

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, inter alia 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 **Medical Superintendent, Safdarjung Hospital, New Delhi**. 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. 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.
- i. 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 L1 price, in a situation where L1 price is from someone other than on 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 L1 price, the 4% quantity earmarked for MSEs owned by SC/ST entrepreneurs will be met from other participating MSEs.
  - ii. 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 on MSE, failing which their tender will be liable to be ignored.

**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.	Name of Equipment	Qty.	Department	EMD (Rs.)
1	3 Tesla MRI Unit	1 no.	For Radiology Deptt. in New Emergency Block	20,00,000/-
2	Digital Flat Panel Radiography System	1 no.	For Radiology Deptt. in New Emergency Block	3,50,000/-

**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 90 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.**

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.

**Following details have been provided by our Safderjung Hospital Site Office of Various Makes for Executing Turnkey Activities for Installation, Testing & Commissioning Medical Equipment viz. CT Scan, MRI, DSA, Digital Radiography, Digital Radiofluoroscopy, Cath Lab., PET/CT, Gamma Camera, Gamma Knife, Hemodialysis Machines, RO Plant, any Lab. Equipment or any other Medical Equipment requiring such activities at Safderjung Hospital Project:**

**LIST OF APPROVED MAKES : CIVIL WORKS**

S.No	Material	MANUFACTURERS
1	Doors & Windows fixtures/ Fittings	<i>Dorma, Godrej, Ozone, Austavision</i>
2	Door Closer / Floor spring	<i>Ozone, hettich, Dorma, Godrej,</i>
3	Aluminium Sections.	Hindalco, Jindal, <i>BALCO, Alom</i>
4	Clear Glass/ Clear Float Glass/ Toughened Glass	Saint Gobain(SG), Modi, <i>Asahi, Glaverbel</i>
5	Laminates	Formica, Decolam, Century, Marino, <i>Greenlam</i>
6	Synthetic Enamel Paints	Berger, Asian, ICI , Nerolac, Shalimar
7	Oil Bound Distemper	Berger, Asian, <i>ICI</i> , Nerolac, Shalimar
8	Cement Paint	Snowcem plus, Berger, Nerolac, <i>Asian, ICI</i>
9	Plastic Emulsion Paint	<i>Berger</i> , Asian, ICI , Nerolac, Shalimar
10	Other Paints/Primers	Berger, Asian, ICI , Nerolac, Shalimar
11	MS Pipe/ Sections	Jindal Hisar, Prakash-Surya, BST, Kalinga, Tata
12	Polycarbonate Sheets	<i>GE, Macrolux, Plastic, Vergola, Skyarch, Polytechno</i>
14	Wooden Fire Check Doors	Navair, Pacific Fire Control, Kuttu Promat, Sukri
15	Metal Fire Check Doors	Navair, Shakti- Met, Godrej, Sukri, Pacific Fire Control
16	Ceramic Tiles	Johnson, Somany, Kajaria, Nitco, <i>Bell, Hindustan,</i>
17	Pre-Laminated Particle Board	Novopan, Greenlam, Kitlam, Marino, <i>Century, Archid ply</i>
18	Flush Door Shutters	Century, Kitply, Green Ply, <i>Duro</i>
19	Glazed Tiles	Bell, Somany, Johnson, Kajaria, <i>Nitco</i>
20	PVC Water Stops	<i>Prince/Supreme/Finolex//BASF</i>
21	White Cement	Birla White, J.K., <i>Grasim</i>
22	Dash Fasteners./Anchor bolts	Hilti, Fischer, Bosch,
23	Stainless Steel Bolts, Washers and nuts	Kundan , Puja , Atul
24	6mm thick Reflective Glass	Glaverbel, Glavemas, Saint Gobain, <i>Asahi</i>
25	Door Locks	ACME, Godrej, <i>Dorma</i>

