of 50ml
Note : Insulated outer sheath for all forceps and scissors
3.3 INSUFFLATOR
a) Fully automatic, electronically controlled gas fill
b) Flow rate of 20-30 litres per minute
c) Optical and acoustic warning signals in case of malfunction or excessive pressure
d) Connectible to medical gas pipeline
e) Control by keys on front panel
f) Clear and adjacent display of actual and preset flow rate, actual and preset pressure, gas consumed
g) Facility for filtering preheating of gas to body temperature
h) Facility for easy evacuation of smoke and mist
i) Memory for retention of previous pressure settings
jl Should include high pressure hose pin-index connection to small/big cylinder with regulator, mains cord, silicone tubing set with luer lock, universal wrench and gas filter
3.4 CARBON DIOXIDE CYLINDER (type-B)

Large size cylinders with required regulators and connecting pipe to the insufflator (Type-B) – 2 nos (Capacity 5Kg or more), Gas tubing – 4
Gas tubing – 4
3.5 SUCTION-IRRIGATION UNIT
a) Pump for irrigation and suction
b) Irrigation pressure 550mm Hg or more
c) Suction pressure 0.65 bar or more
d) Control from control panel and/or foot pedal / Manometer
e) Overflow protection on suction bottles
f) Accessories should include silicone tubings (2 nos), bacterial filter and bottles with cap
g) Irrigation suction flow rate should not be less than 2-5 L/min.
3.6 Sterilization/Disinfection Tray:
Disinfection/Sterilization tray with sieve, tray to lift Size: 27"X7"X5" (LXBXD) – 04 nos
3.7 Formaline Chamber (Imported / Indian make)
Formaline Chamber made of Virgin Acrylic 4.5mm thickness; size : 26"X8"X8" (LXBXH) with three tray, for sterilizing the laparascope& Hysteroscope– 04 pcs.
3.8 Suitable autoclavable plastic tray double tray for sterilization and storage for hand instruments of minimum 20 hand instruments preferably from OEM – 04 nos
3.9 CAMERA CONTROL UNIT & CAMERA HEAD
High definition Three chip Endoscopic camera system should have following features:
a) Digital full HD technology
b) Progressive Scan
c) Camera control unit with three chip HD camera head having HD CCD chip of same aspect ratio of 16:9 and camera control unit should be able to produce following video output: DVI-D-2 nos, SDI – 1 no, Composite Video – 1 no.
d) Three chip camera head should produce at head itself Pure Digital Signal with High Definition video (1920 * 1080Pi) with aspect ratio of CCD chip and video format of 16:9 or 16:10.
e) System should have integrated Optical Zoom (12-28mm, 2 X) to enhance image size and focus lens/rings to make it fully soakable and waterproof
f) System should be able to optimize all the settings and should be ready as soon as connected to camera control unit.
g) Three Chip Camera control unit should be compatible with all the tree chip camera head and the company should provide standby facility within 48 hours of breakdown.
h) Should be compatible for remote controlled operation of various features
i) Camera should be suitable for both Laparascope, Hysteroscope & Resectoscope
j) Should have integrated gain, shutter, Enhancement, white balance with brightness control.
k) All camera functions to be controlled from camera head buttons and through key board at camera control unit to make it controllable from both sterile and non-sterile zone
l) Technical Specification :-
Image Sensor CCD Chip
Pixels 1920 x 1080
AGC Microprocessor controlled
Lens F16-28mm or more
Video Outputs Composite to BNC, Y/C to S-VHS, RGB to D Socket, HDTV-DVI-D, DV for recording
Input Key Board for Character Generator, 5 pole Din/4 pole Din/Touch Screen

3.10 High Definition Medical Grade Monitor
Wide Screen Monitors having the following features:
a) HDTV Display in 16:10/16:9 HDTV format
b) LCD/LED Crystal display
c) 26" High Resolution HD video Medical grade monitor – 1 no
d) Resolution : 1920 x 1080 pixels
e) SDI/HD-SDI, Composite, S-Video RGB, DVI-D, VGA input, S-VHS – 2 nos, should also have same video output
f) All required cables and connectors, which should be specified
g) TFT screen stand/fixtures for connecting to pendant system/Ceiling Light Arm
h) Dustproof and Drip Water Protected
i) Deleted
j) Deleted
k) Deleted
l) Deleted
3.11 LIGHT SOURCE
a) Xenon 300 watts
b) Manual and automatic adjustment of light intensity
c) Lamp life 500 hrs or more with at least one spare bulb
d) Display of lamp life/Bulb usage meter warning light
e) Deleted
f) Long (250 cm or more) fluid and fibre-optic light cable of diameter 4.8-5 mm
g) Light weight
h) Certified for National International safety standard normal
i) deleted
j) Should be able to produce colour temperature of 6000K.
3.12 VIDEO- CART (Should be from the same manufacturer/ or ANY International BRAND)
a) Made of stainless steel / Epoxy coated metal
b) Portable on 4 antistatic dual castors, 2 with locking brakes
c) Required number of shelves for housing all the units of the set
d) Adjustable arm for fixation to either side for fixing the TFT monitor
e) One drawer unit with lock and key
f) Cable Manager
g) Power box with concealed wiring for providing electrical connections of proper rating to all the units
3.13 IMAGE MANAGEMENT SYSTEM
a) Documentation system for digital storage of still images, video sequences and audio files.
b) Latest processor & HDD, which should be specified
c) Largest possible RAM, which Should be specified
d) Integrated DVD/CD / Blue Ray Disc writer with maximum speed which should be specified
e) Compact key board with drape/ Touch Screen
f) Cordless mouse
g) All types of connecting cables (BNC, DVI) and connectors, which should be specified
h) With all connectors and connection cables (BNC, S-VIDEO(Y/C), VGA), which should be specified
i) Deleted

ii) It should be medical grade with touch screen monitor.
a) Full HD recording, Medical grade computer and Monitor,Touch screen,Minimum 500GB storage memory. It should have window based operating system,minimum Windows –XP.
3.14 VIDEO COLOR PRINTER/ LASER COLOUR PRINTER
i. For endovision camera and multi-colour systems existing in country.
ii. Large colour prints of video images with outstanding quality at least 4 different images can be stored and printed on one sheet.
iii. Memories at least 4 GB ram, should be compatible with any monitor and should be Supplied with all connecting cables, satisfying international quality controls, safety Norms and power supply
iv. It should be CE approved.
4. Technical Specification for Hysterescope & Resectoscope
4.1 Description of Function
4.1.1 The resectoscope is a hysteroscope with a built in wire loop (or other shape device) that uses high-frequency electrical current to cut or coagulate tissue. It allows surgery inside the uterus an organ without having to make an incision.
4.1.2 Hysteroscopy uses a hysteroscope, which is a thin telescope that is inserted through the cervix into the uterus for examination
4.2 Operational Requirments
4.2.1 Complete unit with Resectoscope and Hysteroscope is required
4.3 Technical Specifications
A) HYSTEROSCOPE TELESCOPES STANDARD –
a) Operating and Contact-Hysteroscope Forward-Oblique Telescope 30°, enlarged view magnification 1x, 60x, diameter 4.0 mm, length 30 cm, autoclavable, fiber optic light transmission incorporated,- 1 no.
b. Forward-Oblique Telescope 30°, enlarged view, diameter 4.0 mm, length 30 cm, autoclavable, fiber optic light transmission incorporated - 1 no
B) Diagnostic Sheath with obturator 5mm diameter for the above 4 mm Hysteroscope telescopes(item A), with luer lock adapter
C) Continuous irrigation Operative Hysteroscope Sheath with obturator, outer and inner sheath for the above 4 mm hysteroscope telescope (item A) with channel for semi-rigid 5/8 fr size instruments. Should have facility for self-closing sealing system for precise irrigation.
D)Accessories
Hysteroscopy flexible / semi rigid instruments which should be adaptable to above sheath (item C), 5/8 fr. Diameter.
a. Foreign body grasping forceps.
b. Scissors-Scissors semi rigid, blunt tips, 5 Fr., length 33-36cm, single action jaws-2 nos
c. Scissors semi rigid, pointed jaws, 5 Fr., length 33-36cm, single action jaws, semi-rigid – 2 nos
d. Biopsy and Grasping forceps - Biopsy- and Grasping Forceps semi rigid, 5 Fr., length 33-36cm, double action jaws -2 nos
e. Punch Forceps - Punch through Cutting semi rigid 5Fr, length 33-36cm- 2 nos
f. Teneculam grasping forcep, semi rigid, size 5Fr, length 33-36cm 2 nos
g. Needle electrode and ball electrode-Unipolar – high frequency cords of any make should be compatible with the above equipment
h. Bipolar vaporizing electrode – high frequency cords of any make should be compatible with the above equipment

i. Myoma fixation screw
j. Palpation probe
k. Polypectomy loop
E) Resectoscope including connecting tube for inflow and outflow for the above 4 mm hysteroscope telescope (item A)complete with continuous irrigation double sheath system, i.e outer flow and rotating inner tube with ceramic insulation distal tip,withobturator to be quoted along with working element and complete set of electrodes and 2 set of HF cables
All electrodes and Collin"s knife to be bipolar/unipolar (as per requirement) to be quoted with appropriate cautery
ACCESSORIES FOR RESECTOSCOPE FOR TCRE UNIPOLAR AND BI-POLAR SET
UNIPOLAR WORKING - Unipolar Working Element to be used with 26FR Resectoscope sheath: Motion by means of a spring. The thumb support is movable. Return of the loop is controlled by the thumb and in rest position the electrode should rest inside the operating sheath, to be used with 4mm hysteroscopy telescope - 1 no
CUTTING LOOP ELECTRODE FOR UNIPOLAR- Cutting loop 24 Fr - 12 nos
STRAIGHT CUTTING ELECTRODE FOR UNIPOLAR - Forward angle/straight cutting loop 24Fr - 06 nos
ROLLER COAGULATING ELECTRODE FOR UNIPOLAR - Roller electrode Cylindrical diameter 3mm, 24Fr - 06 nos
POINTED ELECTRODE FOR UNIPOLAR - Pointed electrode/Collines HF knife electrode, 24Fr - 06 nos
VAPOR CUTTING ELECTRODE UNIPOLAR - VAPOR CUTTING Electrode, 24Fr -06 nos
SPIKE ELECTRODE UNIPOLAR - SPIKE Electrode 24Fr, size 3mm diameter, 24Fr - 06 nos
BIPOLAR WORKING ELEMENT SET - BIPOLAR Working Element to be used with 26Fr Resectoscope sheath: Motion by means of a spring. The thumb support is movable. Return of the loop is controlled by the thumb and in rest position the electrode should rest inside the operating sheath, to be used with 4mm hysteroscopy telescope. Should work in saline - 01 no
BIPOLAR CUTTING LOOP - BIPOLAR Cutting loop 24 Fr should work in saline - 06 nos
BIPOLAR CUTTING LOOP SMALL - Cutting Loop 24Fr, bipolar, small should work in saline - 06 nos
BIPOLAR ELECTRODE POINTED - Coagulating Electrode 24Fr, bipolar, pointed should work in saline - 06 nos
BIPOLAR ELECTRODE BALL END - Coagulating Electrode 24Fr, bipolar, ball end should work in saline - 06 nos
BIPOLAR LOOP STRAIGHT - Cutting Loop 24Fr, bipolar, straight should work in saline - 06 nos
RESECTOSCOPE SHEATH FOR UNIPOLAR - Continuous Flow Resectoscope Sheath 26 Fr., including connection tubes for in- and outflow, 2 LUER-lock adaptors, diameter 8 mm, oblique beak, fixed inner tube, with ceramic insulation, for use with working element - 02 nos
RESECTOSCOPE SHEATH FOR BIPOLAR - Continuous Flow Resectoscope Sheath 26 Fr., for Bi-Polar, including connection tubes for in- and outflow, 2 LUER-lock adaptors, diameter 8 mm, oblique beak, rotating inner tube, with ceramic insulation, for use with working element should work in saline - 01 no
OBTURATOR - Obturator, for use with the Resectoscope sheath - 2 nos
FIBER OPTIC CABLE - Fiber Optic Light Cable, diameter 3.5 mm, length minimum 300 cm - 2 nos
F) Hysteropump

a. Irrigation system for use in hysteroscopy
b. Irrigation function is performed by electric pump
c. Maximum parameters for hysteroscopy are automatically set
d. Precise presetting of volume and pressure of suction and irrigation parameters via touch keys
e. Adjacent display scales for set values and actual value to ensure safe monitoring.
f. To be used with pressure regulated from 35 to 150mm of Hg or more, and flow rate regulated from 0- 500ml/min. Power supply 100-240 VAC, 50/60 Hz. Mains cord
g. Connecting cable 100 cm, one pedal foot switch/ Touch Screen.
h. Hysteroscopic tubing set
i. Irrigation tube
j. bottle 1 L or more, sterilizable with bottle stand and bottle stand holdor
k. Silicon Tubing Set for suction ,sterilizable.
l. Hysteromet should be from same manufacturer as of Hysteroscope
5. Electrocautory compatible with Laparascope, Hysterescope & Resectoscope
1 Should have unipolar cutting and coagulation as well as bipolar cutting and coagulation modes and have the facility of blending cutting and coagulation in different ratios and degree –soft, standard and/ or forced coagulation and spray coagulation
2. Arc controlled cutting with a pre selectable power of 200 watts in both unipolar and bipolar modes.
3. Arc controlled coagulation with a pre selectable power of 120 watts in both unipolar and bipolar modes.
4 Auto stop function with automatic power – off on completion of coagulation process.
5 Automatic start function for bi- polar coagulation. Should be operable both in hand and foot mode and should have hand control switch on the handle of the electrode. Bipolar application with irrigation with sodium chloride
6 Endoscopy mode with reduced voltage out put for use with fine endoscopic electrodes (microfunction)
7. Deleted
8 Should be compatible with under water operative procedures
9 It should have neutral electrode monitoring through a patient contact system.
10 It should have automatic high frequency power cut off by autocoagulation stop and autostart facility
11 The unit should have the facility of self testing for trouble shooting
12 Visual and acoustic signs of HF activation by different colored indicators and different acoustic tones for cutting and coagulating
13 Unit should have safety monitoring circuit in event of malfunction for output monitoring. Neutral electrode connection .Automatic self test and automatic power cutoff in event of malfunction. Ground leakage current(LF/HF) HF application time
14. Power supply 230VAC, 50/60 Hz.
15 The unit should be supplied with all standard accessories such as Electrode,Foot switch, Twin earth pad , bipolar forceps with Cord, Electrode Handle with switches , neutral plate, ball electrodes, Loop electrodes, variable output power for all types of currents
Added (Under Para 5) 16. Trolley should be provided for Electrocautry.
6 System Configuration Accessories, spares and consumables
6.1 System as specified

6.2 ACCESSORIES:- All Possible accessories of the equipments should be quoted. The specific accessory and its quantity will be decided on the basis of actual requirement
6.3 The system should be capable of accepting standard accessories of major international brands, which should be specified and for which suitable adaptor, if required, is to be provided
6.4 The codes and rates of all relevant individual accessories should be quoted separately with clear mention of period of validity of rates
6.5 Cautery system should be upgradable for vessel sealing device
7 Environmental factors
7.1 The unit shall be capable of being stored continuously in ambient temperature of 0-50 deg C and relative humidity of 15-90%
7.2 The unit shall be capable of operating continuously in ambient temperature of 10-40deg C and relative humidity to 15-90%
8 Power Supply
8.1 Power input to be 220-240VAC, 50Hz fitted with Indian power plug
8.2 UPS for all systems of adequate rating for power supply to the system for 60 minutes.
9 Standards & Safety
9.1 Deleted
9.2 Manufacturer and Supplier should have ISO certification for quality standards
9.3 Electrical safety conforms to standards for electrical safety IEC 60601-1 General Requirements (or equivalent BIS Standard)
9.4 Shall meet internationally recognized standard for Electro Magenetic Compatibility (EMC) for electromedicalequipment : IEC-60601-1-2 :latest edition Or Equivalent BIS) or should comply with 89/366/EEC; EMC directive as amended
9.5 Certified to be complaint with IEC 60601-2-2 Medical Electrical Equipment part 2-2: Particular requirements for the safety of equipment mentioned above – wherever applicable
10 Training
10.1 Comprehensive training for staff of user department and support services till familiarity with the system.
10.2 Training of two faculties from each consignee to be provided
11 Documentation
11.1 Product Literature in original along with that of accessories and indigenous components if any Photocopies/computer generated copies are not acceptable
11.2 Statement of compliance with tender specification with clear and unambiguous links to relevant portions of product literature/authentic document, which should be highlighted. Alternatives provide for noncompliant specification with justification must be described in details with supporting literature
11.3 Certificate of Compliance with standards and approvals stated above
11.4 Certificate of manufacturer/principal regarding authorization of service facility provided by the supplier
11.5 List of important spare parts and accessories, which are required for maintenance and repair, with their part number and costing.
11.6 Commitment for supply of log book with check list for daily, weekly, monthly and quarterly preventive maintenance with contact details of service personnel along with the equipment. The job description of the hospital technician and company service engineer should be clearly spelt out in the log book

Sl.No.	Portable Ultrasound and Colour Doppler unit
	A portable USG Doppler unit to be quoted with the latest model. This machine should be capable and will be required to function clinically as standalone systems in case of high patient throughput during trauma and catastrophic situation.
1	Fully digital portable ultrasound machine with provision for Doppler examinations.
2	**The unit should have a laptop type console design. The unit should be compact, lightweight and portable. Weight should not less than or equal to 11 Kg including battery (excluding cart and accessories).**
3	It should be suitable for abdominal, small parts and vascular applications in adults and paediatric patients. Multiple preloaded as well as user configurable application presets should be available.
4	Minimum grey scale resolution to be 256 with 128 or more digital processing channels.
5	Maximum scanning depth to be 30 cm or more.
6	The system to have a dynamic range of 165 decibels or more.
7	The system should support Convex and Linear probes.
8	Transducers (one each):
1	Convex electronic phased array transducer with biopsy attachment and detachable needle guide: 2-6 MHz for abdominal imaging.
2	Linear transducer: 5-12MHz MHz for vascular and small part imaging.
3	**Endocavitary probe (5-8MHz) with 140 deg FOV and with biopsy attachment and detachable needle guide.**
9	All transducers should be lightweight digital broadband type transducers with 128 elements or more.
10	The system should have a frame rate of at least 300 frames per second (fps) in B mode.
11	The system should have an ergonomic full alphanumeric soft keys keyboard with easy access scans controls and trackball. Provision for attaching an external keyboard and mouse should be present.
12	**The System must have integrated high – resolution TFT/LCD/Single monitor of 12" inches & more.**
13	The system should have cine loop review facility of not less than 60 sec/1000 frames.
14	The system should have the facility of digital storage and retrieval of B/W and colour image data on built in CD/DVD Drive. Provision for USB port and LAN transfer of data should also be present.
15	Imaging modes of Real time 2D, Colour Doppler, Pulsed wave Doppler and Power (energy) Doppler, Tissue Harmonic Imaging with contrast to be quoted as standard feature.
16	Controls for 2D mode: Total gain, depth, TGC, dynamic range, acoustic power output.
17	Controls for Colour Doppler: PRF, colour gain, position and size of ROI, steering of ROI, colour maps and colour invert.
18	Controls for pulsed Doppler: variable sample volume size from 1 to 5mm or more, steer, PRF, baseline, gain angle correction, spectral invert, duplex on/off.
19	Measurements for 2D mode: Multiple distances, area and volume.