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26	Door Seal – Woolpile Weather Strip/ <i>Acoustic seal</i>	Anand -Reddiplex, <i>Enviroseal, Viper</i>
27	Aluminium Grill	Hindalco, Jindal
28	Vitrified Tiles	Naveen, Bell, Kajaria, Somani, <i>Nitco, Johnson, Euro</i>
29	Aluminium Cladding sheets	Alstrong , Alpolic, Alucobond, Alstone International, Aludecor Lamination
30	Stainless steel D-handles	D-line, Giesse, Dorma,Dorset, ozone
31	Stainless Steel Pipes/Flats	304 Grade (as approved by Engineer)
32	Structural Steel	TATA, SAIL, RINL, JINDAL
33	Epoxy Flooring/ wall coating	Fosrock, Beck, Famaflor, <i>Araldite, STP, Sika, BASF</i>
34	Ply board	Greenply, Kitply, Century, Archid, Marino, <i>Duro</i>
35	PVC Flooring	LG, Tarkett, Responsive , <i>Armstrong, Gerflor</i>
36	SS Railing	<i>Ozone, D-Line, Jindal,</i>
37	Fire rated door closer/Mortice Lock/ Door Co-ordinator	Dorma, Becker F.S. Australian or approved equivalent
38	Gypsum Board System	Gyproc (Saint Gobain),Lafarge, Boral, <i>Hilux,,Aerolite</i>
39	Adhesive for Door Work	<i>Fevicol/ Vamicol/ Dunlop/ Piditite/ Sika/ Thermoshield</i>
40	Epoxy Paint	<i>Nerolac/ Shalimar/ cico/ Fairmate/ sika/ BASF/ Berger/ Asian/ Pidilite</i>
41	Polysulphide sealant	Pidilite/ Fosroc/ Choksey/chematal rai/ cico/ sika, MC Bouchemie, BASF, STP
42	Glass Doors (Motorised)	<i>DORMA/ Hafle/ Ozone</i>
43	Calcium silicate boards	<i>Hilux/ Aerolite, Armstrong</i>
44	Calcium Silicate Tiles	<i>Hilux/ Aerolite, Armstrong</i>
45	Texture Paints	<i>Spectrum/Heritages/ICI Dulux/Asian</i>
46	Wall care putti	<i>J.K. White/Birla/Gyproc wall putty</i>
47	Frameless glass partition fixtures	<i>Dorma/Hafle/Ozone</i>
48	U-PVC Windows	<i>Fenesta, Window Magic, Aluplast</i>
49	Toilet Cubicles	<i>Greenlam, Marino or approved equivalent</i>
Note:	<p>If the makes given in the list are not available, other equivalent makes can be considered subject to approval by the Purchaser/HSCC based on credentials of the company and test certificates of the product, subject to price adjustment.</p> <p>Wherever makes have not been specified for certain items, the same shall be as per BIS and as per approval of Purchaser/HSCC.</p>	

LIST OF APPROVED MAKES: PLUMBING WORKS

Sl.No	Material	Relevant IS Code	MANUFACTURERS

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1	Vitreous China Sanitary ware	2556	Kohler, Roca, American Standard, Toto
2	White Glazed Fire Clay Sink	771	Sanfire, Cera, Neycer, Hindware.
3	Stainless Steel Sink		Jayna, <i>Neelkanth</i> , Commander, Nirali
4	Plastic seat cover of W.C	2548	Kohler, Roca, American Standard, Toto
5	Geyser		Racold, Venus, Voltas, Usha Lexus, Jaguar, Havells
6	C.P. Fittings Mixer/Pillar taps Washers, C.P. brass accessories ,CP Angle Valve,Bibcocks,CP waste	1795/4291/4827	Kohler, Roca, American Standard, Toto
7	Centrifugally /Sand cast iron pipes & fittings	3989/1729	Neco, Hepco, <i>SKF</i>
8	G.I. Pipes	1239 Part I	Jindal-Hissar, Tata, Prakash-Surya
9	G.I. Fittings	1239 Part I	Unik, K.S., Zoloto, R
10	Stoneware pipes & Gully Traps	651	IS Marked pipes
11	Mirror		Atul, Modi guard, <i>Asahi</i> , <i>Saint Gobain</i>
12	Hand drier		Kopal, Automat, Euronic, <i>Utech</i>
14	Insulation of Hot water pipes		Vidoflex insulation, Superlon, <i>Thermafex</i> , <i>Kaiflexkaimenn</i>
15	D.I pipes		Jindal, Tata, Electrosteel., <i>Kesoram</i>
16	PVC/UPVC pipes & fittings		Finolex , Prince,
17	Infrared Sensor operated Faucets/Urinals		Kohler, Roca, American Standard, Toto
18	Gratings, Strainers, Cleanouts etc		Neer Brand (Sage Metals), <i>ACO</i>
19	Decorative bath room fittings		Jaquar (Florentine range), Aquabaths, Kohler
20	HDPE pipes and fittings		Oriplast, So-Soon, Finolex, Gebreti, Nosil,
21	CPVC pipe,fittings and Solvent		Flowguard, Astral, Prince,
22	Copper Pipe		Raj Co., Maxflow, <i>Mehta Tubes</i>
23	Copper Fittings		Viega, IBP, <i>Yorkshire</i> , <i>Mehta Tubes</i> , <i>Rajco</i>
24	Lab drainage		Viega, Duraline, Rex
25	Lab Fittings		Vijay, Viega
26	SS pipe(EN-10312) & press type fitting		Viega, Jindal
27	Oxilyte (Mixed oxident)		Oxybee Solutions, I2M Technologies, Faith Innovations

Note:Wherever makes have not been specified for certain items, the same shall be as per BIS and as per approval of Purchaser/HSCC.

**LIST OF APPROVED MAKES : FIRE FIGHTING WORKS**

Sl.No	Material	Relevant ISI Code	MANUFACTURERS
1	G.I./M.S. Heavy class pipe	1239/3589	Jindal-Hissar, Tata, Prakash -Surya,
2	Portable Fire Extinguisher	2171	Minimax, <i>Safex</i> , Ceasefire, Newage,

3	Sprinkler Heads		
4	Pendent type		Tyco, Viking, HD, Grinnel
5	Side wall type		Tyco, Viking, HD, Grinnel
6	Sprinkler Side wall extended through		Tyco, Viking, HD, Grinnel
7	Standby battery lead acid		Exide, Standard, Amco
8	Cables		As per Electrical Works
9	G.I. Fittings	1239 Part I	Unik, K.S., Zoloto, R
10	DI pipes		Jindal, TATA, Electrosteel, Kesoram
11	Pipe coat material (Pipe protection)		<i>Pypkote Integrated water proofing co. Madras/coaltek Rustech products (P) Ltd. Syndcate Enclave, Dabri/Makphall</i>
12	Fire Man's Axe		<i>Safeguard/safex/Newage/Gunnebo</i>

Note: Wherever makes have not been specified for certain items, the same shall be as per BIS and as per approval of Purchaser/HSCC.

#### LIST OF APPROVED MAKES FOR ELCTRICAL SYSTEM

Contractor shall use the materials of approved make as indicated below unless specified in BOQ or as approved by the HSCC electrical incharge. The contractor shall ensure the correct selection of the approved make meeting the specifications and application duties. Before placing order for procurement, the sample of approved make shall be got verified for its suitability to the specification and application duty. However, HSCC electrical engineer (approving authority) reserves the right to opt for the best preferred listed make. The contractor shall quote the rate for the material and equipment as per the list of approved makes and equipment as per the list of approved makes. In the event of the contractor wants to use alternate makes other than those stipulated for any reason, the contractor can send a proposal after ensuring that what he proposes at the least meets both the quality and safety standard of the stipulated makes, and the financial benefit that will accrue to the client. He shall also stand full guarantee to his alternate proposal. The alternate makes can be used only after an approval accorded by the client/HSCC., whose decision will be final in this matter. Any financial implication incurred related with inspection will be borne by contractor.

S.No.	Item Description	Make list
1	Timers in Distribution board	Legrand/ Hager/ Siemens/ ABB/ GE
2	MCB distribution Boards	L & T /Hager/ MDS/Legrand/ Siemens, ABB/GE/ Schenieder (MG)
3	MCB	L & T /Hager/ MDS/Legrand/ Siemens, ABB/GE/ Schenieder (MG)
4	Rewirable porcelain wire	CPL, KEW
5	Data and Voice wire	Finolex, Delton, Skyton, Anchor, L&T, AT&T, Avaya
6	RCCB	L & T Hager/ Legrand/ Siemens, GE/Schenieder (Merlin –Gerin)
7	ELCB/ELMCB	Merlin Gerin-multi 9, Legrand, Hager, Siemens



8	11 KV LT XLPE cables	RPG/ Polycab/ NICCO/ UNIVERSAL/Rallison/KEI/Skytone/ Havells
9	Copper Control cable	Finolex/ Polycab/ NICCO/ Universal/ National/ Rallison/RR Cable
10	Cable Joints (Heat Shrinkable)	Raychem/3M/Cabseal
11	Cable Trays	Steelways/ Bharti/ Unitech /Maheshwari/or approved by HSCC
12	Galvanized/PVC Raceways and raceways accessories	Steelways/ Bharti/ Schneider(MG)/Legrand
13	Light fitting	Philips/ GE/ Crompton Greaves
14	fancy LIGHT FITTING	Anchor(Panasonic )/ Twinkle/Decon/Ankur
15	Lamps	Philips/ Osram/ GE/Anchor (Panasonic)/Perlite
16	GI / MS conduit ISI marked	BEC/ AKG/ Steel Kraft
17	PVC conduit	BEC/ AKG
18	Steel conduit accessories (ISI as approved sample)	Sharma sales corporation, super sales corporation or equivalent.
19	Modular Metal box for switch /socket	Havells/ MK/MDS/Anchor Roma/Northwest
20	Copper conductor FRLS PVC insulated wires ISI marked	National/ Finolex / R R cable/Rallison/Skytone/lap/Bonton
21	Modular Switches & sockets Outlets	Havell's ( Crabtree)/ MK- Wraparound/Hagger/Wipro Legrand (Myrius/ Anchor- Roma(Tersa, woods,viola)/ Northwest
22	Metal clad Socket outlets With boxes	L & T Hager/ Siemens/ Merlin Gerin/ ABB MDS / BCH /Havells
23	UPS system	PCI LTD/ Siemens/ Etone powerware/Emerson/APC (Schneider)
24	Electronic Ballast	Philips/ Wipro/Osram / Bajaj