20	Measurements for Doppler modes: Stenosis quantification in area percentage, diameter, PSV, EDV, mean, PI, RI, acceleration time and index. Automatic and manual measurements and display of pulsed Doppler calculations should be possible.
21	Facility for storage on CDR should be available.
22	Unit should function with 200-240 V, 50 Hz AC, 5 amp power outlet. Power requirement to be specified.
23	In built battery backup should be at least one hour or more.
24	Essential accessories: Black & White Thermal printer, UPS, mobile cart with transducer holder, jelly bottle holder and space for printer. Colour laser printer (Optional)
25	Paper and cartridges for 1000 image printouts should be provided with the unit.
26	The unit offered must be sturdy and should be able to withstand accidental hits and falls during transportation.
27	The unit offered in the tender will require technical demonstration.
28	Price of the main unit and accessories to be quoted separately.
29	Warranty: The unit, transducers and all accessories should be covered with comprehensive onsite warranty for five (5) years commencing from the date of issue of installation certificate.
30	Rates for comprehensive maintenance contract CMC (including all spared and labour) for 5 years, after expiry of warranty period, must be quoted separately.
31	Company should give undertaking regarding the spares availability of the quoted model for next seven years.
32	The bidder should enclose the original product data sheet, brochure and compliance sheet, without which the bid will be rejected. Computer generated data sheet and brochure will not be accepted. The serial number of specifications must be indicated against the relevant portion of the compliance sheet and data sheet.
33	Deleted
34	Demonstration of the quoted model is must.

Cardiotocography Machine	
	1 Description of Function
	1.1 Antepartum and Intrapartum foetal monitor (Cardiotocomachine) is used to monitor Foetus during antepartum period (before labour) or intrapartum period (birth process)"
	2 Operational Requirements
	2.1 The complete unit with printer and all accessories should be offered
	3 Technical Specifications
	3.1 The monitor should be provided with
	1) Battery and main operation facility
	2) Should have inbuilt LCD / TFT Screen with tilt adjustment upto 90 degree with facilities to display on screen fetal heart tracings and toco tracings.
	3) Should be compact, light weight and should have inbuilt carrying handle and waterproof transducers
	4) The unit should have
	Fetal Heart Rate range 50 to 240 bpm
	External Toco range 0 to 127 relatives units
	Should have NST timer for antepartum applications
	5) Highly sensitive ultra sound transducer which should be 1.5 MHZ for less signal attenuation and good signal acquisition. Ultrasound transducer should be a waterproof unit. Designed with Snap Clasp closure for easy application and cleaning. Should have facility to connect any transducer in any socket for easy use. Preferably there should be facility to switch between transducers when more than one transducer is used.
	6) Ability to give an accurate continuous trace and should be able to detect sudden beat changes upto 25 bpm
	7) Audible alert indication of fetal bradycardia and tachycardia
	8) External tocotransducer which should be a sealed waterproof unit. Guard ring designed to reduce maternal respiration artifact
	9) Patients event marker
	10) Capability of automatic fetal movement detector
	11) Digital numeric and text display along with audio signal of fetal movement Should have inbuilt keyboard entry screen for patient data entry, name etc. Minimum 5 hour memory of traces with fast printing
	12)Should provide following accessories – Transducer belts, Belt buckles,Main cables, interconnecting cables, ultrasound gel bottles
	13) Inbuilt high resolution thermal/Laser printer with easily available cost effective paper.
	14) Should be provided with trolley with wheels with locking facility for mounting the unit on it with accessories for storage of transducers paper etc or the unit must have the facility for wall mounting and a protective cover with cabinet.
	(15) Should have facility for intra uterine pressure monitor.
	(16) Should have facility to record fetal heart rate pattern through fetal ECG.
	(17) Should have facility to monitor twins. Should have twin offset feature so that both fetal heart traces are clearly visible
	(18) Should have facility of connection of central monitor system

	4 System Configuration Accessories, spares and consumables
	4.1 Machine will be supplied with 20 nos of paper roll with each unit. Bidder has to ensure the supply of paper roll. (Price for paper roll to be quoted separately)
	5 Environmental factors
	5.1 Shall meet IEC-60601-1-2 :2001(Or Equivalent BIS) General Requirements of Safety for Electromagnetic Compatibility or should comply with 89/366/EEC, EMC-directive
	5.2 The unit shall be capable of operating continuously in ambient temperature of 20-30 deg C and relative humidity of 35-90%
	5.3 The unit shall be capable of being stored continuously in ambient temperature of 0-50deg C and relative humidity of 15-90%
	6 Power Supply
	6.1 Power input to be 220-240VAC, 50Hz fitted with Indian plug
	6.2 Should work on 220-240V AC as well as rechargeable batteries. Mains adaptor to be supplied
	7 Standards, Safety and Training
	7.1 Should be US FDA or European CE approved product
	7.2 Comprehensive training for lab staff and support services till familiarity with the system.
	7.3 Manufacturer should have ISO certification for quality standards
	7.4 Should have local service facility .The service provider should have the necessary equipments recommended by the manufacturer to carry out preventive maintenance test as per guidelines provided in the service/maintenance manual
	8 Documentation
	8.1 User/Technical/Maintenance manuals to be supplied in English
	8.2 List of Equipments available for providing calibration and routine Preventive Maintenance Support. as per manufacturer documentation in service/technical manual
	8.3 Certificate of calibration and inspection
	8.4 List of important spare parts and accessories with their part number and costing
	8.5 Compliance Report to be submitted in a tabulated and point wise manner clearly mentioning the page/para number of original catalogue/data sheet.Any point ,if not substantiated with authenticated catalogue/manual, will not be considered
	8.6 Log book with instructions for daily, weekly, monthly and quarterly maintenance checklist. The job description of the hospital technician and company service engineer should be clearly spelt out.

Multipurpose electro hydraulic with manual override mobile Table with divided leg section suitable for all Gynaecological surgical procedures, complete with 5cm mattress and corded handset. (Gyn. OT Table)	
	A. General operating table features:
	15. Full-length radio-translucent top.
	16. 4 or 5 sections tabletop, which should be made of a special scratch resistant, hardwearing and easy to clean material. Base column cover to be made of 100% stainless steel alloy and stainless steel.
	17. Removable head and leg sections to suit different applications.
	18. Battery powered, with facility for connection to mains electricity for immediate use. Battery Exhaustion protection and low battery warning via an audible „beep"/display indicator should be available.
	19. Table should not have a thread/sharp edge for ensuring proper cleaning and user safety.
	20. Mattress should be of high quality that spans tabletop break for improved patient support. Its depth should be 50mm. Mattress must be Latex free.
	21. The robust handset should offer 8 controls namely Trend. /Reverse Trend, Lateral Tilt, Flexion/ Extension and Height functions.
	22. Brakes, 4nos Wheels
	23. Table should have a narrow T-shaped base allowing optimum access and greater stability.
	24. The table top should not be fitted with transverse members casting shadows on the X-ray images except for the release brackets for adjustment on either side.
	25. The Table should be operated by the following operating elements: corded hand control, Manual override panel with manual override facility.
	26. There should be „U" cut compatible for Gynae surgery
	B. Electrical specification:
	Special-design, maintenance-free rechargeable batteries with capacity for about a week's use in the operating room.
	Recharging of the batteries and supply of the operating table by means of a mains cord Nominal mains voltage (selectable) 220/230-240V AC via mains cord with inbuilt stabilizer
	C. Technical Data:
	Length : 6-6.5 ft
	Width: 500 mm or more
	Minimum height (without mattress): 700 mm.
	Maximum Height (without mattress): 1000 mm
	Maximum lateral tilt: 20-30 deg. (either side)
	Trendelenburg: atleast 25 deg.
	Reverse Trendelenburg : atleast 25 deg
	Head section adjustment : 140-45 deg.
	Leg section adjustment: +20 deg or more to -90 deg or more.
	Break (extension) position : 200-220 deg
	Break (flexion) position: 100-130 deg

	Cranial & caudal traversing: 200-300 mm. It should be operated with remote control.
	Back section adjustment: (-35 to +75) deg.
	Maximum patient weight: 180 kg or more in all positions.
	Technical Specification-
	Accessories
	Arm board - 2
	Lithotomy leg holders "Geepel type" (adult and paediatric)-1set each
	Body strap- 3
	Anaesthesia screen with clamps- 2
	Side supports with clamps – 2
	Knee crutches with clamps - 2
	Clamp, rotary- 4 pc
	Clamp, circular - 4 pc
	Accessories stand, mobile on castors- 1 pc
	Arm support, perplex -2 pc
	Infusion rod with clamp
	Drain Tray
	D Environmental factors
	Shall meet IEC-60601-1-2 :2001(Or Equivalent BIS) General Requirements of Safety for Electromagnetic Compatibility. or should comply with 89/366/EEC, EMC directive.
	The unit shall be capable of operating continuously in ambient temperature of 20-30 deg C and relative humidity of 15-90%
	The unit shall be capable of being stored continuously in ambient temperature of 0-50deg C and relative humidity of 15-90%
	E Power Supply
	Power input to be 220-240VAC, 50Hz fitted with Indian plug
	F Standards, Safety and Training
	– Deleted
	Manufacturer should have ISO certification for quality standards
	Comprehensive training for lab staff and support services till familiarity with the system.
	G Documentation
	User/Technical/Maintenance manuals to be supplied in English
	List of important spare parts and accessories with their part number and costing
	Compliance Report to be submitted in a tabulated and point wise manner clearly mentioning the page/para number of original catalogue/data sheet. Any point ,if not substantiated with authenticated catalogue/manual, will not be considered
	List of Equipments available for providing calibration and routine Preventive Maintenance Support, as per manufacturer documentation in service/technical manual
	Log book with instructions for daily, weekly, monthly and quarterly maintenance checklist. The job description of the hospital technician and company service engineer should be clearly spelt out.

DELIVERY BED
1 Description of Function
1.1 Delivery bed is used for Baby Delivery and should incorporate ideal blend of the patient's individual requirements on comfort and the professional needs of the delivery team, focusing on the esthetic and functional design of the entire product.
2 Operational Requirements
2.1 Delivery bed should be supplied with all accessories as mentioned in the technical specifications.
3 Technical Spetifications
3.1 Delivery Bed Should have following essential specifications:
1• It should have control devise for making height (44cm to 90cm) and back adjustments.(manual as well as remote control).
2• It should have collapsible side rails.
3• It should have three sectional mattress and seat section should have large perineal cut. The mattress thickness should be 50mm or more.
4• Head board and food section can be detached or slides and stores under the bed.
5• Should have wheels (dia- 6" or 8") provided with locking system.
6• Should have retractable foot section with indication for locking, so as to convert bed into table.
7• Should have infusion rods which have adjustable heights, quick release and attaches to all corners of bed.
8• Should have adjustable leg rests available as an accessory
9• Should have push grip handles
10• Should have sliding stainless steel bowl at perineal part of table
11• It should have catheter bag holder which can be attached on either side of bed
12•It should be able to give trendelenburg, reverse trendelburg and 60 degree sitting position both mechanically and electronically.
13• It should have adjustable foot supports for nursing staff
14• It should be easy to clean, sterilize (especially blood stains) and maintain
15. Frame should be of epoxy powder coated steel
16.Dimensions - Length: Minimum 180 cm and width: Minimum 75 cm
4 System Configuration Accessories, spares and consumables
4.1 All consumables required for installation and standardization of system to be given free of cost.
5 Environmental factors
5.1 The unit shall be capable of operating continuously in ambient temperature of 10-40 deg C and relative humidity of 30-90%
5.2 The unit shall be capable of being stored continuously in ambient temperature of 0-50deg C and relative humidity of 15-90%
6 Power Supply
6.1 Power input to be 220-240VAC, 50Hz fitted with indian plug

	6.2 UPS of suitable rating with voltage regulation and spike protection for 60 minutes back up.
	7 Standards, Safety and Training
	7.1 : Deleted
	7.2 Manufacturer should have ISO certification for quality standards.
	7.3 Comprehensive training for lab staff and support services till familiarity with the system
	8 Documentation
	8.1 User/Technical/Maintenance manuals to be supplied in English
	8.2 List of Equipments available for providing calibration and routine Preventive Maintenance Support, as per manufacturer documentation in service/technical manual
	8.3 Compliance Report to be submitted in a tabulated and point wise manner clearly mentioning the page/para number of original catalogue/data sheet. Any point ,if not substantiated with authenticated catalogue/manual, will not be considered.
	8.4 List of important spare parts and accessories with their part number and costing
	8.5 Log book with instructions for daily, weekly, monthly and quarterly maintenance checklist. The job description of the hospital technician and company service engineer should be clearly spelt out.
	Pelvic tilt: – 15 degree.
	Should have easy slide calf supports swing into correct positional lock with single lever.
	3. Should have CPR release.
	4. Weight capacity: 200 (Approx)

	LEEP SYSTEM with Smoke Evacuator & integrated cart
	Specification
	1. Should have electrosurgical generator with isolated power output and LED display located in front for precise power selection, deliver and easy to use
	2. Should have provision of choice to CUT, BLEND and COAG. Wave form to accommodate subtle differences in technique and electrode performance
	3. Should have RF output frequency 350 – 450 KHz power cut 0-100 watt.
	4. Should have flash faceplate membrane facilitate operation cleaning
	5. Should have microprocessor controlled for increased precision, accuracy, reproducibility and safety
	6. Should have pneumatic / normal spring type pedal for maximum safety
	7. Should have audible safety features include distinct tones for each operating setting
	8. Should have automatic self test mechanism ensures accurate system operation
	9. Should have high air flow efficiently captures smoke plume with a variable speed control
	10. Should have triple stage filtration captures airborne particulate matter, vapor and odor with a 99.999% efficiency level
	11. Should have virtually maintenance free
	12. Should have replacement filters available
	13. Standard accessories are: -1) hand piece adaptor 2) patient return (single use) 6) smoke evacuator package 7) smoke evacuator pre filter 8) smoke evacuator reducers 9) smoke evacuator disposable tubing (6 ft.) 10) ball electrode 11) electrode 2cmx0.8cm, 12c
	14. Deleted

Cryo Surgical System	
	Specification
	1. Operating Pressure Range : 40-60 bar.
	2. Coolant: N2O or CO2 in two cylinders (A type).
	3. Gas consumption for freezing: ca 35g – 50 g/min.
	4. Max. exhaust gas volume: 40-60 l/min
	5. The unit should have Manometer to monitor operating pressure.
	6. A different indicator lamp to indicate freezing and defrosting phase.
	7. Should have a connection pipe for gas exhaust.
	8. It should be mounted in a cart with cylinder case for easy mobilization
	9. Activation should be via footswitch or hand control.
	10. Min freezing temperature should reach within 5 seconds.
	11. It should be supplied with multiple different sized probe-tips to cater for cervical cryocautery of lesion of all sizes.
	12. All cryo probes and accessories should be autoclavable.
	13. Deleted
	14. Minimal maintenance, Flawless performance, Available with knob to regulate pressure.

CAESERAN SET		
	Item	Qty per set
1	* BP Handle No.04	2
2	DEbakey Forceps plain 8" atraumatic tissue forceps	4
3	* DEbakey Forceps toothed 6" atraumatic tissue forceps	4
4	* Adson Forceps plain 5"	2
5	* Adson Forceps toothed 5"	2
6	* Metzenbaum Scissor Stght 8" (TC TIP)	2
7	* Metzenbaum Scissor Cur 8" (TC TIP)	2
8(i)	* Kocher Artery Forceps Stght 7"	1
8(ii)	Haeny Mod Cur 8" Hysterectomy Clamp "	1
9(i)	* Babcock Tissue Forceps 6"	2
9(ii)	* Babcock Tissue Forceps 7"	2
10(i)	* Allis Tissue Forceps 6"	4
10(ii)	* Allis Tissue Forceps 8"	4
11	* Artery Forceps Cur 8" long	2
12	* Artery Forceps Cur 6" Medium	2
13	* Mosquito Artery Forcep Cur 5"	4
14	* Doyen"s Retractor 3"	2
15	* Langenback Retractor 11x35mm	1
16	Heavy Straight Scissor S.S./Sharp 8"	2
17	* Needle Holder 8" & 6" (TC TIP)	03+2
18	* Kidney Tray 8" S.S.	2
19	* Bowl S.S.	3
20	Green Armytage X"s series	4
21	* Artery Forceps str 6"	2
22	* Right Angle Artery Forcep MIXTER 8"	2
23	* Sponge Holding Forcep 10" & 6"	02+02
24	* Suction Tip Pool Stght 8mm All S.S.	1
25(i)	* Cross Action Towel Clips Engl.Mod. Angled 3.5"	4
25(ii)	* Cross Action Towel Clips Backhaus 3"	1
26	Wrigley Outlet Forceps	01 set
	Instruments should be of High quality stainless steel, corrosive resistant & reusable, and rust free	
	Demonstration of all the instruments is must as & when required	
	* Deleted	

MTP SUCTION	
	Technical Specification
	Should have following facility
	1 Piston/cylinder system (self lubricating)
	2 Fast vacuum build up, vacuum capacity 40 - 50 L/min with vacuum of minimum 90 Kpa/-675mm Hg.
	3 Should be very quiet in operation.
	4 3 ltrs double suction container, polysulfone, graduated with lid for overflow protection and 2 spare suction tuby
	5 Separate foot on/off switch
	6 operated on 220-240 V/50 Hz
	7 Mobile caster stand on 4 antistatic castor, 2 with locking device
	8 Equipment should be manufactured by well known International Company
	9 Deleted
	The Machine should be ergonomically designed and easy to clean.

ABDOMINAL / VAGINAL HYSTERECTOMY PER SET		
	Item	Qty per set
1	* BP Handle No 04	2
2	* Dissecting Forceps plain 8"	1
3	* Dissecting Forceps toothed 8"	1
4	* Dissecting Forceps plain 6"	1
5	* Dissecting Forceps toothed 6"	1
6	* Kocher Artery Forceps Stght 7"	2
7	* Kocher Artery Forceps Cur 7"	8
8	* Artery Forceps Cur 8" long	4
9	* Artery Forceps Cur 6" Medium (FINE)	4
10	* Mosquito Artery Forcep Cur 5"	4
11	* Artery Forceps str 6"	4
12	* Doyen"s Retractor 3"	1
13	* Deaver"s Retractor 1" & 3"	2+2
14	* Langenback Retractor 8x35mm	1
15	* Morris Retractor with ring handle 2.5"	1
16(i)	* Babcock Tissue Forceps 6"	2
16(ii)	* Babcock Tissue Forceps 7"	2
16(i)	* Allis Tissue Forceps 6"	8
16(ii)	* Allis Tissue Forceps 8"	8
17	* Kidney Tray 8" S.S.	2
18	* Bowl S.S. 6"	3
19	* Metzenbaum Scissor Stght 8" (TC TIP)	1
20(i)	Metzenbaum Scissor Cur 6" (TC TIP)	2
20(ii)	Metzenbaum Scissor Cur 8" (TC TIP)	1
21(i)	* Needle Holder 6" (TC TIP)	2
21(ii)	* Needle Holder 8" (TC TIP)	1
22	* Myomectomy Screw (small, medium & large)	01 each
23(i)	* Right Angle Artery Forcep MIXTER 6"	1
23(ii)	* Right Angle Artery Forcep MIXTER 8"	1
24	* Sponge Holding Forcep 10"	2
25	* Balfour Retractor 10" shaft for abdominal hysterectomy Doyen"s 8" shaft	1
26(i)	* Suction Tip Yankeur All S.S.	1
26(ii)	* Suction Tip Pool Stght 8mm All S.S.	1
27(i)	* Cross Action Towel Clips Engl.Mod. Angled 3.5"	3
27(ii)	* Cross Action Towel Clips Backhaus 3"	2
28	Heaney Atrauma Straight UNS-370-23 Hysterectomy Clamps	2
29	Heaney Atrauma Curved UNS-371-22 Hysterectomy Clamps	4
30	Uterine manipulator. double action 11"	2
31	Mayo"s Scissors (TC TIP)	2
32	Kelly Clamps	5
33	Right Angled Clamps	2
34	Suction tips	2
35	Micro needle holder (TC TIP)	2
36	Microscissors (TC TIP)	2
37	Wertheim"s Vaginal clamp	2
38	TC-parametrium scissors	2

89	Shirodkar"s uterine holding forceps & rubber pad	1
	Instruments should be of High quality stainless steel, reusable, light weight, corrosive resistant, and rust free	
	Demonstration of the equipment is must as and when required	
	Deleted	

Bubble CPAP Machine	
Sl.No	**Technical Specification**
	Bubble CPAP machine (Without air compressor) for use in preterm and term neonates
	TECHNICAL SPECIFICATION
1	Should be light weight, easily portable, reliable and sturdy.
2	**CPAP generator:**
a	Pressure setting from 3 to 10cm H2O
b	Should have a detachable overflow container
c	Should deliver the intended pressure constantly and accurately (± 1cm)
d	The gradations (on the sliding rod) should be easily visible from a distance of 4 feet
3	**Air-oxygen blender**
a	FiO2 concentration should be adjustable (21-100%) and accurate (±3%)
4	**Humidifier:**
a	**Should automatically regulate the necessary temperature (37^0C)**
b	Should have a closed system for filling-up the required water level
c	Should display the chamber temperature and/or the temperature at patient end
d	Should have ports for attaching a temperature probe as well as heater wire
5	**Patient circuits:**
a	Should have the option of using both disposable and reusable circuits.
b	Thermoregulation – with both manual and servo modes; (temperature probe, heater source, and a thermostat mechanism are essential)
c	**Oxygen therapy – air/oxygen blender and flow meter**
d	Disposable circuits should be readily available and reasonable priced
e	Should have /be able to accommodate a heater wire; heat loss should be minimal along its length.
6	**Safety Features**
a	Limiting the delivered pressure in the event of an occlusion
b	High/low pressure alarm
c	A stand or arm support for holding the nasal tubing in support.
d	**Deleted**
7	**Other features:**
a	Sturdy wheels for easy portability
10	Following consumables with be supplied with each unit:
a	Nasal prongs (with each unit) - 10 each (Small, medium, large)
b	Nasal interface - 20 nos
c	Reusable tubes 2 sets
d	CPAP generator 10 sets
e	100 disposable complete sets for delivery of CPAP excluding nasal prongs with each unit per year for 3 years (total 100 nos. per year i.e. 300 no in 3 years)
f	Nasal mask (10 each of 3 different sizes) - user will decide the size at the time of delivery

g	Head Bonnet (10 each of 4 different size) - user will decide the size at the time of delivery
SN	BOQ
1	System as specified
2	Nasal prongs (with each unit) - (Small, medium, large)
3	Nasal interface
4	Reusable tubes
5	CPAP generator
6	Nasal mask (3 different sizes)
7	Head Bonnet (4 different size)

Transport Incubator with ventilator		
Sl.No	Technical Specification	
	SPECIFICATION:	
1	Double wall transparent canopy with mattress, mount on collapsible trolley of OEM (same make) with lockable castors	
2	Front and head access door, slide-out mattress tray With baby restraining straps	
3	Should have 2 iris port holes for ventilator tubing, SPO2 probes etc	
4	Warm air circulation system	
5	Bacterial filter to remove air born particles	
6	Incubator air temperature monitoring and servo control : 25 to 38 deg C , increments 0.1deg C,Humidity control.	
7	Digital displays outside shows air and skin temperature	
8	Ventilator (OEM) – basic ventilator with at least CPAP and IMV modes with controls for CPAP/PEEP. PIP, rate. Ti and FiO2	
9	**Two 10L integrated oxygen cylinders, regulator and flow meter with compatible connectors for refilling**	
10	Audiovisual alarms: high /low air temperature, temperature sensor failure , power failure and low battery	
11	Portable SpO2 monitors with resusable neonatal probes (wrap type) - 10 nos should be quoted	
12	Construction allows frequent washing and disinfection of the incubator	
13	Battery and AC supported.	
14	Should have facility for IV stand.	
15	Power requirements : 220-240V / 50 Hz and internal re-chargeable batteries (autonomy 4-6 hrs)	
16	The battery should be capable of recharging from mains as well as the ambulance power source	
17	It should be able to run the following equipment when disconnected from the power source: heater, suction machine, ventilator	
18	Deleted	
	Supplied with:	
	5 x spare skin temperature probe	
	1 x spare rechargeable battery.	
	2 x empty 10 L oxygen cylinders.	
	2 x spare set of fuses.	
	Slot for X-Ray cassette for taking X-rays without removing babies	
SN	**BOQ**	**QTY**
1	System as specified	1
2	Skin temperature probe	5
3	Rechargeable battery.	2
4	10 L oxygen cylinders.	2
5	set of fuses.	3

Sl.No	Centrifuge-capillary
	Specification:
1	Benchtop centrifuge for quick assessment of hematocrit on microcapillary blood samples.
2	**Rotation minimum should be 13,000 rpm adjustable in increments of 100**
3	Timer settable in minutes, maximum preset 99 minutes
4	Safety lid-lock feature and emergency lid release
5	Motor overheating protection and imbalance shut-off
6	Digital display shows rpm and time
7	Angle rotor, 24 positions, maximum approx 16000 rcf
8	2 hematocrit readers
9	**Noise level less than 56 dB**
10	Power requirement: 220V/50Hz
11	Deleted
	Supplied with each unit:
	a. 10x pack of sealing compound for micro capillary tubes
	b. 10 spare sets of fuses
	c. Carbons: 5 pairs.
	d. 100 pack of 100 heparinised capillary tubes

Open Care System			
Sl.No	Technical Specification		
1	Neonatal open care system should have integrated bassinet, heating element, timer and weighing scale		
2	The body structure should be roubust so that it should not bent on itself		
3	Warmer module swivel 90° on either side horizontally		
4	Examination light - LED: light intensity 0-1200 Lux Facility for an examination light with variable intensity should be present		
5	Heating element: Heater output should be <= 600 W , medical grade with parabolic reflector and protected by grid, warming system with microprocessor based controls, probes & alarms.		
a	Heating element should be covered under warranty		
6	Should have uniform heating from all points over the bassinet		
7	Control unit allows air and skin temperature preset (LED indicator) and drives radiant heater output (servo and manual).		
8	**Bassinet tilt**		
a	Should allow tilt for Trendelenburg as well as reverse Trendelenburg position (+/-15 deg)		
b	Should have continuous variable bed tilting mechanism for a bed tilt on either side		
c	Should have motorized variable height adjustment mechanism to vary the cradle / baby bed between from the ground, should be able to adjust height of the bed from either side of the warmer		
d	Should have inbuilt weighing scale which can weigh ranging from 200gm to 7kg (with +/-5gm accuracy) with Tare facility		
e	Should have side support and can be droped down for easy access to the baby, the mechanism for the same should be roubust		
f	Adjustable bassinet height from ground should be minimum 80-85 cm and max 100-110cm		
9	Should have mattress and it should be seald in such a way that it should not allow ingress of liquid		
10	Integrated timer on control panel: 1 to 59 minute in 1 sec increment (min 20 minutes), with count-up /count-down feature and with alarm facility		
11	Temperature range, skin : 34 to 38°C (use pre-settable)		
12	Temperature accuracy of +/- 0.1°C at the set temperature		
13	Monitoring of skin temperature by means of sensor, range ; 30 to 42°C (Sensor should cover under both warranty & CMC)		
14	**Manual mode**		
i	Adjustable in steps from 0 to 100% in increments of 5%		
ii	Heater power should be reduced to 50 - 60% after 10-15 minutes in manual mode for baby safety		
15	Control unit :		

a	Audiovisual alarms according to timer and temperature presets avoiding overheating/under haeting (+/- 0.5 deg C from preset)		
b	Text messsage alarms readable from distance		
c	Provision to silence alarm manually for a preset time		
16	Under table 2 no. of storage drawers		
17	Two side rails allow for mounting of accessories		
18	Hood suspended above the basinet integrates heating elements and overhead light		
19	Antistatic castors with 4 brakes		
20	Display reports systems errors, sensor failures.		
21	Should have a slot for X-Ray cassette without removing baby and suitable for babygram		
22	Operating voltage 220-240 V 50Hz and equipment should have voltage surge protection facility		
23	Deleted		
	Supplied with:		
1	Additional 5 reusable skin temperature probes (including connection cables)		
2	Price of the consumables should be quoted for 10 years separately		
SN	**BOQ**	**QTY**	**UOM**
1	System as specified	1	Nos
2	Reusable skin temperature probes (including connection cables)	5	Nos

Blood Tube Sealer	
SN	**Technical Specification**
1	Should be heavy duty radio frequency sealer.
2	Should be capable of doing 500+ sealing in 8 hrs and should be capable of functioning for minimum 12 hrs nonstop.
3	Should be a compact single unit
4	Should have high frequency sealing with low RF emission
5	There should be automatic detection of the tube by pressing of a lever which activates sensor.
6	Should be able to detect wet tube, leakage and sealing defects. There should be and alarm in case seal is not safe and completed.
7	There should be uniform sealing irrespective of power supply variations.
8	Tube thickness of up to 6 mm of diameter and wall thickness up to 0.75 mm can be sensed and sealed automatically.
9	Should be able to making wide Seal of 2mm thickness.
10	Indication of seal in progress should be there.
11	Sealing time should be less than 2 sec.
12	Separable rupture line to separate tube after sealing.
13	Should ensure safety against electrical shock hazards, fire hazards, and mechanical hazards.
14	There should be no hemolysis of blood in the tube segments.
15	No warm-up time should be required
16	Should be able to withstand voltage fluctuation
17	It should be easy to clean.
18	Should have hand grip on top side of the equipment for easy lifting of equipment.
19	Splashguard to protect user from any kind of blood splash during operation.
20	Deleted
21	ISO 13485 certification specific for the product should be submitted.
22	Weight of equipment should not exceed 7 Kg.
23	Original literature of equipment should be submitted.
24	Firm will have to supply the suitable stabilizer with the equipment if it is essential for the performance of the equipment.
25	User"s list should be provided with satisfactory report for the last three years from three Licensed Blood Banks with contact details.
26	Electrical: The equipment should be able to run on the existing electrical provision
27	Calibration certificate shall be provided at the time of installation in respect of all the parameters that require calibration.
28	The units shall be capable of being stored continuously in ambient temperature of 0 - 50C and relative humidity of 15-90%.
29	The units shall be capable of being operating continuously in ambient temperature of 10 - 40C and relative humidity of 15-90%.

Sl NO.	Dielectric Tube Sealer, Handheld
	Purpose of Equipment:
	Handheld Blood Bag Tube Sealer is a compact handheld equipment to seal the Blood Bag pilot PVC tubing by transient radio frequency heating and sealing, with no haemolysis.
	Quality Standard:
	Manufacturing should be compliant with ISO 13485.
	Deleted
	Equipment must meet electrical safety specifications of IEC 60601.
	Operational requirements:
	Should gently seal tubing with no hemolysis, using radiofrequency heating
	Should be capable of making wide seal of at least 2 mm width.
	Should be rechargeable battery operated compact (less than 3 Kg) hand held type, not bench top type.
	Sealing time should not be >2 sec
	Electrodes should be well protected by a cover to prevent blood splutter.
	Should have indicator lamp for sealing process
	No warm up time should be required
	Should have tear-seal feature to make segments that can be easily separated by hand
	No. of seals per charge should be more than 1000 continuous seals from a fully charged battery.
	Charger should be compatible with input voltage: 240V 50 Hz Single phase Ac
	Additional requirements
	All equipment should specify qualifications for design, installation, operation and performance.
	Validation and calibration reports should have traceability to applicable national and international standards.
	Complete with comprehensive set of spare parts and a suitable capacity voltage stabilizer and surge protector with the charging set. Portable box or bag for outdoor blood collection.
	Necessary catalogues, technical write up in English, should be attached with the offer both in hard and electronic copies.
	Demonstration and continued comprehensive training for lab staff and support services till familiarity with the system.
	Should provide electronic and hard copies of User Manual (English), Service manual (English) and Complete construction details with respect to material specification, thickness, finish etc.
	Should provide necessary instructions for calibration and routine Preventive Maintenance as per manufacturer documentation in service/technical manual.

Blood Donor Couch	
SN	Technical Specification
1	Based on haemodynamic principles to allow blood volumes to redistribute with cushioned surface for donor comfort.
2	Armrest suitable for phlebotomy and better blood flow.
3	Automatic adjustment of arm- rest to adjust length more than 50 cm and width of 15 cm to set the arm position to the donor"s comfort with adjustable height mandatory for the equipment.
4	Material should be waterproof with rounded borders and easy to clean.
5	The length of the couch should be 200 cm to 215 cm to accommodate all type of donors.
6	Specially designed for comfort of donor and phlebotomist
7	Should be able to accommodate Donor weight capacity of more than 200 Kg
8	Electronic remote adjustment for height and comfortable sitting position.
9	Provision to shift the donor"s position from "head high – foot low" to "foot high- head low" or any position in between for optimal blood collection.
10	Only one button to reach shock position: Head low in case donor reaction.
11	2/3 motors with separate control through remote for positioning of couch.
12	Electric motor should have microprocessor controlled limit switch and safety circuit.
13	Central locking with locking lever: Couch should be movable with wheels with locking facility.
14	Seat height adjustable to enable to lower it as low as 50 – 75 cm from the floor level for donor to sit easily.
15	Provision of I.V. stand with provision keeping standard Bio mixer on both sides.
16	Trolley should be provided with each couch for keeping blood collection monitor and other consumables. Provision to fix IV stand and trolley with 5 and 15 amp plug points for the attachment of bio mixers.
17	Good quality Couch covers (two sets) to be provided along with the couches including handles.
18	Original literature of equipment should be submitted.
19	User"s list should be attached with satisfactory report for the last there years from three user licensed blood bank with contact details.
20	Demonstration of performance of equipment is compulsory in nearby area failing to which will be disqualification.
21	Electrical: The equipment should be able to run on the existing electrical provision.
22	– Deleted –
23	Should be supply with suitable stabilizer with BIS/CE mark.
	Accessories:
24	Dust cover -1
25	Power cable-1

26	Additional arm rest (pair)-01 pair.		
27	Remote control-1 No		
	[redacted]	QTY	UOM
1	System as specified	1	Nos

Sl. No	Portable and folding Blood Donor Couches
1	Mobile and Foldable designed to fold into a compact and portable assembly.
2	Dimensions: 24-30"W X 62-75"L X 18-25"H
3	Weight should not be more than 20 Kg.
4	Should be easily to clean and maintain
5	Should be in durable tubular metallic material rust resistant.
6	Should be able to bear the larger donors weight up to 150 Kg.
7	Should have padded armrest for extra comfort to the donor, adjustable for proper arm placement.
8	Standard Electronic blood collection scale with each couch (Optional)
9	Couch should easily be reclined into a secured shock position
10	Pockets to be provided at the back of each couch for keeping accessories
11	Should be provided with washable linen covers(1 pair) with each couch
12	Should be sturdy and should be able to withstand transportation rigors
13	Should be provided with transportation trolley to hold minimum 2 couches
14	Cost of transportation trolley to be included in the main costing.
15	Original literature of equipment should be submitted.
16	Users list should be attached with satisfactory report for the last years from three users with contact details
17	Minimum of 3 installation in tertiary care institution.

Refrigerated Blood Bag Centrifuge	
SN	Technical Specification
I	**Purpose:** Large volume floor standing refrigerated centrifuge for separation of components from whole blood.
II	**Design and operation:**
a	Stable, sturdy all-steel design with stainless steel rotor chamber, should be easy to clean corrosion resistant.
b	**Deleted**
c	Microprocessor controlled
d	Programmable memory with tamper proof program saving facility, with parallel saving of at least 30 programs
e	CFC free refrigerant.
f	Various formats of Swing-out rotors with metal buckets and with or without wind shields that should be able to accommodate at least the following:
	Twelve 350ml and/or 450ml single, double, triple, quadruple/quintuple blood bags with SAGM bag and empty satellite bags with in Line filter system
g	Removable plastic adapters to hold single/ double/ triple/ quadruple blood bags with partition in every bucket.
h	Insert with hook adapter to spin buffy coat or small volume of blood and balancing weights for inserts.
i	Automatic lid lock.
III	**Speed and force:**
a	Minimum speed 5,000 rpm and above.
b	RCF (Relative Centrifugal force) for blood bags: 6000g-6500g.
c	Acceleration and deceleration profiles should be independently adjustable with at least nine brake levels and option for free coasting.
d	Speed variation: microprocessor controlled rotor speed to within 10 rpm of set value.
IV	**Temperature control**
a	Range at least: -20°C to +40°C.
b	Adjustable in 1°C intervals.
c	Microprocessor controlled rotor temperature within 1°C of set temperature regardless of centrifuge speed.
d	Programmable centrifugation time: 0min-99hr with minimum resolution of 1 minute.
e	Digital display (real time and set target) of temperature, speed and time with minimum no. of 3 digit resolution.
f	Should incorporate alarms for imbalance detection, lid interlock, over temperature, rotor over speed.
g	Motor imbalance detection: automatic shutdown of centrifuge if rotor load is out of balance with appropriate indicator.
h	Power requirement:200-100V, 50Hz, single phase
i	The equipment shall be suitable for operation from 0 to 40°C at 90% relative humidity. Electronic circuitry shall be tropicalised for this ambient condition.
j	Noise level within 60 decibels.

h	The equipment should come with customized castor for changing location.
i	Protection of data: in event of power interruption or complete failure, data should remain stored indefinitely.
m	Should have a provision for external connectivity.
n	It shall have a security lock to prevent unintentional switch off and also unauthorized opening of the equipment.
p	Automatic line voltage corrector/ voltage stabilizer cost to be included in the main equipment.
q	A line voltage corrector of appropriate rating (10 KVA or as per the requirement of equipment) should form part of standard configuration.
r	Copper wound single phase automatic line voltage corrector conforming to IS: 9815(PLI)/94 with latest amendments or equivalent international standards fitted with a voltmeter and switch to indicate output/ input voltage.
s	Input voltage: 140-280 V,50 Hz, output voltage: 220 V ±10%.
t	Input output voltmeter and amperemeter. Protection for high low voltage cut off, overload and short circuit protection.
u	Equipment should be supplied with 2 meter cord at input and fitted with plugs of appropriate rating.
v	Make of the line voltage corrector shall be indicated.
V	**Certifications:**
a	Deleted
b	Quality certification: ISO13485.
c	Electrical safety: Equipment meets electrical safety specifications such as that of IEC (Class I)
VI	**Additional requirements:**
a	All equipment should specify qualifications for design, installation, operation and performance.
b	Validation and calibration reports should have traceability to applicable national and international standards
c	Extra set of plastic buckets to be provided with the equipment. Costing of the buckets inclusive in the main cost.
d	Complete with comprehensive set of spare parts and accessories including: Double pan balance, Balancing weights and plates, plastic inserts and spacers and hooks for adjusting to different types and sizes of bag/tubing/filter designs, and a suitable capacity voltage stabilizer should be supplied free of cost with the system.
e	Warranty for 5 years and CMC/AMC for 5 years with spare parts availability.
f	The make, rating, model, description, specifications, price quantity of each item should be furnished separately.
g	Necessary catalogues, technical write up in English, should be attached with the offer both in hard and electronic copies.
h	Performance, efficiency, other factors as applicable should be furnished.
i	Demonstration and continued comprehensive training for lab staff and support services till familiarity with the system.

j	Should provide electronic and hard copies of User Manual (English), Service manual (English) and Complete construction details with respect to material specification, thickness, finish etc.
k	Should provide a set of equipments for calibration (eg tachometer) and routine Preventive Maintenance as per manufacturer documentation in service/technical manual.
l	Should provide Log book with instructions for daily, weekly, monthly and quarterly maintenance checklist. The job description of the hospital technician and company service engineer should be clearly spelt out.