25	Ceiling fans	Crompton Greaves/ Bajaj/ Orient/ Alastom/ Usha
26	Main PC with CPU monitor	HP/ Compaq/Del
27	PVC Tape	Steel Grip
28	Batton Holder, Angle holder, Ceiling Rose	Anchor
29	Exhaust Fan with Gravity Louvers	Usha Lexus/Orient/ Crompton/Industrial- Almonard/ GEC
30	TV Cable- Co axial	Finolex, airtech, bhansali
31	Chemical Earthing	Ashlok, Erico, Pioneer, Nimbus, JK Earthing
32	LCD/LED Monitor	Sony, Panasonic, Samsung

LIST OF APPROVED MAKES AND MANUFACTURERS

The subcontractors/makes/brands of equipment listed below are approved for installation.

All items to be used in the works samples, catalogues and specifications are to be submitted by the contractor for approval of the Purchaser/HSCC. Only approved makes shall be used in the works. The approved samples shall be kept in the custody of the Purchaser/HSCC for comparison.

S.No	Material/Item	Approved Makes
1	Precision AC units	Emerson/Blue box/Stulz/Hiross
2	Window/split AC	Carrier /Hitachi/Voltas/Bluestar/Daikin/Ogeneral
3	VRV/VRF	Carrier /Hitachi/Daikin/Ogeneral
	Ducting & Grilles	
4	Factory fabricated duct	Zeco/ Ductofab/Rolastar/Technofab
5	G.I. Sheet Metal Duct	Jindal /National/ Tata/Sail
6	Spiral duct	Atco/Seven Star
7	Grilles/Diffusers/Volume Controller	Ravistar/Caryaire/ Mapro/Dynacraft/Airmaster
8	Fire Dampers UL listed	Caryaire/Dynacraft / Ravistar/Ruskin
9	Sound Attenuator	Caryaire/Dynacraft/Ravistar/Trox
10	G.I. Sheets	TATA/SAIL/Jindal/Bhushan Steel
11	Aluminium Sheets	Balco/Nalco/Hindalco
12	Stick Pins	Prima Seal/Air flow
	Pipes	
13	G.I.	ITC/ Jindal Hissar/Tata/SAIL/HSL
14	M.S. upto 150 mm	ITC/ Jindal Hissar/Tata/SAIL/HSL

15	M.S. 200 mm and above dia factory rolled	ITC/ Jindal Hissar/Tata/SAIL/HSL
	Valves	
16	Butterfly Valves	Advance/Audco
17	Motorised butterfly valve(actuator)	Belimo/Honeywell/Invensys/siemens
18	Non Return Valve	Advance/Kirloskar/Audco
19	Balancing Valves	Advance/Audco/Danfoss/Honeywell
20	Gate/Globe Valves	Leader/Divine/Sant/Bankim Sarkar /Zoloto
21	GM valve upto 40mm	Leader/Divine/Sant/Bankim Sarkar /Zoloto
22	Ball Valve with Y strainer	Rapid Control/Sant/Leader/Zoloto
23	Pressure independent Balancing valve	Danfoss/Flowcon/TA
	Accessories	
24	Y-strainer	Emerald/Sant/Rapid cool
25	Pressure Gauge	Fiebig/Emerald/H Guru/Japsin
26	Thermometer	Fiebig/Emerald/H Guru/Japsin
27	Flow Switch	Rapid Control/Anergy
28	Automatic Air Vent	Rapid Control/Anergy
29	Suction Guide	Anergy/ Rapid Control/Flowcon
30	Filters(pre,fine Hepa)	Thermadyne/Spectrum/Kirloskar /Anfilco/Johnflower/Dynafilter
	Insulation	
31	Expanded Polystyrene	Beardsell Ltd./ BASF/Styrene Packing/ Indian Packaging Industries/ Lloyd
32	Glass Wool	FGP Ltd./UP Twiga/Kimmco / Owens Corning
33	Polyurethane Foam	Malanpur /Superurethane
34	Crossed linked Polyethylene Foam	Trocellene / Aeroflex/Armacell/
35	Closed Cell Elastomeric Insulation	K-flex /Vedoflex/Armacell
36	Non woven fibre material	Mikron/ Du pont
37	Mineral wool	Rockwool India Pvt Ltd,
38	Pre-moulded PUF section for pipe & pipe supports	Malanpur/ Lloyd
39	Fibreglass rigid Board/Pipe section	FGP Ltd./UP Twiga/Kimmco / Owens Corning
40	Aluminium Tape	Johnson/Birla 3M/Garware
41	Thermostats	Honeywell/Johnson controls/Belimo/Danfoss/Siemens/Oventrop
42	Humidistat	Honeywell/Johnson control/ Belimo/Danfoss
	Miscellaneous	
43	V Belt	Dunlop/Fenner
44	Anchor fastners	Fischer/Hilti
45	Dash fastner	Fischer/Hilti
46	Welding rods	Advani/L&T
47	Wire Rope duct supporting	Gripple

	arrangement	
48	Flexible pipe connection	Dunlop/Kanwal/resistoflex
49	Hessian Cloth (fire rated)	Navair/Pyrogaurd
50	Vibration isolator	Resistoflex, Dunlup, Kanwal
51	Copper Refrigerant Piping	Diamond/Star/Rajco