Blood Bank Refrigerator	
SN	Technical Specification
1	**Description of Function**
1.1	For storing blood & blood products, it should be microprocessor based.
2	**Technical Specifications**
2.1	Blood Bank Refrigerator should have capacity to hold 300-350 blood bags of **450ml capacity**
2.2	Temperature range **from 2 deg C to 6 deg C with accuracy of less than equal to 0.5 deg C.**
2.3	Holdover time : full load of blood bags at 4 deg C should take more than 1.5 hrs to rise above 6 deg C if power off and it should be supported by providing performance curves
2.4	Cooling down time: A full load of blood bags at 25 deg C should not take more than 12 hrs for all the bags to reach below 6 deg C **and it should be supported by providing performance curves.**
2.5	It should have galvanized sheet steel construction, powder coated and adjustable feet.
2.6	No welded joint to be exposed for rusting.
2.7	Insulation of high-grade pressure – foam material greater than 80mm thick CFC free.
2.8	Lockable door **with front glass** and tight sealing (Magnetic closing) with uniform cooling to prevent cold loss. Should **have at least 4 rollout type drawers with stainless steel make. Door opening angle limited to 110 degrees with door opening audio and visual alarms.**
2.9	Automatic defrosting and condensed melt water evaporation.
2.1	Re-circulating air-cooling system.
~~2.11~~	~~Deleted~~
2.12	Hermetically enclosed, low noise, vibration proof/ low vibration compressor.
2.13	Visual and audio signal alarm system for over temperature, under temperature ,power failure, door opening
2.14	Epoxy coated outside finish and GS interior.
2.15	Low noise, automatic defrosting, CFC free & HCFC free.
2.16	Digital temperature display should be provided. **Should provide datalogger or circular chart recorder.**
2.17	Calibration certificate shall be provided at the time of installation in respect of all the parameters that require calibration.
2.18	Power input to be 220-240VAC, 50Hz.
2.19	Should be BIS or **European CE with 4 digit notified body number or US FDA approved product**
2.20	The units shall be capable of being stored continuously in ambient temperature of **0 - 35 deg C** and relative humidity of 15-90%.
2.21	The units shall be capable of being operating continuously in ambient temperature of 10 - 40C and relative humidity of 15-90%.
2.22	Accessories

	Datalogger - 1 no or Circular chart recorder 1000 nos Suitable voltage regulator/stabilizer meeting ISI specification - 1 no		
	BOQ	QTY	UOM
1	System as specified	1	Nos

-40 DEEP FREEZER	
SN	Technical Specification
1	TYPE : Upright
2	**CAPACITY: 500-600 Litres**
3	OPERATING TEMPERTURE: -40 deg C
4	ELECTRIC SUPPLY: 220V/50Hz, 10 Amps. Single phase
5	Fully programmable microprocessor based temperature controller with membrane keypad and eye level control panel.
6	Hermetically enclosed, low noise, vibration proof/low vibration compressor.
7	Construction should be of thin vacuum insulation panel. Insulation should be high density polyurethane foam > 80mm thick, foaming agent CFC free or equivalent gasket double seal
8	System should have Stainless steel interior and tough, powder coated exterior finish.
9	Freezer should have 4 or more Compartment with two or more adjustable height stainless steel shelves. Separate inner door for each compartment
10	Holdover time : full load of plasma bags at -36 deg C should take at least 1 hrs to rise above -20 deg C if power off **and it should be supported by providing performance curves.**
11	Cooling down time: A full load of plasma bags at 25 deg C should not take more than 5 hrs for all the bags to reach below -5 deg C **and it should be supported by providing performance curves**
12	The door and front panel air filter should be there.
13	**Deleted**
14	Heavy duty lockable castors and lockable outer doors.
15	Freezer must have interface **data logging port mandatory and/or circular thermograph** and it must also have on board diagnostic software.
16	Freezer must have interface data logging port and it must also have on board diagnostic software.
17	Freezer must have three or more compartments with inner doors for easy handling of samples.
18	Audible and visible alarms for temperature, power failure, system failure, battery low etc. and it also have remote alarm port for connection to an auto dialer.
19	Freezer must use CFC-FREE , HCFC-FREE refrigerants , and refrigeration system must be energy efficient and hermetically sealed cascade refrigeration system.
20	External or internal voltage stabilizer should be provided so that Compressor should be capable to run any voltage between 190 – 270V. Manufacturing site for the freezer must
21	Deleted
22	The units shall be capable of being stored continuously in ambient temperature of 0 - 50C and relative humidity of 15-90%.
23	Deleted
24	**Accessories**
	Datalogger - 1 no and /or Circular thermograph 1000 nos Suitable voltage regulator/stabilizer meeting ISI specification - 1 no

25	Calibration certificate shall be provided at the time of installation in respect of all the parameters that require calibration.		
	BOQ	QTY	UOM
1	System as specified	1	Nos

-80 DEEP FREEZER	
SN	Technical Specification
1	TYPE : Upright
2	CAPACITY: 600 Litres
3	OPERATING TEMPERTURE: -75 to -85 deg C with accuracy of 0.5 deg C.
4	ELECTRIC SUPPLY: 220V/50Hz, 10 Amps, Single phase
5	Fully programmable microprocessor based temperature controller with membrane keypad and eye level control panel.
6	Hermetically enclosed, low noise, vibration proof/low vibration compressor.
7	Construction should be of thin vaccum insulation panel. Insulation should be high density polyurethane CFC free or equivalent gasket double seal silicon
8	System should have Stainless steel interior and tough, powder coated exterior finish.
9	Freezer should have 4 or more Compartment with two or more adjustable height stainless steel shelves. Separate inner door for each compartment
10	Holdover time : full load of plasma bags at -76 deg C should take at least 1 hrs to rise above -60 deg C if power off and it should be supported by providing performance curves
11	Cooling down time: A full load of plasma bags at 25 deg C should not take more than 5 hrs for all the bags to reach below - 70deg C and it should be supported by providing performance curves
12	The door and front panel air filter should be there.
~~13~~	Deleted
14	Heavy duty lockable castors and lockable outer doors.
15	Freezer must have battery back up for display - up and set point security through password protection for preventing unauthorized tampering.
16	Freezer must have interface data logging port or circular thermograph and it must also have on board diagnostic software.
17	Freezer must have three or more compartments with inner doors for easy handling of samples.
18	Audible and visible alarms for temperature, power failure, system failure, battery low etc. and it also have remote alarm port for connection to an auto dialer.
19	Freezer must use CFC-FREE , HCFC-FREE refrigerants , and refrigeration system must be energy efficient and hermetically sealed cascade refrigeration systems.
20	External or internal voltage stabilizer should be provided so that Compressor should be capable to run any voltage between 190 – 270V. Manufacturing site for the freezer must have ISO 9001 standard quality test requirements and IEC 61010 electrical safety.
21	Deleted
22	The units shall be capable of being stored continuously in ambient temperature of 0 - 50C and relative humidity of 15-90%.
23	The units shall be capable of being operating continuously in ambient temperature of 10 - 40C and relative humidity of 15-90%.
24	Accessories

	Datalogger - 1 no OR Circular Thermograph1000 nos Suitable voltage regulator/stabilizer meeting ISI specification - 1 no		
25	Calibration certificate shall be provided at the time of installation in respect of all the parameters that require calibration.		
	BOQ	**QTY**	**UOM**
1	System as specified	1	Nos

Platelet incubator with agitator			
SN	Technical Specification		
1	Platelet incubator should have the provision to store 96-platelet bags agitator.		
2	Should have transparent outer door for clear visibility		
3	Should have micro processor controlled LCD display with 0.1 deg C graduation and temperature graph display		
4	Should have automated high/low alarm with alarm testing		
5	Should have independent temperature controller.		
6	Should have 7 days inkless chart recorder with battery back up to one hour for continuous operation during power failure , should be supply with cash pan		
7	The firm will have to supply 300 temperature recorder chart papers and 10 ink pens (if the temperature recorder is not inkless) along with the equipment free of cost.		
8	Should be able to maintain a temperature of 22°C with ± 2 degree variation with accuracy of 0.5 deg C preferably 0.1 deg C.		
9	Should have digital temperature indicator cum controller		
10	Should have forced air circulation for uniformity of temperature all over the incubator.		
11	Inner chamber should be made of stain less steel and outer cabinet made of MS sheet powder coated.		
	Platelet Agitator		
12	Should be able to store minimum 96 random bags or aphaeresis bags of different sizes with gentle side-to-side agitation at 3.6 to 4cm, motion of 60-70 strokes per minute.		
13	Graphical display of agitation speed of the agitator		
	Shelves:		
14	Should be made of good quality,		
15	Coated with bacteria resistant material,		
16	Perforated so that air circulation on both side of bags		
17	Should be made of 'non slip' material		
19	Removable shelves.		
20	Should have noiseless heavy-duty ball bearing gear motor, which should continuously operate for 24 hours.		
21	Should have built in motion alarm for unplanned ceased agitation, sensor failure, agitator off. :		
22	Firm will have to supply the stabilizer if required along with the equipment free of cost		
23	Original literature of equipment should be submitted.		
25	User's list should be attached with satisfactory report for the last three years from three licensed blood banks with contact details.		
16	Electrical: The equipment should be able to run on the existing electrical provision		
17	Suitable UPS with maintenance free batteries with min 1 hr back up		
	BOQ	QTY.	UOM
1	System as specified	1	Nos
2	UPS	1	Nos

Sl No.	Vertical Reagent Refrigerator
1	Storage Capacity: Should be at least 600 Liters capacity
2	Set temperature 4°C with temperature range 2°C to 6°C and adjustable with setting accuracy of ±0.5°C with data logger or thermograph.
3	Refrigeration: Non- CFC cooled refrigeration
4	Should have good insulation to maintain required temperature
5	Should have good metallic door with removable shelves inside for easy cleaning.
6	Microprocessor based temperature controller with integrated audiovisual temperature and power alarm function with digital monitoring display.
7	Safety features: Audio alarm for all the following parameters should be there: temperature fluctuation & power failure, set point alarm, low alarm point, Door opening audio and visual display alarm.
8	Safety thermostat to avoid negative temperatures.
9	Should have battery back up for temperature display and power alarm.
10	Interval temperature hold over time in case of power failure should be at least 1.5 hours.
11	Should have castor wheels with locking facility
12	Original literature of equipment should be submitted.
13	Deleted
14	Should be ISO 13485 approved product.
15	Firm should supply the relevant calibration certificate for the equipment from NABL accredited Lab.
16	User"s list should be provided with satisfactory report for the last years from three Licensed Blood Banks with contact details.
17	Firm will have to supply the stabilizer if required along with the equipment free of cost.
18	Demonstration of performance of equipment is compulsory in nearby area failing to which will be disqualification.
19	Electrical: The equipment should be able to run on the existing electrical provision

Sterile connecting Device (Tube Welder)			
SN	Technical Specification		
1	Should accommodate and weld all types of blood bags tubing in use in our country		
2	The welding should be seamless		
3	Should be capable of joining wet-wet/wet-dry/dry-dry tubes. External diameter 3.9-4.5mm and internal diameter 2.9-3.1mm. Process time 20-30 seconds. Should be able to generate a temperature of 320 deg C to prevent contamination.		
4	Welding should not affect the quality of the tube in terms of its physical and chemical properties and it should not cause hemolysis.		
5	It should have LED indicators to display the actual status of the ongoing procedural steps and audio- visual alarm system for any functional irregularities.		
6	Requirement for tube length to be welding/docking should be as small as possible		
7	The welding accessories should be available with the local agent throughout year.		
8	**The price for 1000 wafers/Docks will be taken for price comparison and the price will be frozen for 5 years. Proprietry article certificate for the consumables mandatory including period of validity or list of third party authorized suppliers of consumables for the equipment.**		
9	Minimum consumables **(100 wafers/docks)** to be provided at the time of installation free of cost		
10	Certifications:		
	Deleted		
	Quality certifications: ISO 13485 certified		
11	Firm will have to supply compatible UPS with minimum half hr backup along with the equipment free of cost.		
12	Original literature of equipment and consumables should be submitted.		
13	Electrical: The equipment should be able to run on the existing electrical provision		
	BOQ	QTY	UOM
1	System as specified	1	Nos
2	UPS	1	Nos

Laminar Air–Flow Bench (Bio- Safety Cabinet)
Floor model, horizontal flow, well lighted, work space, low vibration and noise. Easy to maneuver due to caster wheel provision. Overall dimension of workspace should be approximately 1700mm x 600mm x 600mm
Construction:
a) Cabinet: Stainless steel sheet of 20 SWG lining
b) Front panels: Removable transparent scratch resistance sheet of approximately 6 mm thickness
c) Side Panels: Fixed transparent scratch resistant sheet of approximately 6 mm thickness.
d) Fluroscent tubelight with diffuser acrylic 120 decalux on work surface.
Firm will have to supply the stabilizer with the equipment if required.
User"s list should be provided with satisfactory report for the last three years form three Licensed Blood Banks with contact details.
Demonstration of performance of equipment is compulsory in nearby area failing which the firm will not be considered for technical evaluation.
Up time & penalty for delays in repair & maintenance: The firm will ensure uptime of 345 days in a year during warranty period & CMC period for both equipment and stabilizer (if supplied)
Whenever there is breakdown the firm will carry out the repair within 48 hours of receipt of such information (either by telephone or by any other means)
If there is delay beyond 48 hours then the firm will be penalized at the rate of 1% of the cost of product per day.
This financial penalty can be waived off on recommendation of the user dept. if the reasons of delay are genuine the same are recorded & endorsed by the concerned dept.
If the down time is exceeded in a year from 20 days then the warranty shall stand extended by double the no. of days machine was out of order
Information regarding merger/acquisition/takeover or any change in the production should be submitted at the time of tender by the principal firm. In such case it should be specified who will provide the after sale service, CMC, supply of spare parts etc. failing which the firm shall not be considered for technical evaluation.
Electrical: 230 volts 50 Hz, Single Phase
: Deleted

Elisa Reader & Washer	
SN	Technical Specification
A	**Technical Specification:**
1	**Filters with 10nm bandwidths**
2	**Wavelength range 400-800 nm**
3	Measuring range 0-4 Abs.
4	Measurement time-up to 30 Seconds (For 96 well micro plate).
5	Resolution- 0.001 Abs.
6	Light Source- tungsten - Halogen/ Deuterium lamp.
7	**Accuracy - +/-0.010**
8	Measurement time upto 30 Sec. (for 96 well microplate) Read methods End point, kinetic, spectral scanning and well scanning and well area scanning
9	Power supply -230 V AC +/- 10, 50Hz.
10	Self Check- System should perform self check before every measurement.
11	Sampling-96 well micro plate and 8/12 well micro strips.
12	Micro plate shaking facility with programmable shake.
13	Plate carrier to accommodate PVC and Polystyrene (flat, U and V bottom 96 well microplate).
14	Should have 8-12 measuring channel and 1 reference channel
15	Should work on 3 speed: low, Med, High with programmable time period of 0-99 s
B	**Data station:**
1	i5 3rd generation processor with licensed windows operating system, 1TB hard disk, 8GB RAM, DVD RW, 17" LCD colour monitor and Colour laser printer.
2	Software- facility for reading complete plate or even a single well.
3	Multiple blanking options.
4	Data Presentation in 4 Modes (absorbance, transmission, blank subtracted absorbance limit +/0/-report).
5	Quantitative analysis using linear and quadratic curve pointing calibration
6	Multi-pointing Calibration.
7	Software of qualitative kits.
8	Checking of Controls.
9	Calculation of cut- offs.
10	Final report in +/- format.
11	Storage facility for easy recall or processing of sample and data.
C	**Automated washer:**
1	Plate type (96 well).
2	Wash bottle capacity 2-4 liters.
3	Additional wash bottle capacity 2 liters.
4	Residual aspiration Volume< 2 ul for U/V shaped wells and <3ul for flat bottom wells
5	Result of the washing procedure should be intensified by wash cycle limited to the bottom area (bottom wash)
6	**Hard Ware specifications:**
a	Manifold 8 or 12 Channels.
b	Vaccum power – 1 integrated vacuum power.

c	Waste bottle 2 L.
d	User interface Flat with 5 diaphragm keys /or touch screen facility
e	2-4 x 20-26 characters LCD screen /Touch screen
D	**Software specification:**
1	Up to 75 wash programmable protocols.
2	Wash program cards 4-10 cycles and wash volumes of 50-1000 micro L
3	Wash mode – strip and plate mode.
4	Accepts flat or curved bottom.
5	Programmable Vertical and horizontal speeds and vertical and horizontal position of aspirating needle in relation with wells.
E	**Microplate Shaker:**
1	Speed: 50 -250rpm.
2	Time: up to 15 minutes.
3	Capacity- upto 6 microplates.
F	Deleted
	Mandatory calibration twice a year and servicing 4 times in a year for the duration of warranty.

Sl. No	Centrifuge & incubator for column agglutination technique by glass bead/Gel cassettes for immuno hematology
1	Detailed specification of the gel card centrifuge is as follows
2	**Purpose of Equipment:**
3	Immunohematologic Gel-microcolumn-Card or gel bead centrifuge to perform manual centrifugation step for Blood Grouping, Cross Matching, antibody screening or identification or phenotyping by coombs and enzyme phase by gel microcolumn technique to detect both IgG & IgM antibodies, and also potentially usable for Chd, Partial/weak D, Single Rare antigens.
4	Must be designed specifically for blood bank use. Commercial or modified commercial centrifuges for other purpose are not acceptable.
	Quality Standard:
5	Manufacturing should be compliant with ISO 13485, and ISO 9001:2008.
6	Deleted
7	Equipment must be certified for electrical safety specifications of IEC/TR 61010-3-020: "Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 3-020: Conformity verification report for IEC 61010-3-020:1992 Particular requirements for laboratory centrifuges"
	Capacity, Construction and Functioning
8	Centrifuge head should have minimum 6-12 slots to accommodate corresponding manufacturer's immunohematologic Gel/glass bead microcolumn cards
9	Aerodynamic compact construction with vibration free performance; Noise level should be less than 60dB.
	Lid:
10	The lid of the centrifuge should be transparent and should have auto-locking during spinning.
	Electrical characteristics:
11	Must be compatible with input voltage: 220/240V 50/60 Hz AC
12	Suitable UPS with one hour back up should be supplied with the system
13	Microprocessor controlled programming with LCD screen displaying RPM or RCF, time and other functions should be displayed real time.
	Additional requirements
14	All equipment should specify qualifications for design, installation, operation and performance.
15	Validation and calibration reports should have traceability to applicable national and international standards.
16	Complete with comprehensive set of spare parts, and a suitable capacity voltage stabilizer and Suitable UPS with maintenance free batteries for minimum one-hour back-up for each equipment should be supplied with the system.
17	Demonstration and continued comprehensive training for lab staff and support services till familiarity with the system.
18	Should provide electronic and hard copies of User Manual (English), Service manual (English) and Complete construction details with respect to material specification, thickness, finish etc.
19	Should provide Log book with instructions for daily, weekly, monthly and quarterly maintenance checklist. The job description of the hospital technician and company service engineer should be clearly spelt out.
20	Cards should have a V shaped bottom
	The following variety of cards should be available:
21	ABO- Impregnated
22	Complete range of reagents with catalogue. Proprietary article certificate for the consumables mandatory including period of validity or list of third party authorized suppliers of consumables for the equipment. Catalogue should include reagents for all the tests mentioned above.
23	List of 3 satisfactory end user details from licensed blood banks mandatory.
24	Neutral cards

25	Specific Antibody cards for phenotyping
26	[illegible] Deleted
27	Specification for cross matching gel cassettes/Glass beads cards
28	Should be based on column agglutination technique.
29	Cassettes / cards should have pre filled reagents for performing cross matching
30	Firm should also supply other reagents and chemicals to be used in performing
31	Cross matching and other tests
32	Same firm should also supply the suitable centrifuge and incubator to perform the test
33	Incubator for Gel Cassettes
34	Should maintain temperature at 37IC
35	Specifically designed for incubating cassettes / cards
36	Should have capacity to incubate 20 or more cassettes
37	Digital display of temperature
38	Electrical : 220 volts, 50 Hz
39	**Added Para: Installation & validation** is responsibility of the supplier
40	Annual calibration with quarterly servicing for the period of warranty.

Blood cell Counter 3 Part	
SN	**Technical Specification**
1	Should be a fully automated hematology analyzer providing 20 parameters including Hb, RBC, WBC, PCV, MCV, MCH, MCHC, Platelet count, RDW-SD, RDW-CV, lymphocyte, neutrophils, Mixed population, lymphe %, neutrophils %, Mixed %, MPV, PDW, P-LCR **(Optional)**, PCT
2	Linearity range: WBC - 1.0 - 99.9x 10^3 /ml RBC - 0.3 - 7.00x10^6 /µl
3	WBC clog **detection/warning** should be available
4	Should have monitoring & flagging function
5	The system should be capable of processing samples at a speed of 60- 70 samples/hour.
6	The system should be Sample rotor valve (SRV) or Sample Liquid valve (SLV) based or equivalent technology for precise sampling.
7	The system should have large LCD display to have a review of all the results along with the three histograms of WBC, RBC and PLT on the screen.
8	The system should have datastorage of **atleast 1000 with histograms with a facility to transfer the data to an external storage device**
9	The system should have autoprobe wiper to clean the sample probe automatically after sample aspiration.
10	The system should use non-cyanide based reagent for Hb estimation.
11	The system should have inbuilt printer to print the results with or without histogram and option for external printer
12	The system should use the proven and approved **"volumetric Metering/equivalent technology"** system of cell counting, for WBC's, RBC's & PLT's for high precision of the results and stability of the calibration.
13	The system should have automatic floating thresholds for the correct separation of RBC's and PLT's during overlap in cases of Microcytosis / large platelet.
14	System should not require any daily maintenance except daily shutdown.
15	The system should automatically give an alarm to the operator for doing the maintenance.

16	The system should use high intensity LED for Hb estimation and not the lamp.		
17	Deleted		
18	All reagents required should be available locally from the Company or its authorized distributor. Cost of consumables shall be considered in financial comparison. Two vials each of 3 level quality controls (ie total 6 vials) should be provided for initial training and validation of instrument. Proprietry article certificate for the consumables mandatory including period of validity or list of third party authorized suppliers of consumables for the equipment.		
19	One roller mixer should be provided with the machine		
20	Should have barcode reader		
21	Firm will have to supply the UPS with 30 min back up along with the equipment free of cost. UPS & UPS batteries should be covered under both warranty & CMC		
22	Should be compatible with HIS/LIS		
23	The price for the reagents should be quoted for 5 years and it will be freezed and should be quoted separately		
	Annual calibration with quarterly servicing for the period of warranty.		-
	Servicing within 48 hours of breakdown with local service engineer.		
	BOQ	QTY	UOM
1	System as specified	1	Nos
2	UPS	1	Nos
	Added para:		
	Deleted		

Sl. No	Refrigerated Blood Component Transport Box
1	Mobile refrigerated transportation box should be able to transport packet red cells, whole blood, platelets, plasma at the required specific temperatures.
2	Should be robust, light weight, portable mobile refrigerated transport box made up of rotationally moulded polyurethane.
3	Temperature range adjustable from -20 deg C to +22 deg C
4	Capacity to hold 25-30 blood bags of 450ml
5	Should work on AC & DC power with the provision of attachment to vehicle battery.
6	Should have digital temperature display of the internal temperature with functional alarm systems to indicate variations in the set temperature.
7	Should be CFC free refrigerant.
8	Deleted

Apheresis Machine			
SN	Technical Specification		
1	Continuous Flow Blood Cell Separator.		
2	Single/Dual Needle operation. (Optional accessory required for Single Needle)		
3	An undertaking by the manufacturer mandatory regarding the product model being most recent globally.		
a	Leukoreduced Plasma Collection		
b	Therapeutic Plasma Exchange.		
c	Single or doubleRBC collection and/or RBC Exchange		
d	Peripheral Blood Stem Cell Collections.		
e	Granulocyte Collection.		
f	Leukoreduced platelet collection or plateletapheresis		
g	Yeild estimator with optical sensor at PRP line for online monitoring of component collection against the desired yeild with LCD monitor for the monitoring of desired parameters.		
4	Automatic Pump Loading & Priming of disposables sets.		
5	Automated Self test to ensure maximum Donor Safety.		
6	Built in Leukoreduction (<5 x 106) for Platelets & Plasma using elutriation (eg LRS chamber) or other patented technology which is NOT based on leukoreduction filter.		
7	Automatic Leukoreduction validation of platelets and plasma at the end of procedure.		
8	Adjustable product concentration.		
9	Separate Anticoagulation pump with custom programming adjustability		
10	Safety check to prevent Platelets count dropping below safety level for Donor safety.		
11	Configurable maximum volume depletion levels either by weight or percentage of Total Blood Volume.		
12	Extracorporeal volume 150-250ml		
13	Inlet & return flow rate upto 100ml/minute		
14	Built in Access & Return Pressure sensor.		
15	Built in air detectors to prevent air embolism.		

16	Built in ACD Detector.
17	Built in contamination monitor for monitoring & preventing RBC contaminations in platelet collection and plasma exchange.
18	Audio visual alarms.
19	Periodic Instrument Calibration certificate for the various parameters and QC of the products should be provided/maintained by the vendor
20	**Additional accessories :**
a	30 disposable platelet pheresis kits should be provided with the system
b	Deleted
c	Suitable online UPS for min 1 hr backup with maintenance free batteries mandatory. Cost to be included in the cost of the equipment.
d	All consumables required for installation & standardisation should be supplied
21	European CE with 4 digit notified body no. or US-FDA or BIS approval and necessary approval from the licensing authority in India for the apheresis kit
22	Onsite training should be provided by the technical expert to the users as per requirement
23	The units shall be capable of being stored continuously in ambient temperature of 0 - 50C and relative humidity of 15-90%.
24	The units shall be capable of being operating continuously in ambient temperature of 10 - 40C and relative humidity of 15-90%.
25	**The price for 100 kits will be taken for price comparison and the price will be frozen for 5 years.**

	BOQ	QTY.	UOM
1	System as specified	1	Nos
2	Disposable platelet pheresis kits	30	Nos

4	UPS	1	Nos
	Added para in BOQ		
	Price for 100 kits		

Sl NO.	Micro plate Table Top Centrifuge with Swing out Rotor
1	Speed: 300-3000 rpm with increment of 10 rpm
2	Max RCF: 2000 x g or more
3	Automatic Rotor Recognition and imbalance detection.
4	Manufacturer should provide compatible set of microplates with specifications of the same.
5	Timer: 0 to 60 mins. continuous operation
6	Drive system: Brush less induction drive
7	Noise level at max speed should be less than 60db
8	System should have safety features like lid lock and interlock
9	System should have microprocessor controlled pre-selection and display of speed and time.
10	Deleted
11	The centrifuge should be provided with the following accessories
	Swing out rotor:
12	Speed: 300-4000 rpm or more
13	RCF: 2000x g or more
14	Capacity: Should be able to centrifuge 2 Microplate of 96 wells
15	Rotor head should be available with the firm for immediate replacement
16	Price of the spares should be quoted
17	Firm will have to supply the stabilizer with the equipment if required.
18	Firm will have to supply suitable table for keeping the centrifuge, made of powder coated stainless steel of good stability
19	Firm will have to supply the stabilizer if required along with the equipment free of cost
20	Original literature of equipment should be submitted.
21	Firm should also provide the relevant temperature calibration certificate for the equipment from any NABL accredited Lab.
22	User"s list should be attached with satisfactory report for the last three years from three users with contact details.
23	Demonstration of performance of equipment is compulsory in nearby area failing to which will be disqualification.
24	Up time & penalty for delays in repair & maintenance: the firm will ensure uptime of 345 days in a year during warranty period & CMC period of both, equipment as well as stabilizer (if supplied).
25	Whenever there is breakdown the firm will carry out the repair within 48 hours of receipt of such information (either by telephone or by any other means)
26	If there is delay beyond 48 hours then the firm will be penalized at the rate of 1% of the cost of product per day.
27	This financial penalty can be waived off on recommendation of the user dept. if the reasons of delay are genuine the same are recorded & endorsed by the concerned dept.

28	If the down time is exceeded in a year from 20 days then the warranty shall stand extended by double the number of days machine was out of order.
29	Information regarding merger/acquisition/takeover or any change in the production should be submitted at the time of tender by the principal firm. In such case it should be specified who will provide the after sale service, CMC, supply of spare parts etc. failing which the firm shall not be considered for technical evaluation.
30	Warranty: 5 years warranty without any exclusion from the date of installation for equipment and stabilizer (if supplied) + 5 years comprehensive maintenance contract without any exclusion for both equipment and stabilizer (if supplied). The cost of warranty and CMC will be included in total cost of the equipment for financial comparison
31	Electrical: The equipment should be able to run on the existing electrical provision
32	Annual calibration with quarterly servicing for the period of warranty.

SI NO.	Recumbent Cycle Exerciser
	Cycle should have following program
	Hill,Interval, Manual/Track, Random , Weight Loss HRC, Quick Start and should be with 2 to 4 user IDs.
	Cycle should have Infrared remote control, Lumbar pouch,
	Cycle should have Adjustable seat pad, Adjustable seat back
	Cycle should have Feed back display for Speed, watts, calories, RPM , Distance, Time,Resistance level, HR and Trageted HR.
	Cycle should have LED display and should be adjustable with out pedaling
	Cycle should be capable for Max user weightup to 400 lbs
	Cycle should have Mini 15- 20 electro magnetic resistance level .
	Cycle should have Self-generating power supply with 2 minute backup
	Cycle should supply with hot and cold pack to be place in lumber pouch
	Deleted

Sl NO.	Tilt Table (Motorised)
1)	Table should have electric height adjustment control via remote from 46 to 84 cm
2)	It should have electric tilting control via remote.
3)	Both control can be adjust by two function hand remote.
4)	Table should tilt full 90 degree
5)	tilt tables motor should have 12- 14 mm/sec speed at unloaded and 6 -7 mm/sec speed at full load.
6)	It should have Battery Back-Up to bring the patient down in case of power failure
7)	It should have facility of lowers to wheelchair height
8)	It should have good quality large braking castors
9)	It should indicate tilt angle.
10)	Table should have minimum 200 kg weight barring capacity of patient.
11)	Table top should have minimum 61cm wide x 198cm long x 80cm high
12)	Table should have minimum Three fixation belts:- Thoracic, Pelvic, Knee
13)	Table should have work table attachment.
14)	Deleted

Sl. No	Operation Theater Instruments **(PMR Surgical Instruments)**
General Surgical Instruments	
	(For Deformity Correction, pressure ulcer surgeries & Rehabilitation Surgeries)
1	Sponge Holder-4
2	Towel Clamp (Small)-1 dozen
3	Towel Clamp (Large - artery forceps type)-1 dozen
4	Bipolar cautery-1
5	Monopolar cautery-1
6	Suction Apparatus-1
7	BP Handle - for blade number 24 (Big)-3
8	BP Handle for blade number 15 (small)-3
9	Straight Artery Forceps (6 inch)-1 dozen
10	Straight Artery Forceps(8 inch)-6
11	Straight Artery Forceps (10inch)-6
12	Mosquito straight Artery Forceps-1 dozen
13	Curved Artery Forceps (6 inch)-1 dozen
14	Curved Artery Forceps (8 inch)-6
15	Curved Artery Forceps (10inch)-6
16	Mosquito Curved Artery Forceps-1 dozen
17	Allis Tissue Forceps (6 inch)-1 dozen
18	Allis Tissue Forceps (8 inch)-1 dozen
19	Allis Tissue Forceps (10 inch)-1 dozen
20	Cockers Forceps (6 Inch)-6
21	Cockers Forceps(8 inch)-6
22	Thumb Forceps toothed (8 inch)-4
23	Thumb Forceps Toothe (6 inch)-4
24	Thumb Forceps Plane (6 inch)-4
25	Thumb Forceps Plane (4 inch) Twizzer-4
26	Needle Holder (8 Inch)-4
27	Needle Holder (6 Inch)-6
28	Needle Holder (10 Inch)-6
29	Scissors (10 Inch)-4
30	Scissors (8 inch) (Stitch Cutting)-4
31	Dissecting Scissor Straight (8 inch)-4
32	Dissecting Scissor curved (8 inch)-4
33	Dissecting Scissor Straight (6 inch)-4
34	Dissecting Scissor curved (6 inch)-4
35	Pointed small scissor straight-4
36	Pointed small scissor curved-4
37	Lahey's Forcep (Medium) 8 inch-2
38	Lahey's Forceps (Medium) 6 inch-2
39	Right Angle Retractor (3 Inch)-2
40	Right Angle Retractor (2 Inch)-2
41	Right Angle Retractor 1.5 inch-2
42	Right Angle Retractor 1 inch-2

43	Langenham's Right angle Retractor (Medium)-2
44	Langenham's Right angle Retractor (small)-2
45	Small 3 Plunge /2 plunge Retractor-2 Pairs
46	Bone Hammer (Mallet) (Large)-2
47	Bone Hammer (Mallet) (Small)-2
48	Bone Lever - Large - 2
49	Bone Lever - (Medium)-2
50	Bone Lever- (Small)-2
51	Diamond (Watson Jone) Bone lever (Medium)-2
52	Diamond Bone (Watson Jone) Lever Small-2
53	Bone Lever Serrated curved - Medium-2
54	Bone Lever serrated - small-2
55	Perlosteum Elevator (Large)-2
56	Periosteum Elevator (Small)-2
57	Bone Holding Forceps (Large)-2
58	Bone Holding Forceps (Medium)-2
59	Bone Holding Forceps (Small)-2
60	T Handle-2
61	Electric Drill for Bone-1
62	Battery operated bone drill-1
63	Manual Stainless steel Bone drill-2
64	Electronic digital Torniquet with cuff set-1
65	Pneumatic Torniquet with cuff set-1
Cutting Instruments	
66	Straight Osteotome- 25 MM-1
67	Straight Osteotome- 20 MM-1
68	Straight Osteotome- 15MM-1
69	Straight Osteotome- 10 MM-1
70	Straight Osteotome- 5 MM-1
71	Curved Osteotome- 25 mm-1
72	Curved Osteotome- 20 mm-1
73	Curved Osteotome- 15 mm-1
74	Curved Osteotome- 10 mm-1
75	Curved Osteotome- 05 mm-1
76	Straight Gauge- 15mm-1
77	Straight Gauge- 10mm-1
78	Straight Gauge- 05mm-1
79	Curved Gauge -15 mm-1
80	Curved Gauge-10mm-1
81	Curved Gauge - 5 mm-1
82	Straight Bone nibbler Double Cutting Big-1
83	Straight Bone nibbler Double Cutting Small-1
84	Curved Bone nibbler Double Cutting Big-1
85	Curved Bone nibbler Double Cutting Small-1
86	Bone Cutter Large-1
87	Bone Cutter Small-1
88	Bone Chisel (15mm)-1
89	Bone Chisel (10mm)-1

90	Bone Chisel (5mm)-1
91	Wriggle and Saw Handle-2 pair
92	Wriggle and Saw Wire-1 Dozen
93	Bone file-2
94	K wire extractor-1
95	Small T handle for scanz pin holder-1
96	Stainless steel wire cutter cum bender and plier (Large)-1
97	Stainless steel wire cutter cum bender and plier (Small)-1
98	Plate Bender-1 Set
Plaster Cutting Set	
99	Electric Plastic cutter-1
100	Manual Plaster Cutter-2
101	Plaster Spreader-2
102	Plaster cutting scissor-2
Ilizarov Set of Instrument	
103	Heavy Duty Pliar-1
104	Ilizarov wire cutter-1
105	Rench for sixe no 9 and 10-nut/bolt-6
106	Box Rench for size 10-nut/bolt-2
107	Wire rensioner-2
108	Dynamometer for giving wire tension-2
109	Screw driver 4.5mm-2
110	Screw Driver 3.5 mm-2
111	Bone tap 4.5 mm-2
112	Bone tap 3.5 mm-2
113	Drill Sleeve - 4.5 mm and 3.5mm-2
Tendon Transfer Instruments	
114	Tendon Tunneller-Large-1
115	Tendon Tunneller- Medium-1
116	Tendon Tunneller- Small-1
117	Tendon Passer Straight Large-1
118	Tendon Passer Straight Medium-1
119	Tendon Passer Straight - Small-1
120	Skin Grafting knife (Humpy)- 6 Inch Blade Holder-1
121	Skin Grafting knife - 2 Inch Blade Holder-1
122	Bone Curetter Large-1
123	Bone Curetter Small-1
124	Skin Hooks - Single and double prong-2
125	Self retaining retractor (Medium)-1
126	Self Retaining retractor (Small)-1
127	Bone Awl straight-1
128	Bone Awl curve-1