**It is the vendors/suppliers responsibility to do the needful for installation, testing and commissioning of Medical Equipment as per terms and conditions of the Bid Document including Turnkey Works mentioned in the Bid Document.**

**Section - VII**  
**Technical Specifications**

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	<b>Technical Specification of 3.0 Tesla MRI System for New Emergency Block, Safdarjang Hospital, New Delhi.</b>
	<b>Quoted Model :</b>
	‘State of the art’ Whole Body 3.0 Tesla Magnetic Resonance Imaging System optimized for all body applications, including musculoskeletal, vascular, pediatric, hepatobiliary, abdominal, cardiac and neurological applications with super conducting magnet, high performance gradients and digital Radio Frequency System. The manufacturer/ bidder must quote the latest ‘state of the art’ 3 Tesla MR system as per the specifications below. Latest model to be quoted; If any new model in the same series with better specifications is launched in RSNA, then the same should be quoted. Model should be US-FDA approved.
	Please mention the year of launch of the quoted model/version/release offered. It should be latest RSNA November 2015 launch –or later. The manufacturer will guarantee the latest available version with latest hardware and software at the time of delivery. Future <b>software</b> upgrade should be provided free of cost for the next 10 years. The detailed specification that follows shall be understood to be minimum requirement.
	The offered model should be USFDA approved. Authentic and legible certificate for the same should be annexed.
	The scanner supplied should not have any refurbished/recycled parts/accessories.
<b>1</b>	<b>Magnet</b>
A	3.0 T active shielded super conductive magnet should be short and non-claustrophobic.
B	It should have at least 70 cm patient bore with flared opening.
C	Magnet length should be less than 200cm.
D	Homogeneity of the magnet should be better than 1.5 ppm at 40 cms (guaranteed homogeneity)
E	The magnet should be well ventilated and with in-bore illumination with built in 2 way intercom for communication with patient.
F	It should have a built in cryo-cooler such that helium consumption is minimized and does not exceed 0.05 litre/hour.
<b>G</b>	Specify hardware and software for acoustic noise reduction.
h	Active shielding/ Fringe field – quote values for 5 Gauss and 1 Gauss line.
i	External shielding – external interference shield (sufficient to house the magnet, anaesthesia and physiologic monitors) should be provided.
<b>2.</b>	<b>Shim System</b>
A	High performance, highly stable shim system with global and localized manual and automated shimming including 3D shimming for high homogeneity magnetic field for complete imaging, volume imaging & CSI and spectroscopy.
B	Auto shim should be available to shim the magnet with patient in position

<b>3</b>	<b>Gradient System</b>
A	Actively shielded Gradient system in X, Y, Z planes
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
E	Silent MRI” sequence package to be quoted as standard.
<b>4</b>	<b>RF System</b>
1.A	A fully digital RF system capable of Multi Transmission with 2 amplifiers of at least 15kW each or one amplifier of 30 kW, to reduce magnetic susceptibility artifacts.
1 B	In homogeneity correction should be possible. Vendor has to elaborate on technology used to improve organ specific the in homogeneity.
2.A	If the vendor has additionally technology like Zoom it/FOCUS or equivalent for selective excitation within a user specified FoV, the same should be quoted. True shape and true form or equivalent technology such as multi drive/multi transit 4D to be quoted.
B	It should also have at least 32 independent RF receiver channels “acquisition” with each having bandwidth of 1 MHz or more along with necessary hardware to support quadrature array / Matrix coils.
C	It should support Parallel acquisition techniques with a factor of 12 or more. Highest available PAT factor to be quoted.
D	Should allow remote selection of coils and or coil elements.
E	The operating frequency should cover 1H spectroscopy and P31 nucleus (for multinuclear spectroscopy 1H and P31)
<b>5</b>	<b>Patient Table</b>
A	Suitable patient table to be quoted which should be fully motorized with computer controlled table movements in vertical and horizontal directions.
B	A CCTV system with LCD display to observe the patient should be provided
C	Emergency manual traction of the subject from the magnet.
D	Table technology – (1) Bolus chasing with automatic/ continuous moving table should be offered and should be available with fluoro triggered MR angiography for manual and fast switchover in less than 1 second for CE-MRA
<b>6</b>	<b>Computer System /Image Processor Operator Console.</b>
A	The main Host computer should have a 19 inches or more high resolution LCD TFT color monitor with 1024 x 1024 matrix display. The system should have image storage capacity of 100 GB for at least 2,00,000 images in 256 x 256 matrix.
B	The Image reconstruction speed should be at least 1300 images/second or more for full FOV 256 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 1000 DVD along with the system. The system should be provided with auto DVD writer.
D	Patient monitoring devices for ECG, respiratory rate, pulse rate, O2 saturation