Multiparameter Monitor- 5 Para	
SN	Technical Specification
1	Description of Function
1.1	It should provide monitors of ECG, NIBP, SpO2, Temperature, Respiration
2	Operational Requirements
2.1	Comprised of bedside monitors
2.2	Capability of storage of patient data and printing of patient reports.
2.3	Demonstration of the equipment to be given if required.
3	Technical Specifications
3.1	Minimum 10 inches or more multicoloured TFT display.
3.2	Should have facility to monitor and display - ECG, NIBP, SpO2 (Nellcor/Masimo).
3.3	Digital and 4 waveforms/traces display of all parameters. Specification include –
3.4	Multichannel ST segment analysis.
3.5	Automatic arrhythmia detection & alarm for standard arrhythemia
3.6	Should be suitable for Adult to Neonate usage
3.7	Should be able to measure B.P in automatic, manual and stat mode.
3.8	Motion tolerant NIBP with cuff overpressure protection
3.9	Should be capable of measuring oxygen Saturation even in case of motion artifact.
3.10	Should have audio – visual alarms for all parameters and should display alphanumeric
1	Trend of at least 48 hours.
3.12	Should have automatic and manual alarm setting for all parameters
3.13	Should have inbuilt 2 Ch thermal recorder with selectable recording speed of 25 & 50
3.14	Battery backup of at least 2 hours, when fully charged.
4	System configuration Accessories, spares and consumables
4.1	Accessory as per BOQ
4.2	Necessary wall mounting solution/ mounting for monitors
5	Environmental factors
5.1	The unit shall be capable of operating continuously in ambient temperature of 0 -40°
5.2	The unit shall be capable of being stored continuously in ambient temperature of 20
5.3	Deleted
6	Power Supply
6.1	Power input to be 220-240VAC, 50Hz fitted with Indian plug
7	Standard Safety And Training
7.1	Deleted
7.2	Manufacturer/ Supplier should have ISO certification for quality standards.
4	Should have local service facility the service provider should have the necessary
8	Documentation
8.1	User Manual in English
8.2	Service manual in English
8.3	Compliance Report to be submitted in a tabulated and point wise manner clearly
8.4	List of important spare parts and accessories with their part number and costing and
8.5	Log book with instruction for daily, weekly, monthly and quarterly maintenance

	BOQ	Qty	UOM
1	Monitor as per tender specification	1	No
2	Wall Mount	1	No
3	2 Channel recorder	1	No
4	5 Leads ECG cable with electrodes	2	Nos
5	Reusable Spo2 probe adult	2	Nos
6	Reusable SpO2 probe pediatric	2	No
7	Reusable SpO2 probe neonatal	2	No
8	NIBP cuff for Adult ,child and neonate	5	No each
9	NIBP Hose	2	No
10	Temperature probe nasopharyngeal (Adult & Paediatric)	1	No each

Syringe Infusion Pump			
SN	Technical Specification		
1	The syringe pump should be programmable, user friendly, safe to use and should have battery backup and comprehensive alarm system.		
2	Must Work on commonly available standard 5ml/10ml/20ml/50ml/60 ml Syringes with accuracy of minimum of +/- 2% or better, with automatic syringe size recognition.		
3	5 Deleted 0		
4	Flow rate programmable from 0.1 to 1000 ml/hr or more in steps of 0.1 ml/hr with user selectable flow set rate option. SAVE last infusion rate even when the AC power is switched OFF.		
5	**Bolus rate should be programmable to 40 to 1000 ml/hr or more with infused volume display and one key press bolus. Reminder audio after every 1 ml delivered/programmable bolus should be available**		
6	Display of Drug directory of more than 50 drugs, customized and adjustable.		
7	Key board locking system for patient safety		
8	Keep Vein Open (KVO) must be available at 0.1 ml or set rate		
9	Selectable Occlusion pressure trigger levels selectable from 300/500/900 mmHg, or atleast 3 selectable levels		
10	**Automatic detection of syringe size & proper fixing. Must provide alarm for wrong loading of syringe such as disengaged plunger, unsecured barrel etc.**		
11	**Manual / automatic pusher**		
12	Anti bolus system to reduce pressure on sudden release of occlusion.		
13	Should have comprehensive ALARM package including: Occlusion limit exceed alarm, Near end		
14	**Rechargeable Battery having at least 4hours backup for about 5ml/hr flow rate with 50ml syringes. Larger battery life and indication of residual life will be preferred.**		
15	Mounting device/ Docking Station for at least four pumps as per requirement so as to enable to power up to 4 pumps with one power cord when mounted on IV pole (Price to be quoted separately)		
16	The unit shall be capable of stored and operating continuously in ambient temperature of 10 - 50deg C and relative humidity of 15-90%		
17	Power input to be 220-240VAC, 50Hz.		
18	Log book with instructions for daily, weekly, monthly and quarterly maintenance checklist. The job description of the hospital technician and company service engineer should be clearly spelt out.		
19	User Manual and service manual in English.		
20	List of important spare parts and accessories with their part number and costing.		
	Added para:		
	Clamp to be supplied with each machine		
	BOQ	Qty	UOM
1	Syringe Pump as per specification	1	No
2	Docking station	1	No

Sl NO.	Electro Surgical Unit (ESU)
	1 Description of Function
	1.1 ESUs are used for surgical cutting and for controlling bleeding by causing coagulation (hemostasis) at the surgical site. They deliver high-frequency electrical current through an active electrode tip, causing desiccation, vaporization, or charring by resistive heating in the target tissue
	2 Operational Requirements
	2.1 Microprocessor/Microcontroller technology
	3 Technical Specifications
	3.1 Should provide monopolar output for cut, coagulation (fulguration & spray) & blend
	3.2 Should have bipolar cut and coagulation in multiple levels with automatic bipolar coagulation
	3.3 Activation by foot switch and hand switch
	3.4 Activation of bipolar by foot switch and automatic start/stop system
	3.5 Auto diagnosis on switching on and during working to continuously monitor all parameters
	3.6 Automatic stoppage of output in case of malfunction with acoustic and visual signal with display of error code
	3.7 Output powers adjustable automatically or manually from the control panel
	3.8 Programmable memory for output settings
	3.9 The unit should have minimum of 2 monopolar output & 1 bipolar output and should have simultaneous access to 2 monopolar units by more than one user.
	3.10 Should be usable with laparoscopic monopolar and bipolar instruments, for which programmes and accessories must be available
	3.11 System for neutral plate safety by continuous monitoring of contact quality and connection
	3.12 System for monitoring and control of leakage current
	3.13 Frequency leakage on the patient should be less than 10 micro Amp.
	4 System Configuration Accessories, spares and consumables
	4.1 System as specified
	4.2 The accessories should include
	(a) trolley,
	(b) mains cable with power plug for standard Indian sockets
	(c) foot switches for different outputs
	d. reusable (2 Nos.) and single use (50 Nos.) neutral electrode for adults and children along with cable for neutral electrode and fixation device wherever required
	e .Reusable & sterilizable (5 Nos.) and disposable electrode handle with finger switch (50 Nos.) with cable
	f.Set of electrodes (flat tip short, flat tip long & pin point -5 Nos. each) with electrode container with holder
	g.Tip cleaner – 5 Nos.
	h .bipolar forceps with cable (straight & bayonet) – 2 each
	i. Cable for connecting to standard monopolar & bipolar laparoscopic instruments – 2 Nos.

	j DELETED
	All accessories should be same principal equipment manufacturer
	4.3 The system should be capable of accepting standard accessories of major international brands, which should be specified and for which suitable adaptor, if required, is to be quoted
	4.4 The codes and rates of all possible individual accessories should be quoted separately with clear mention of period of validity of rates
	5 Environmental Factors
	5.1 The unit shall be capable of being stored continuously in ambient temperature of 0 - 50 deg C and relative humidity of 15-90%
	5.2 The unit shall be capable of operating continuously in ambient temperature of 10 - 40deg C and relative humidity of 15-90%
	6 Power Supply
	6.1 Power input to be 220-240VAC, 50Hz fitted with indian power plug
	DELETED
	7 Standards & Safety
	7.1 Deleted
	7.2 Manufacturer and Supplier should have ISO certification for quality standards
	7.3 IEC 60101-1 Medical Electrical Equipment, General Requirements for safety
	7.4 Shall meet internationally recognised standard for Electro Magnetic Compatibility (EMC) for electromedical equipment: IEC-60601-1-2 (latest edition Or Equivalent BIS) or should comply with 89/366/EEC; EMC-directive as amended
	7.5 Certified to be compliant with IEC 60601-2-2 Medical Electrical Equipment Part 2-2: Particular requirements for the safety of High Frequency Surgical Equipments: latest edition
	8 Training
	8.1 Comprehensive training for staff of user department and support services till familiarity with the system.
	9 Warranty & Service
	9.1 Comprehensive warranty for 5 years and 5 years Comprehensive Maintenance Service after warranty. The cost of CMC must be quoted in the price bid.
	9.2 Percentage of uptime guarantee of the equipment during warranty and CMC period for which commitment is to be given must be specified with acceptance of applicable penalty clauses in case of failure to do so.
	9.3 After sales service must be provided in the city of installation. In situations requiring service/repair of the unit outside the city of installation, the expenditure on account of this will have to be borne by the supplier
	10 Documentation
	10.1 Product Literature in original along with that of accessories and indigenous components if any. Photocopies/computer generated copies are not acceptable
	10.2 Statement of compliance with tender specifications with clear and unambiguous links to relevant portions of product literature/authentic document, which should be highlighted. Alternatives provided for noncompliant specifications with justification must be described in detail with supporting literature.
	10.3 Certificate of compliance with standards and approvals stated above

	10.4 Certificate of manufacturer/principal regarding authorisation of service facility provided by the supplier
	10.5 List of Equipment available in the Service Centre for providing calibration and routine Preventive Maintenance Support, as per manufacturer documentation in service/technical manual
	10.6 List of important spare parts and accessories, which are required for maintenance and repair, with their part number and costing
	10.7 Terms and conditions of warranty and CMC including schedules of visit by service personnel with check list of services to be carried out
	10.8 Commitment for supply of log book with check list for daily, weekly, monthly and quarterly preventive maintenance with contact details of service personnel along with the equipment. The job description of the hospital technician and company service engineer should be clearly spelt out in the log book.
	10.9 List of users of quoted model with performance certificate from major hospitals
	Added Para: **Para: 3.14:** **a) Monopolar cut: 300-400 Watt** **b) Monopolar coagulation: 120W min.** **c) Bipolar coagulation: 100W** **d) Bipolar cut: 150W or more.**

Sl.No	(ESU) WITH VESSEL SEALING SYSTEM		
	Should have following features and Accessories:		
1	**Technical Specification**		
1.1	ESUs are used for surgical cutting and for controlling bleeding by causing coagulation (hemostasis) at the surgical site. They deliver high-frequency electrical current through an active electrode tip, causing desiccation, vaporization, or charring by resistive heating in the target tissue.		
2	**Operational Requirements**		
2.1	Microprocessor/Microcontroller technology		
3	**Technical Specifications**		
3.1	Integrated touch screen/**touch button** system with **300-400W** output generator for monopolar cut,**100 - 120Watt or more** for monopolar coagulation, bipolar cut **90 Watt or more** and Bipolar coagulation **90Watt or more** and vessel sealing system for open and laparoscopic surgery with under water cutting current.		
3.2	Should provide monopolar output for cut, coagulation (fulguration & spray) & blend in multiple levels		
3.3	Should have bipolar cut and coagulation in multiple levels with automatic bipolar coagulation.		
3.4	Activation by foot switch and hand switch for all the modes.		
3.5	Activation of bipolar by foot switch		
3.6	Capable of sealing vessels of **minimum 7 mm diameter**		
3.7	Auto diagnosis on switching on and during working to continuously monitor all parameters		
3.8	Automatic stoppage of output in case of malfunction with acoustic and visual signal with display of error code.		
3.9	Output powers adjustable automatically or manually from the control panel.		
3.10	Programmable memory for output settings/**recall last setting**		
3.12	System for neutral plate safety by continuous monitoring of contact quality and connection		
3.13	System for monitoring and control of leakage current		
3.14	Frequency Leakage on the patient should be less than 10 micro Amp.		
4	**System Configuration Accessories, spares and consumables**		
4.1	System as specified		
4.2	The accessories should include: **All the Accessories should be mentioned in BOQ and rate of each accessories should be quoted seperately which should be valid for the entire warranty period.**		
(a)	**Trolley from OEM, qty 01 no**		
(b)	Mains cable with power plug for standard Indian sockets, qty 01		
(c)	foot switches for different outputs, qty 01		

(d)	Reusable Silicon neutral electrode for adults and children along, with cable and fixation device qty 02 each/**Disposable - 100 nos each**		
(e)	Sterilisable re usable electrode handle with finger switch with cable for electrode handle, qty **04 nos/Disposable - 200 nos**		
(f)	set of electrodes (4 different types) with electrode container with holder, qty 5 of each type		
(g)	tip cleaner, minimum 50 nos		
(h)	bipolar forceps (non stick) with cable, straight (small and large), and Bayonet (small and large), qty 04 of each type		
(i)	**Reusable cable** for connecting to standard mono polar and bipolar laparoscopic instruments, qty 04		
(j)	Reusable dedicated instruments for open for vessel sealing use (Life of minimum 50 cses)., qty 02 of each/**Disposable - 20 nos each**		
4.3	The codes and rates of all possible individual accessories should be quoted separately with clear mention of period of validity of rates		
5	**Environmental factors**		
5.1	The unit shall be capable of being stored continuously in ambient temperature of 0 -50 deg C and relative humidity of 15-90%		
5.2	The unit shall be capable of operating continuously in ambient temperature of 10 -40deg C and relative humidity of 15-90%		
6	**Power Supply**		
6.1	Power input to be 220-240VAC, 50Hz fitted with indian plug		
6.2	**Deleted**		
7	**Standards & Safety**		
7.1	Deleted		
7.2	Manufacturer should have EN ISO certification for quality standards.		
7.3	Complete system and all accessories mentioned should be from same make.		
8	**Training**		
8.1	Comprehensive training for staff of user department and support services till familiarity with the system.		
9	**Service**		
9.1	Percentage of uptime guarantee of the equipment during warranty and CMC period for which commitment is to be given must be specified with acceptance of applicable penalty clauses in case of failure to do so.		
9.2	After sales service must be provided in the city of installation. In situations requiring service/repair of the unit outside the city of installation, the expenditure on account of this will have to be borne by the supplier		

10	**Documentation**		
10.1	Product Literature in original along with that of accessories and indigenous components if any. Photocopies/computer generated copies are not acceptable		
10.2	Statement of compliance with tender specifications with clear and unambiguous links to relevant portions of product literature/authentic document, which should be highlighted. Alternatives provided for noncompliant specifications with justification must be described in detail with supporting literature.		
10.3	Certificate of compliance with standards and approvals stated above		
10.4	Certificate of manufacturer/principal regarding authorization of service facility provided by the supplier		
	BOQ	**Qty**	**UOM**
1	System as specified - 1 no	1	Nos
2	OEM trolley - 01 nos	1	Nos
3	Mains cable with power plug for standard Indian sockets - 01 nos	1	Nos
4	Foot switches for different outputs - 1 nos	1	Nos
5	Reusable Silicon neutral electrode for adults and children along, with cable and fixation device	1	Nos each
	OR Disposable	100	Nos each
6	Sterilisable re usable electrode handle with finger switch with cable for electrode handle - 02 nos/Disposable - 200 nos	2	Nos
	OR Disposable	200	Nos
7	set of electrodes (4 different types) with electrode container with holder	5	Nos each
8	Tip cleaner	50	Nos
9	Bipolar forceps (non stick) with cable, straight (small and large), and Bayonet (small and large)	2	Nos each
10	Reusable cable for connecting to standard mono polar and bipolar laparoscopic instruments	2	Nos
11	Resuable dedicated instruments for open and laparoscopic for vessel sealing use (Life of minimum 50 cases)	2	Nos each
	OR Disposable	20	Nos each

Suction Machine	
SN	Technical Specification
1	**Technical Specifications**
1.1	Should be noiseless & should have fast vacuum build up
1.2	**Should have max vacuum of 650mm Hg or more**
1.3	**Suction capacity should be 50-60L/min & twin bottle capacity of 3L each**
1.4	Should have mechanical overflow protection system
1.5	Should be supplied with all necessary accessories for the complete system
1.6	**Should selected second jar automatically or manually**
1.7	Max noise level should not be 50 db
1.8	Should have 4 castors with 2 of them have breake
1.9	Oil free and maintenance free vacuum pump
2	**Power Supply**
2.1	Power input to be 220-240VAC, 50Hz
3	**Documentation**
3.1	User/Technical/Maintenance manuals to be supplied
3.2	Certificate of calibration and inspection from factory.
3.3	List of important spare parts and accessories with their part number and costing.