	at console.
<b>7</b>	<b>Measurement System</b>
A	Largest Field of View should be at least 45 cm or more higher will be preferred in all three axis. Specify the maximum and minimum FOV.
B	The measurement matrix should be from 128x128 to 1024x1024. Highest matrix available to be quoted.
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
<b>8</b>	<b>Coil System</b>
	The main body coil integrated to the magnet must be Quadrature/CP of the latest technology. In addition to the in-built body coil, following coils should be quoted. All coils (other than coils for exclusive spectroscopy, like surface coils) should be compatible for parallel acquisitions. The vendor should supply latest coil (with maximum channels and elements) with the best technology available with them at the time of tender submission.
I	Multichannel Head coil with 32 channels or more for EPI/DTI application.
li	Neuro-vascular Coil with 20 or more channels or Head / Neck Coil combined, capable of high resolution neuro-vascular imaging or combination of head & neck coil for similar coverage.
lii	Spine Array/Matrix Coil for thoracic and lumbar spine imaging with at least 32 channels acquisition per exam
Iv	Body Array/Matrix coil with at least 40 cm z axis coverage for imaging of abdomen, with at least 32 channels Acquisition for body part angiograms and heart. In case one coil cannot provide this coverage then multiple coils should be offered. (The best available body coil with the vendor must be supplied)
V	Dedicated peripheral vascular coil for angiography application of at least 32 channels Suitable surface / phased array coil for peripheral angiography application of at least 32 channels with coverage of minimum 80 cm, with single or combination of 2 coils. For Angio application if the coils offered are in combination it will be counted as 1 coil for the purpose of peripheral angiography.
Vi	Bilateral Breast Coil with at least 16 channels with fully functional spectroscopy.  Separate 4 channel laterally open breast coil should be provided for biopsy.
Vii	Dedicated Shoulder Coil- at least 8 Channel or more.
viii	Dedicated Knee Coil – at least 15 channels or more. If transmit receive coil is available the same should be quoted.
Ix	Dedicated Wrist Coil – 8 channels or more.
X	Flex Coil Large (2 quantity) – 4 channel Small (2 quantity)- 4 channel
Xi	Flex coil for pediatric and neonatal head and neck applications- 8 channels or more
Xii	Dedicated Ankle Coil with 16 channels or more.
<b>xiii</b>	<b>TOTAL COILS – 16 Nos.</b>
Xiv	For Storage of all coils a caddy to be provided.



Xv	The coil system should permit coverage of 200cm
	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.
<b>9</b>	<b>Application Package</b>
	Data acquisition:
I	The system should be capable of 2D and 3D acquisitions in conventional, fast and ultrafast spin echo and gradient echo modes so that real-time online images can be observed if needed. All the sequences that are available with the vendor at the time of quote/delivery should be provided as per their manual.
li	2D multi-slice imaging should be possible in all planes (axial, sagittal, coronal, oblique and double oblique)
lii	Up to 1024 x 1024 matrix acquisitions preferred for all applications
Iv	Half Fourier or other techniques to reduce scan acquisition time while maintaining adequate SNR
V	3D volume, multiple contiguous slabs, multiple interleaved and multiple overlapping slabs
Vi	Slice thickness in 2D and partition in 3D to be freely selectable
Vii	Dynamic acquisition (serial imaging) with capability to initiate scan sequences either from the magnet panel or from the console
viii	Dynamic acquisition: number of repeat scans with delay time either identical time interval or selectable
Ix	Auto slice positioning from the localizer images
X	Maximum-off center positioning both anterior-posterior and lateral direction and should be selectable
Xi	Gating: physiological signals like ECG, pulse, respiratory
Xii	External signal triggering (interface for triggering input pulse from external source). The provision should be available at the console also (for fMRI, EEG, etc.)
xiii	Simultaneous acquisition, processing and display of image data in 2D multi-slice mode.
Xiv	Selection of voxels from oblique slices should be possible while doing spectroscopy.
Xv	Artifact reduction/ imaging enhancement/ image filtering/ image subtraction/addition/multiplication/ division techniques:
xvi	Flow: 1 <sup>st</sup> and 2 <sup>nd</sup> order flow artifact compensation
xvii	Presentation slabs: a number of relocatable saturation bands to be placed either inside or outside the region of interest
xviii	Graphic prescription
Xix	Fat saturation techniques: frequency selective RF pulses to suppress fat signals in the measured image FOV. ROI selective (regional) fat suppression should also be given.
xx	Magnetization transfer saturation: Off resonance RF pulses to suppress signals from stationary tissue in FOV.
xxi	Phase contrast capability in 2D and 3D mode: Image intensity correction.

Xxii	Breath hold acquisition
xxiii	EPI mode
Xxiv	DTI with MDDW or equivalent with a minimum of 12 and selectable up to 64/256 direction encoding
xxv	Data acquisition in all three standard planes (axial, sagittal and coronal) and oblique and double oblique planes or more oblique planes
xxvi	Higher matrix acquisition capability in single shot EPI. Acquisition time, TR, TE and slice thickness should be clearly mentioned and supported by data sheet reference.
xxvii	The vendor should offer multi coil acquisition in order to optimize throughput increase and increased effective FOV. Individual acquisition elements of every coil should be mentioned.
<b>10.</b>	<b>Imaging pulse sequences:</b>
i	All standard and special pulse sequences available at the time of quote/delivery should be offered and quoted in the bid. Fat suppression for high quality images both inversion recovery and Dixon method/ IDEAL/ 3D Dual Echo/ m-Dixon. The system should acquire motion artifact free images in T2 studies of the brain in restless patients (Propeller, Multivane, Blade, etc.). Dynamic study for pre and post contrast scans and time intensity studies.
ii	The system should be capable of selecting TR and Tes as per requirement in majority of the pulse sequences.
iii	Spin echo (SE): multi-slice single echo, multi-slice multi-echo (8 echo or more), SE with symmetrical and asymmetrical echo intervals and fast spin echo. MT-SE imaging sequence.
iv	Inversion recovery (IR): including short T1 modified IRSE, FLAIR, DIR (Double inversion recovery).
v	Gradient echo (GE): with transverse gradient/ RF spoiling and transverse gradient rephrasing, e.g., GRASE or equivalent etc. 3D gradient echo with shortest TR and TE, free choice of angle selection, while maintaining SNR
vi	Fast sequences
vii	Fast spin echo and GE sequences in 2D and 3D mode with T1, T2 and PD contrast capable of acquiring maximum number of slices with a given TR at minimum TE, echo train should be at least 256 or more in fast spin echo mode
viii	Half Fourier acquisition capabilities should be available with/without diffusion gradients and in combination with fast spin echo
ix	Fast inversion recovery with spin echo
x	Fast gradient spin echo IR multi-slice multi-echo mode with maximum ETL. Sequences should incorporate RF focusing to acquire ultra-fast gradient spin echo
xi	Fast gradient echo sequences should incorporate RF spoiling and other technique to acquire images in ultra-fast 2D and 3D modes, gradient echo with ETL of 255 or more.
xii	Fat and water suppressed imaging sequences
xiii	EPI optimized sequences (with and without fat suppression) with ETL of 255 or more.
xiv	For T1, T2, PD imaging, perfusion, regular diffusion values (at least 5b, 3 directions) EPI-FLAIR, EPI-IR, EPI-FLAIR diffusion tensor, EPI-MT-FLAIR, tensor diffusion (at least 16 b values in minimum 32 directions) and diffusion studies. Suitable artifact/ fat suppression techniques to be incorporated in the

	sequence to have optimum image quality.
xv	There should be capability of calculating ADC map(isotropic and anisotropy from the regular diffusion and tensor data)
xvi	Optimized sequence package for special applications.
<b>11</b>	<b>Special application packages:</b>
	Please give details of licensees for acquisition post-processing and for special packages quoted for the following applications. All the software for functional MRI should be from same vendor.
<b>A.</b>	<b>Neuro Applications</b>
1	Functional MRI accessories and post-processing:
i)	Functional Imaging with package for BOLD Imaging and spectroscopic imaging and processing package capable of real-time processing and display of color overlay (in real time) using 32-channel head coil being supplied with the system.
ii)	Complete MRI solution including audio-visual projection system
iii	The audio-video projection system should have the capability to project movies to the subject, and should be compatible with the 32 channel head coil, and should include all attachments that may be required for complete integration
iv	The system should be integrated with stimulus presentation/ paradigm generator along with licensed software (like super lab, eprime, presentation, etc.) which is capable of presenting audio-visual, audio, video (multiple formats), etc.
v	The paradigm presentation should be synchronized with the scanner (for starting and ending along with measurements)
vi	Integration and provision near the console for external trigger (of the sequence) for synchronizing MRI acquisition with paradigm
vii	Post-processing work station / server with post-processing software and hardware associated, with licences for processing the BOLD data (with required licensed operating platform required like MATLAB, IDL, etc.)
viii	The entire MRI hardware package should be from a single vendor for complete integrated solution. Please specify the vendor.
2	2D/3D Arterial Spin labeling
3	Perfusion imaging of brain with software for rBV, CBV etc analysis.
4	Susceptibility weighted imaging with phase information (i.e. SW1/SWIp/eSWAN 2.0)/Venous BOLD Imaging
5	Multi Direction DTI with minimum of 32 directions. (Complete package including DTI quantification and tractography software). Prospective motion correction enabled software preferred. Spinal tractography should also be possible.
6	T2 Relaxometry and volumetric analysis for Hippocampus
7	3D-T2 weighted Turbo Spin for volumetric acquisition reconstructed in any plane e.g. for lumbar spine and for nerve root analysis
8	High resolution imaging for inner ear. Please specify sequences eg. CISS or equivalent