OT Table Electro Hydraulic	
Sl. No	Technical Specification
	Multipurpose electro hydraulic with **manual/electric override** mobile Table with divided leg section suitable for all major surgical procedures (surgery, OBG, Neuro, Ortho and Endoscopy), complete with 8cm mattress and corded handset
A	**General operating table features:**
1	Full-length radio-translucent top.
2	4 or 5 sections tabletop, which should be made of a special scratch resistant, hardwearing and easy to clean material. Base column cover to be made of 100% stainless steel alloy and stainless steel.
3	Removable head and leg sections to suit different applications.
4	100% Kidney Break position should be obtained without moving the patient, through remote Control by using extension/break function.
5	Battery powered, with facility for connection to mains electricity for immediate use. Battery Exhaustion protection and low battery warning via an audible „beep"/display indicator should be available.
6	Table should not have a thread/sharp edge for ensuring proper cleaning and user safety.
7	Mattress should be of high quality that spans tabletop break for improved patient support. Its depth
8	The robust handset should offer controls for Trend, /Reverse Trend, Lateral Tilt,Flexion/ Extension, horizontal sliding and Height functions. One button auto levelling should be available
9	Brakes, 4nos Wheels
10	**Table should have a narrow base allowing optimum access of c arm and greater stability**
11	Table should have offset slim-line column, with S.S. inverted telescopic covers, for superior imaging and access.
12	**It should have a stable construction with lockabe castors via a central foot pedal/ Hand control**
13	The table top should not be fitted with transverse members casting shadows on the X-ray images except for the release brackets for adjustment on either side.
14	The Table should be operated by the following operating elements: corded hand control, Manual override panel with manual override facility or electrical override panel should be available in case of power failure.
B	**Electrical specification:**
1	**Special-design, maintenance-free rechargeable batteries with capacity for about a week's or more than 50 positions use in the operating room .**
2	Recharging of the batteries and supply of the operating table by means of a mains cord
3	Nominal mains voltage (selectable) 220/230-240V AC via mains cord with inbuilt stabilizer
C	**Technical Data:**
1	Length : min 1850 mm
2	Width : min 450 mm
3	Minimum height (without mattress) : 430 mm -550mm
4	Maximum height (without mattress): Minimum of 1000 mm or more
5	**Maximum lateral tilt : 15 deg. (either sides)**
6	Trendelenburg: atleast 25deg
7	Reverse Trendelenburg : atleast 25deg
8	**Head section adjustment : +/-45 deg**
9	Leg section adjustment: +10 deg; to -90 deg
10	Break (extension) position : 200-220 deg

11	Break (flexion) position : upto 110 deg
12	Horizontal sliding: 200 mm or more
13	Back section adjustment: -30 deg to +80 deg
14	Maximum patient weight : 250 kg or more
D	**Accessories**
1	Arm board - 2
2	Body strap- 3
3	Anesthesia screen with clamps- 2
4	Side supports with clamps – 2
5	Clamp, rotary- 4 pc
6	Clamp, circular - 4 pc
7	Accessories stand, mobile on castors- 1 pc
8	Arm support, perplex -2 pc
9	Clamp for locking X Ray cassette -1
10	**Accessories for operating in prone - a radioluscent Wilson frame, gel pad for head, chest & feet - 1 each**
11	**3 pin skull clamp with Adult & Pediatric reusable pins (2 sets each) and horse shoes for adult & pediatric sizes with table attachement**
12	**Cross bar with clamps for sitting position - 1 set**
13	Deleted
E	1 Deleted [illegible]
F	For Electrical IEC 60101-1, medical/electrical equipment for safety, IEC 60601-2-46 for safety of OT tables and IEC 60601-1-2 for Electromagnetic compatibility

Sl No	BOQ	Qty	UOM
1	OT Table as specified	1	Nos
2	Arm board - 2	2	Nos
3	Body strap- 3	3	Nos
4	Anesthesia screen with clamps- 2	2	Nos
5	Side supports with clamps – 2	2	Nos
6	Clamp, rotary- 4 pc	4	Nos
7	Clamp, circular - 4 pc	4	Nos
8	Accessories stand, mobile on castors- 1 pc	1	Nos
9	Arm support, perplex -2 pc	2	Nos
10	Clamp for locking X Ray cassette -1	1	Nos
11	**Accessories for operating in prone - a radioluscent Wilson frame, gel pad for head, chest & feet - 1 each**	1	Set
12	**3 pin skull clamp with Adult & Pediatric reusable pins (2 sets each) and horse shoes for adult & pediatric sizes with table attachement (1 each)**	1	Set
13	**Cross bar with clamps for sitting position - 1 set**	1	set

Sl NO.	Operation Table: Hydraulic
	1 Description of Function
	1.1 Hydraulic operating Tables are simple tables for performing surgical procedures and they work without electrical power.
	2 Operational Requirements
	2.1 OT Table is required for general surgery and should have X-Ray translucent tops.
	3 Technical Specifications
	3.1 a. Four/five section table top with divided foot section
	b. Table top should permit x-ray penetration and fluoroscopy
	c. All table positioning, i.e., height, back section, lateral tilt, trendelenburg, and anti-trendelenburg, except foot and head section should be operated hydraulically
	d. Should have a manual position selector
	e. The casings on the frame and centre supporting column should be made of hygienic stainless steel
	f. Mattress should be radiolucent and suitable for fluoroscopy
	3.2 Measurements:(approximate)
	a. Height: 700-1040 mm (with 50 -70mm mattress)
	b. Side tilt: + 15-20 degrees
	c. Back section adjustment: - 15 degrees to 70 degrees
	d. Foot section adjustment: - 90 to 0 degree, detachable
	e. Trendelenburg: 25-30 degree
	f. Anti trendelenburg: 25-30 degree
	g. Head section adjustment: -40 to -30 degree, detachable
	h. Width: 550 mm
	i. Length: 2000 mm
	4 System Configuration Accessories, spares and consumables
	4.1 System as specified
	4.2 ACCESSORIES: All accessories including the ones listed below should be quoted. The specific accessories and their quantity will depend upon actual requirement
	a. Padded arm rest with straps - pair with clamps
	b. Anaesthesia screen with clamps
	c. Side supports: pair with clamps
	d. Shoulder supports: pair with clamps
	e. Knee crutches for lithotomy position: pair with clamps
	f. X-ray cassette tray
	g. Kidney bridge
	h. Optional accessories (Price of each item should be mentioned separately) A. X-Ray Top for 9" Urology extension B. Metal Drain pan C. Power lift stirrup set with side rail clamp D. Foot control E. Split leg pair F. Reverse Trendelburg restraint strap G. Light weight transfer board.
	g.The machines should be supplied with the following accessories for operating ion prone position (Price of each item should be mentioned separately)
	d. Gel Flat buttom chest roll (medium)
	e. Gel prone positioner

	f. Gel prone head rest (large)
	j. Optional accessories for endourology work
	5 Environmental factors
	5.1 The unit shall be capable of being stored continuously in ambient temperature of 0 -50 deg C and relative humidity of 15-90%
	5.2 The unit shall be capable of operating continuously in ambient temperature of 10 - 40deg C and relative humidity of 15-90%
	6 Standards & Safety
	6.1. Deleted
	6.2 Manufacturer and supplier should be ISO certified for quality standards
	6.3 International Safety standards like IEC 60601-2-46 or equivalent if applicable
	7 Training
	7.1 Comprehensive training for staff of user department and support services till familiarity with the system.
	8 Warranty & Service
	8.1 Comprehensive warranty for 5 years and 5 years Comprehensive Maintenance Service after warrenty. The cost of CMC must be quoted in the price bid.
	8.2 Percentage of uptime guarantee of the equipment during warranty and CMC period for which commitment is to be given must be specified with acceptance of applicable penalty clauses in case of failure to do so.
	8.3 After sales service must be provided in the city of installation. In situations requiring service/repair of the unit outside the city of installation, the expenditure on account of this will have to be borne by the supplier
	9 Documentation
	10.1 Product literature in original along with that of accessories and indigenous components if any. Photocopies/computer generated copies are not acceptable
	10.2 Statement of compliance with tender specifications with clear and unambiguous links to relevant portions of product literature/authentic document, which should be highlighted. Alternatives provided for noncompliant specifications with justification must be described in detail with supporting literature
	10.3 Certificate of compliance with standards and approvals stated above
	10.4 Certificate of manufacturer/principal regarding authorisation of service facility provided by the supplier
	10.5 List of Equipment available in the Service Centre for providing calibration and routine Preventive Maintenance Support, as per manufacturer documentation in service/technical manual.
	10.6 List of important spare parts and accessories, which are required for maintenance and repair, with their part number and costing.
	10.7 Deleted
	10.8 Commitment for supply of log book with check list for daily, weekly, monthly and quarterly preventive maintenance with contact details of service personnel along with the equipment. The job description of the hospital technician and company service engineer should be clearly spelt out in the log book.
	10.9 List of users of quoted equipment with performance certificate from major institutions

Mobile C-arm Image Intensifier	
Sl.No	Technical Specification
	C Arm Specifications
A	X-RAY GENERATOR
	Frequency : 30 KH or better
	Power output : 2 KW or more
	KV range : 40-110 KV or better
	mA in radiography : 20mA or more
	mA in fluoroscopy : 0.2 or less to 3 mA or more in normal fluoroscopy and 8 mA or more
	Should have facility for continuous fluoroscopy and Pulse fluoroscopy (Pulse rate upto 8
	Should have Digital Spot for high quality single image, 10 mA or more
	Housing heat capacity of minimum 400 KHU or fluroscopy time 30 min minimum
B	X-Ray tube Head
	Must have anode heat capacity of min 40,000 HU & cooling rate of min 25,000 HU/Min
	Should have dual/single focal spots
	Collimation : motorized iris and motorized rotating blades
	Tube assembly filtration of 3.0 mm Al or higher
C	C-Arm mechanism and control panel
	Locks for stabilization at desired position
	It should have the following range of movements:
	Motorized vertical movements more than 400mm
	Horizontal travel : 200mm or more
	Orbital movement : (-) 30 deg. To (+) 90 Deg. (120 Deg. Or more)
	Swing / panning movement : +/- 10 degrees or more
	Source image distance : 950 mm or more
	Depth of c-arm : 650 mm or more
D	Control panel (Digital work station)
	It should have the following facilities :
	System should have capabilty of Pulse Fluoroscopy option to reduce to radiation exposure
	per second,which should be easily user selectable
	Fluoroscopy and Radiography exposure on switching
	Image rotation from control panel
	Image intensification, mode selection (normal and zoom)
	Automatic brightness stabilizer
	Auto dose rate control
	Collimation for radiography .
E	Integrated image processing, recording and memory system :
a)	Image intensifier tube
	Input diameter 9" with dual field (9/6)
b)	CCD camera
	CCD camera with 1kx1k resolution for high resolution image acquisition
c)	Integrated image processing, memory and recording system should have
	Medical Grade Monitors (Two Nos.)
	Min 18 inch or more , black and white, flicker free, high resolution (1280x1024 pixels or
f)	Digital image processor
	Provision to record multiple images on CD,DVD& USB with embedded DICOM viewer.
	Image processing at 1K * 1K Matrix
	Contrast enhancement, edge enhancement, zoom facility
	Recursive filter

	Last image hold
	Image rotation, vertical and horizontal reversal
	Medical Imaging software's with ability to store 5000DICOM Compatable images in
g)	Additional features
	The equipment should work on a Power supply of 220-240 Volts, 50-60 Hz, 15 amp.
	Built in/Compatible/External UPS to protect & save patient data and run the machine for
	Lead Aprons with all round protection (0.5mm lead equivalent approved by BARC) – 04
	Lead Aprons with front protection (0.5mm lead equivalent approved by BARC)- 10
	Thyroid shield (0.5mm lead equivalent approved by BARC) - 10
h)	Regulatrory / Safety Requirement
	Equipment should have AERB Type Approval Certificate for radiation safety
	Deleted

SN	BOQ	Qty	UOM
1	C arm as specified	1	Nos
2	Lead Aprons with all round protection	8	Nos
3	Lead Aprons with front protection	10	Nos
4	Thyroid shield	10	Nos
5	Lead eye glasses	2	Nos
6	UPS	1	Nos
7	Hangers and stands for LEAD apron made of SS	1	Nos
8	LEAD Lined Gloves(Disposable 25 No each size)	100	Nos
9	Lead Eye glass	2	Nos

12 Channel ECG Machine	
SN	Technical Specification
1	Twelve channel 5.7" or more LCD display for all 12 leads along with on screen details.
2	Recording for 12 channels simultaneously and have option for user selectable any lead as Rhythm lead. Can able to print ECG at A4 size paper through inbuilt printer.
3	Recording speed selection of 5, 10/ 12.5, 25 and 50 mm/sec.
4	Sensitivity of 2.5,5,10,20 mm /mV. It should also have AGC (Automatic Gain Control)
5	Facility to enter patient information (Patient ID, Name, Age, Sex, Hospital's name) which get updated in system and is recorded on the recorder A4 paper
6	Patient memory function 20 patients or more
7	Waveforms can be recorded.
8	Interpretation software.
9	Mains and in built rechargeable battery backup atleast 2 hrs/ 30 ECG
10	Should have USB port/SD card (to be supplied by the bidder)/ equivalent port to send the data in the Computer.
11	Deleted

	BOQ	Qty	UOM
1	ECG Machine as per Specification with standard accessories	1	No
2	Interpretation software.	1	No
	Added para under BOQ: ECG paper	500 patients	

Defibrillator with ECG Monitor	
SN	Technical Specification
1	Description of Function
1.1	Defibrillator is required for reviving the heart functions by providing selected quantum of electrical shocks with facility for monitoring vital parameters.
2	Operational Requirements
2.1	Defibrillator should be Bi- Phasic, light weight and latest model
2.2	Should monitor 3 vital parameters and display them
2.3	Should print the ECG on thermal recorders.
2.4	Should work on both Manual mode upto 200J or more and Automated external defibrillation (AED) mode up to 150 J or more.
2.5	Should be capable of doing synchronized & asynchronized cardioversion
2.6	Can be operated from mains as well as battery
2.7	Should have defibrillator testing facility
2.8	Demonstration of the equipment is a must.
3	Technical Specifications
3.1	Should be a Low Energy Biphasic defibrillator monitor with Recorder, having capability to arrest all arrhythmia within a maximum energy of 200 Joules for manual mode
3.2	Should monitor ECG through paddles, pads and monitoring electrodes and Defibrillate through pads and paddles. Should have Automatic or Manual lead switching to see patient ECG through paddles or leads
3.3	Should measure and compensate for chest impedance for a range of 25 to 175 ohms
3.4	Should have a built in min 48mm strip printer/ thermal recorder
3.5	Should have charging time of less than 6 seconds for maximum energy. Charging indicator should be there.
3.6	Should have bright 5.5" or more LCD / TFT display for viewing messages and ECG waveform of 3 seconds
3.7	Single Adult and pediatric paddles should be available. Internal paddles (adult & pediatric) should also be available (price to be quoted separately)
3.8	Should have event summary facility for recording and printing at least 250 events and 50 waveforms. Patient data storage 90 mins of ECG and events.
3.9	Should have a battery capable of usage for at least 90minutes or 30 discharges.
3.10	Should be capable of printing Reports on Event summary, configuration, self-test, battery capacity etc
3.11	Should have facility for self-test/check before usage and set up function
3.12	Should have SPO2 and EtCO2 integrated facility. (Optional – price to be quoted separately)
3.13	In manual mode the unit should provide energy selection at (1-200 J in variable step) joules and AED mode of upto minimum 150 Joules.
3.14	Should have user friendly 1,2,3 color coded operation.
3.15	Voice prompts on AED mode
3.16	Printing reports of events summary configuration/set test/ battery capacity
4	System Configuration Accessories, spares and consumable
4.1	Defibrillator -01

4.2	Paddles Adult/Paediatric (pair) -01
4.3	**Deleted**
4.4	ECG Rolls -10
4.5	Disposable pads-10 nos.
4.6	Complete set of ECG cable with electrodes- 02
5	**Environmental factors**
5.1	The unit shall be capable of operating continuously in ambient temperature of 10 -400 C and relative humidity of 15-90%
5.2	The unit shall be capable of being stored continuously in ambient temperature of 0 - 500 C and relative humidity of 15-90%
6	**Power Supply**
6.1	Power input to be 220-240VAC, 50Hz
6.2	Resettable overcurrent breaker shall be fitted for Protection
7	**Standards, Safety and Training**
7.1	Deleted
7.2	Should conform to international test protocols on exposure to shock forces and to vibration forces. The standard should be documented.
7.3	Should have local service facility. The service provider should have the necessary equipments recommended by the manufacturer to carry out preventive maintenance test as per guidelines provided in the service/maintenance manual.
8	**Documentation**
8.1	User Manual in English
8.2	Service manual in English
8.3	List of important spare parts and accessories with their part number and costing
8.5	Log book with instruction for daily, weekly, monthly and quarterly maintenance checklist. The job description of the hospital technician and company service engineer should be clearly spelt out.
8.7	Compliance Report to be submitted in a tabulated and point wise manner clearly mentioning the page/Para number of original catalogue/data sheet. Any point, if not substantiated with authenticated catalogue/manual, will not be considered.

	BOQ	Qty	UOM
1	Defibrillator as per specification	1	No
2	Paddles Adult/Paediatric (pair)	1	Pair
3	ECG Rolls	10	Nos
4	Disposable pads	10	Nos
5	Complete set of ECG cable with electrodes	2	Nos
6	Internal Paddle	1	No
7	SpO2 Module (Optional)	1	No
8	ETCO2 Module (Optional)	1	No
	Added para in BOQ		
	Internal paddles (adult & pediatric) - 1 set each (price to be quoted separately)		

SN	BiPAP/ CPAP		
1	The unit shall be capable of being stored continuously in ambient temperature of 0-50deg C and relative humidity of 15-90%		
a	IPAP: 4 to 25 cm		
b	EPAP: 4 to 25 cm		
c	Breath rate: upto 30 BPM with spontaneous for time mode		
d	Timed inspiration: 0.5 to 3.0 sec		
e	Rise time: 150 to 400mSec		
2	Modes:- CPAP with PS, Biphasic pressure control, apnea backup		
3	System with leakage compensation.		
4	System should be supplied with all reusable accessories.		
5	Power input to be 220-240VAC, 50Hz fitted with Indian plug		
6	Delected		
7	Comprehensive training for lab staff and support services till familiarity with the system		
8	User/Technical/Maintenance manuals to be supplied in English.		
9	List of important spare parts and accessories with their part number and costing.		
10	Log book with instructions for daily, weekly, monthly and quarterly maintenance checklist.		
11	Added para:		
	Battery backup of 1 hour or more		
	.BOQ	Qty	UOM
1	Non-invasive ventilator with standard accessories	1	No
2	Reusable Masks with all sizes (Oral & Nasal) small, medium, large (2 sets each)	1	LS

Pulse Oximeter	
SN	Technical Specification
1	Compact portable bedside pulse oximeter with Colour LCD/TFT display.
2	Continuous monitoring of SpO2 (arterial blood oxygen saturation) , pulse rate
3	Measuring range :
a	Spo2 : 10 to 100% minimal graduation 1%
b	Pulse rate : Pulse rate : 20 to 240 bpm, minimal graduation 1 bpm
4	**Accuracy SpO2 : 50 to 69% (± 3%), 70 to 100 % (±3%)**
5	**Display shows: SpO2(%), PR, Plethymograph & perfusion bar/blip bar**
6	The motion artifact should be minimal
7	**Large bright display (4 inch or more) readable from more than 6 feet distance**
8	User preset of high/low alarms on SpO2 and pulse rate monitoring
9	Audio visual alarm for SpO2 and pulse rate in case measurements are outside
10	Silencing feature for audio alarm
11	Display reports system errors, probe failure and built in battery status
12	Automatic switch from mains to batteries in case of power failure
13	Power requirements : 220 V/ 50Hz and internal re-chargeable battery
14	**Device is produced by ISO 9001/ISO 13485 certified manufacturer (Certificate**
15	Deleted
16	It must show spo2 value for low perfusion patients.
17	**Should have RS 232C port or equivalent port for data transmission.**
18	**Automatic Signal averaging time 4 to 12 sec**
19	Submitted with:
a	2 x reusable SpO2 sensors neonate, clip-on type.
b	Patient extension cable -2 Nos.
c	2 x reusable SpO2 sensors(finger type) for children and adolescents
d	2 x spare set of fuses

	BOQ	Qty	UOM
1	Pulse Oximeter as per specification	1	No
2	Reusable SpO2 sensors neonate, clip-on type.	2	Nos
3	Patient extension cable	2	Nos
4	Reusable SpO2 sensors(finger type) for children and adults	2	Nos each
5	spare set of fuses	2	Nos

6100 WIDE CORRIDOR

FD1

FD1

D1

D1

FRost glass

Mamography.

Fluroscopy

Ultra sound

Ultra sound

Ultra sound

C.T
SCAN

Nurses
Station

D2

D2

glazing with lead
equivalent glass

D5

D5

CH.
ROOM

WAITING(54 SEATS)

iv2

UPS

CONSOLE

SD2

SD2

TOILET

Digital X
ray console

D4

D2

D2

D2

750

1500

1000

D4

TOILET

Foyer

M.R.I

interlocked
lead lined door

glazing with lead
equivalent glass

Console

interlocked
lead lined door

D6

Doc
change RM

change RM

Patient
Preperation
Room

X-RAY

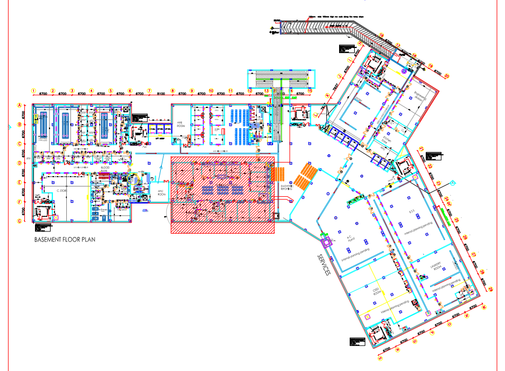
X-RAY

X-RAY

AIR SHAFT UPTO
TERRACE

NOTES:-

KEY PLAN---FOR RADIOLOGY



NO.	DATE	DESCRIPTION
PRINTS ISSUED		

REV	DATE	DESCRIPTION
REVISION		

PROJECT

HOSPITAL BLOCK,
AIIMS RAEBARELI

TITLE

WORKING DRAWING

RADIOLOGY AREA
BASEMENT

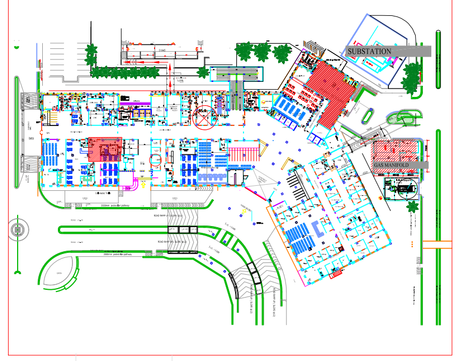
Drawing No.		R-0 Revision
Job No.	1:200 Scale	Date
App by	Chkd. by	Prep. by

HOSPITAL SERVICES CONSULTANCY
CORPORATION (INDIA) LIMITED
(A GOVERNMENT OF INDIA ENTERPRISES)

HSCC

NOTES:-

KEY PLAN---FOR RADIOLOGY



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REVISION		

PROJECT

HOSPITAL BLOCK,
AIIMS RAEBARELI

TITLE

WORKING DRAWING

RADIOLOGY AREA
GR FLOOR

Drawing No.		R-0 Revision
Job No.	1:200 Scale	Date
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HOSPITAL SERVICES CONSULTANCY CORPORATION (INDIA) LIMITED
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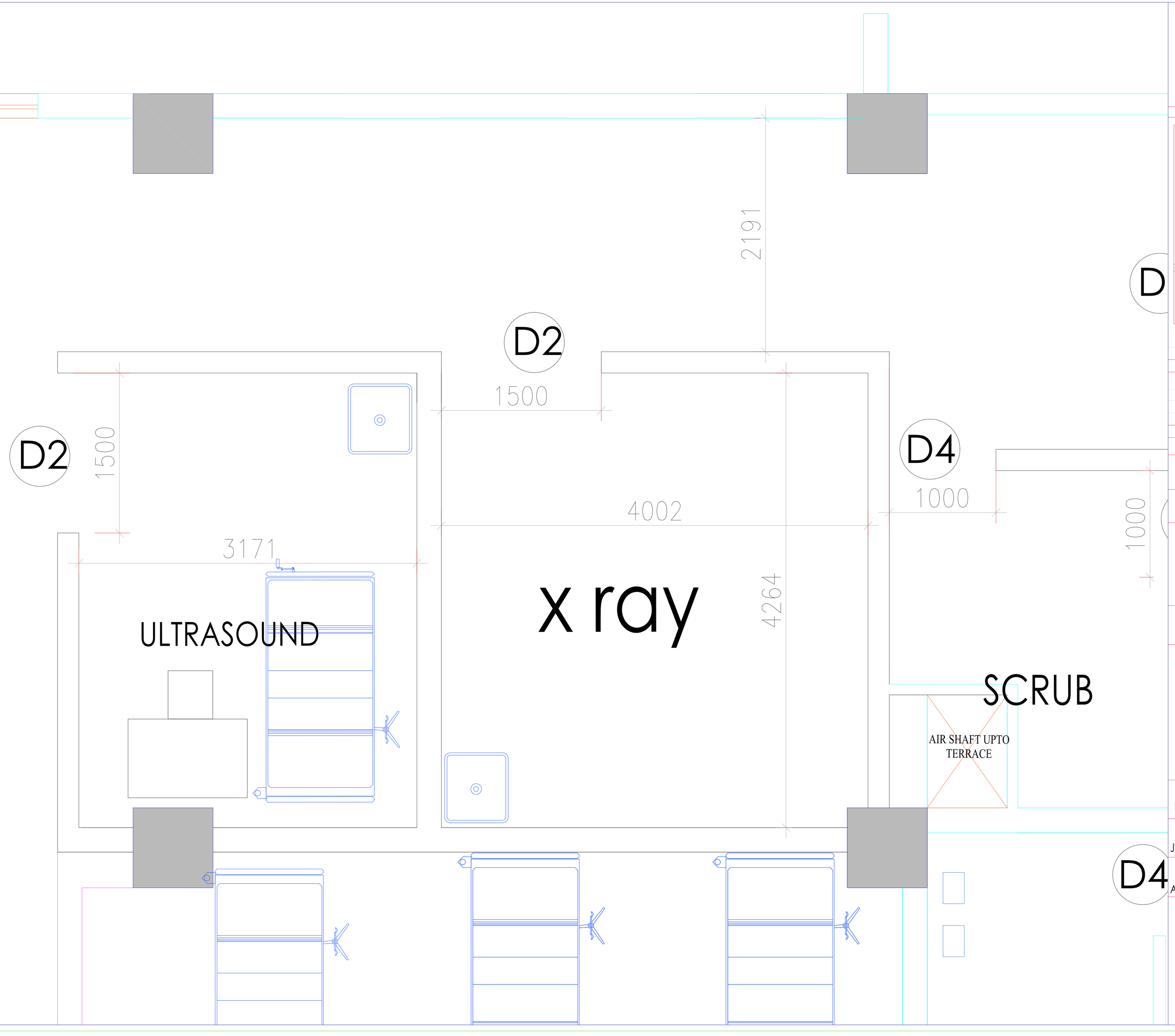
HSCC



No. P-45021/2/2017-PP (BE-II)
Government of India
Ministry of Commerce and Industry
Department of Industrial Policy and Promotion
(Public Procurement Section)
****

Dated 28th May, 2018
Udyog Bhawan, New Delhi

To
All Central Ministries/Departments/CPSUs/All concerned

ORDER

Subject: Public Procurement (Preference to Make in India), Order 2017 – Revision; regarding.

Department of Industrial Policy and Promotion, in partial modification of Order No.P-45021/2/2017-B.E.-II dated 15.6.2017, hereby issues the revised 'Public Procurement (Preference to Make in India), Order 2017" with immediate effect:-

Whereas it is the policy of the Government of India to encourage 'Make in India' and promote manufacturing and production of goods and services in India with a view to enhancing income and employment, and

Whereas procurement by the Government is substantial in amount and can contribute towards this policy objective, and

Whereas local content can be increased through partnerships, cooperation with local companies, establishing production units in India or Joint Ventures (JV) with Indian suppliers, increasing the participation of local employees in services and training them,

Now therefore the following Order is issued :

1. This Order is issued pursuant to Rule 153 (iii) of the General Financial Rules 2017.

2. **Definitions**: For the purposes of this Order:

   'Local content' means the amount of value added in India which shall, unless otherwise prescribed by the Nodal Ministry, be the total value of the item procured (excluding net domestic indirect taxes) minus the value of imported content in the item (including all customs duties) as a proportion of the total value, in percent.

   'Local supplier' means a supplier or service provider whose product or service offered for procurement meets the minimum local content as prescribed under this Order or by the competent Ministries / Departments in pursuance of this order.

   'L1' means the lowest tender or lowest bid or the lowest quotation received in a tender, bidding process or other procurement solicitation as adjudged in the evaluation process as per the tender or other procurement solicitation.

   'margin of purchase preference' means the maximum extent to which the price quoted by a local supplier may be above the L1 for the purpose of purchase preference.

.....Contd. p/2

'Nodal Ministry' means the Ministry or Department identified pursuant to this order in respect of a particular item of goods or services or works.

'Procuring entity' means a Ministry or department or attached or subordinate office of, or autonomous body controlled by, the Government of India and includes Government companies as defined in the Companies Act.

'Works' means all works as per Rule 130 of GFR- 2017, and will also include *'turnkey works'*.

3. **Requirement of Purchase Preference :** Subject to the provisions of this Order and to any specific instructions issued by the Nodal Ministry or in pursuance of this Order, purchase preference shall be given to local suppliers in all procurements undertaken by procuring entities in the manner specified hereunder"

a. "In procurement of goods, services or works in respect of which the Nodal Ministry has communicated that there is sufficient local capacity and local competition, and where the estimated value of procurement is Rs. 50 lakhs or less, only local suppliers shall be eligible. If the estimated value of procurement of such goods or services or works is more than Rs. 50 lakhs, the provisions of sub-paragraph b or c, as the case may be, shall apply";

b. "In the procurements of goods or works which are not covered by paragraph 3a and which are divisible in nature, the following procedure shall be followed";

   i. Among all qualified bids, the lowest bid will be termed as L1. If L1 is from a local supplier, the contract for full quantity will be awarded to L1.

   ii. If L1 bid is not from a local supplier, 50% of the order quantity shall be awarded to L1. Thereafter, the lowest bidder among the local suppliers, will be invited to match the L1 price for the remaining 50% quantity subject to the local supplier's quoted price falling within the margin of purchase preference, and contract for that quantity shall be awarded to such local supplier subject to matching the L1 price. In case such lowest eligible local supplier fails to match the L1 price or accepts less than the offered quantity, the next higher local supplier within the margin of purchase preference shall be invited to match the L1 price for remaining quantity and so on, and contract shall be awarded accordingly. In case some quantity is still left uncovered on local suppliers, then such balance quantity may also be ordered on the L1 bidder.

c. "In procurements of goods or works not covered by sub-paragraph 3a and which are not divisible, and in procurement of services where the bid is evaluated on price alone, the following procedure shall be followed":-

   i. Among all qualified bids, the lowest bid will be termed as L1. If L1 is from a local supplier, the contract will be awarded to L1.

.....Contd. p/3

ii. If L1 is not from a local supplier, the lowest bidder among the local suppliers, will be invited to match the L1 price subject to local supplier's quoted price falling within the margin of purchase preference, and the contract shall be awarded to such local supplier subject to matching the L1 price.

iii. In case such lowest eligible local supplier fails to match the L1 price, the local supplier with the next higher bid within the margin of purchase preference shall be invited to match the L1 price and so on and contract shall be awarded accordingly In case none of the local suppliers within the margin of purchase preference matches the L1 price, then the contract may be awarded to the L1 bidder.

4. **Exemption of small purchases**: Notwithstanding anything contained in paragraph 3, procurements where the estimated value to be procured is less than Rs. 5 lakhs shall be exempt from this Order. However, it shall be ensured by procuring entities that procurement is not split for the purpose of avoiding the provisions of this Order.

5. **Minimum local content**: The minimum local content shall ordinarily be 50%. The Nodal Ministry may prescribe a higher or lower percentage in respect of any particular item and may also prescribe the manner of calculation of local content.

6. **Margin of Purchase Preference**: The margin of purchase preference shall be 20% .

7. **Requirement for specification in advance**: The minimum local content, the margin of purchase preference and the procedure for preference to Make in India shall be specified in the notice inviting tenders or other form of procurement solicitation and shall not be varied during a particular procurement transaction.

8. **Government E-marketplace**: In respect of procurement through the Government E-marketplace (GeM) shall, as far as possible, specifically mark the items which meet the minimum local content while registering the item for display, and shall, wherever feasible, make provision for automated comparison with purchase preference and without purchase preference and for obtaining consent of the local supplier in those cases where purchase preference is to be exercised.

9. **Verification of local content**:

   a. The local supplier at the time of tender, bidding or solicitation shall be required to provide self-certification that the item offered meets the minimum local content and shall give details of the location(s) at which the local value addition is made.

   b. In cases of procurement for a value in excess of Rs. 10 crores, the local supplier shall be required to provide a certificate from the statutory auditor or cost auditor of the company (in the case of companies) or from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local content.

   c. Decisions on complaints relating to implementation of this Order shall be taken by the competent authority which is empowered to look into procurement-related complaints relating to the procuring entity.

.....Contd. p/4

d. Nodal Ministries may constitute committees with internal and external experts for independent verification of self-declarations and auditor's/ accountant's certificates on random basis and in the case of complaints.

e. Nodal Ministries and procuring entities may prescribe fees for such complaints.

f. False declarations will be in breach of the Code of Integrity under Rule 175(1)(i)(h) of the General Financial Rules for which a bidder or its successors can be debarred for up to two years as per Rule 151 (iii) of the General Financial Rules along with such other actions as may be permissible under law.

g. A supplier who has been debarred by any procuring entity for violation of this Order shall not be eligible for preference under this Order for procurement by any other procuring entity for the duration of the debarment. The debarment for such other procuring entities shall take effect prospectively from the date on which it comes to the notice of other procurement entities, in the manner prescribed under paragraph 9h below.

h. The Department of Expenditure shall issue suitable instructions for the effective and smooth operation of this process, so that:

   i. The fact and duration of debarment for violation of this Order by any procuring entity are promptly brought to the notice of the Member-Convenor of the Standing Committee and the Department of Expenditure through the concerned Ministry /Department or in some other manner;

   ii. on a periodical basis such cases are consolidated and a centralized list or decentralized lists of such suppliers with the period of debarment is maintained and displayed on website(s);

   iii. in respect of procuring entities other than the one which has carried out the debarment, the debarment takes effect prospectively from the date of uploading on the website(s) in the such a manner that ongoing procurements are not disrupted.

10. **Specifications in Tenders and other procurement solicitations:**

a. Every procuring entity shall ensure that the eligibility conditions in respect of previous experience fixed in any tender or solicitation do not require proof of supply in other countries or proof of exports.

b. Procuring entities shall endeavour to see that eligibility conditions, including on matters like turnover, production capability and financial strength do not result in unreasonable exclusion of local suppliers who would otherwise be eligible, beyond what is essential for ensuring quality or creditworthiness of the supplier.

c. Procuring entities shall, within 2 months of the issue of this Order review all existing eligibility norms and conditions with reference to sub-paragraphs 'a' and 'b' above.

d. If a Nodal Ministry is satisfied that Indian suppliers of an item are not allowed to participate and/ or compete in procurement by any foreign government, it may, if it deems appropriate, restrict or exclude bidders from that country from eligibility for procurement of that item and/ or other items relating to that Nodal Ministry. A copy of every instruction or decision taken in this regard shall be sent to the Chairman of the Standing Committee.

....Contd. p/5

e. For the purpose of sub-paragraph 10 d above, a supplier or bidder shall be considered to be from a country if (i) the entity is incorporated in that country, or ii) a majority of its shareholding or effective control of the entity is exercised from that country; or (iii) more that 50% of the value of the item being supplied has been added in that country. Indian suppliers shall mean those entities which meet any of these tests with respect to India."

11. **Assessment of supply base by Nodal Ministries**: The Nodal Ministry shall keep in view the domestic manufacturing / supply base and assess the available capacity and the extent of local competition while identifying items and prescribing minimum local content or the manner of its calculation, with a view to avoiding cost increase from the operation of this Order.

12. **Increase in minimum local content**: The Nodal Ministry may annually review the local content requirements with a view to increasing them, subject to availability of sufficient local competition with adequate quality.

13. **Manufacture under license/ technology collaboration agreements with phased indigenization**: While notifying the minimum local content, Nodal Ministries may make special provisions for exempting suppliers from meeting the stipulated local content if the product is being manufactured in India under a license from a foreign manufacturer who holds intellectual property rights and where there is a technology collaboration agreement / transfer of technology agreement for indigenous manufacture of a product developed abroad with clear phasing of increase in local content.

14. **Powers to grant exemption and to reduce minimum local content**: Ministries /Departments of Government of India and the Boards of Directors of Government companies or autonomous bodies may, by written order,

    a. reduce the minimum local content below the prescribed level;

    b. reduce the margin of purchase preference below 20% ;

    c. exempt any particular item or procuring or supplying entities or class or classes of items or procuring or supplying entities from the operation of this Order or any part of the Order.

    A copy of every such order shall be marked to the Member-Convenor of the Standing Committee constituted under this Order.

15. **Directions to Government companies**: In respect of Government companies and other procuring entities not governed by the General Financial Rules, the administrative Ministry or Department shall issue policy directions requiring compliance with this Order.

16. **Standing Committee**: A standing committee is hereby constituted with the following membership:

    Secretary, Department of Industrial Policy and Promotion—Chairman
    Secretary, Commerce—Member
    Secretary, Ministry of Electronics and Information Technology—Member
    Joint Secretary (Public Procurement), Department of Expenditure—Member
    Joint Secretary (DIPP)—Member-Convenor

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The Secretary of the Department concerned with a particular item shall be a member in respect of issues relating to such item. The Chairman of the Committee may co-opt technical experts as relevant to any issue or class of issues under its consideration.

17. **Functions of the Standing Committee**: The Standing Committee shall meet as often as necessary but not less than once in six months. The Committee

    a. shall oversee the implementation of this order and issues arising therefrom, and make recommendations to Nodal Ministries and procuring entities.

    b. shall annually assess and periodically monitor compliance with this Order

    c. shall identify Nodal Ministries and the allocation of items among them for issue of notifications on minimum local content

    d. may require furnishing of details or returns regarding compliance with this Order and related matters

    e. may, during the annual review or otherwise, assess issues, if any, where it is felt that the manner of implementation of the order results in any restrictive practices, cartelization or increase in public expenditure and suggest remedial measures

    f. may examine cases covered by paragraph 13 above relating to manufacture under license/ technology transfer agreements with a view to satisfying itself that adequate mechanisms exist for enforcement of such agreements and for attaining the underlying objective of progressive indigenization

    g. may consider any other issue relating to this Order which may arise.

18. **Removal of difficulties**: Ministries /Departments and the Boards of Directors of Government companies may issue such clarifications and instructions as may be necessary for the removal of any difficulties arising in the implementation of this Order.

19. **Ministries having existing policies**: Where any Ministry or Department has its own policy for preference to local content approved by the Cabinet after 1st January 2015, such policies will prevail over the provisions of this Order. All other existing orders on preference to local content shall be reviewed by the Nodal Ministries and revised as needed to conform to this Order, within two months of the issue of this Order.

20. **Transitional provision**: This Order shall not apply to any tender or procurement for which notice inviting tender or other form of procurement solicitation has been issued before the issue of this Order.

(B. S. Nayak)
Under Secretary to Government of India
Ph. 23061257