9	The system should have facility for flow quantification of CSF aqueduct, spinal canal, vessel flow. Both retrospective and prospective gating should be possible.
10	Whole spine imaging with fusion software.
11	Real time Brain Wave, Pre Acquisition / post processing or Inline BOLD or BOLD Specialist.
12	Sequences such as Double Inversion recovery for "Plaque Imaging" in Carotids to be provided.
13	MR ventriculography, cisternography, myelography
<b>B.</b>	<b>Cardiac applications:</b>
1	Advanced Cardiac Applications: ECG 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. Myocardial tagging, STIR for cardiac use, stress perfusion, 3D acquisition of whole heart in one breath hold. Complete cardiac evaluation package to be included on the workstation, besides the main console.
2.	T1, T2, T2* quantification tools for evaluation in real time with automated guidance
<b>C.</b>	<b>Musculoskeletal:</b>
1	High resolution imaging for cartilage and musculoskeletal imaging. Parametric MAP be available. dGEMERIC or equivalent, radial imaging for menisci and labrum
2	The system should have software package for evaluation of bone marrow.
3	Whole body screening imaging studies for metastasis.
<b>D.</b>	<b>Hepatobiliary and abdominal system.</b>
1	High resolution Abdominal and Liver imaging in breath hold and free breathing modes with respiratory triggered volume acquisitions with navigation, liver iron quantification and liver fat quantification software, and spectroscopy
2	The system should have basic and advanced MRCP packages including free breathing and 3D techniques.
<b>E.</b>	<b>Vascular Imaging</b>
1	MR angio Imaging Should have 2D/3D TOF, 2D/3D Phase contrast (with and without gating and magnetization transfer saturation), black blood angiography for cerebral, pulmonary, abdominal and peripheral vessels and TONE, ceMRA, Facilities for high temporal and high resolution 4D angio imaging for time resolved vascular imaging with imaging frame of 40 frames/sec or more.
2	Bolus chasing with automatic and manual triggering from fluoroscopy mode to 3D acquisition mode with moving table facility for whole body application. Specify table movement. Inline subtraction should be available.

3	Non contrast enhanced peripheral angiography for arterial flow with Native/Trance/inhance sequences.
4	Time resolved angiography with contrast kinetics like 4D TRACKS/ 4D BLISS/Ktblast / TRICKS /TWIST or equivalent
5	Perfusion study in organ systems like kidney, brain, heart etc. with T1 perfusion with permeability maps, and quantification of rCBF/ rCBV, MTT, etc, with color maps.
<b>F</b>	<b>Breast Imaging:</b>
i)	Advance package including diffusion, spectroscopy and perfusion with time intensity curve.
<b>G</b>	Diffusion Weighted Imaging.
i)	With at least b value of 7000 or more. Whole body diffusion weighted imaging with background suppression
<b>H</b>	<b>Spectroscopy:</b>
i)	The system should have the Hydrogen, Single Voxel spectroscopy, Multivoxel, Multislice & Multi-angle 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 and the workstation and each of the five clients. Complete prostate, breast, liver spectroscopy hardware and applications should be provided. Spectroscopy phantom for important short echo time neurometabolites, breast and prostate Water and lipid suppression in automated sequences.
<b>I.</b>	<b>Prostate Imaging</b>
i)	With Parametric cards (Ktrans, Kep, Ve, Vp)- quote.
<b>J</b>	Workflow improvement Techniques with capability of automatic planning and scanning, post processing for different body parts.
<b>12</b>	<b>MR elastography quoted as standard.</b>
13	TIM whole body suite. Any other hardware, software application packages with the tender to be quoted as standard.
14	Additional workstation:
i)	Client server architecture-server with 3 concurrent clients (Dexus, Intelligence Portal, Syngo.via, etc. or higher) capable of rendering <b>20000</b> images at peak performance. Workstation hardware should be industry standards, and should be the latest with the vendors, as per their globally launched product catalogue.
<b>A</b>	A Server workstation with preferably the same user interface as of main console is required with the availability of all necessary software including.
i	Basic post-processing software including MIP, MPR, surface reconstruction and volume rendering technique, Image fusion , 3D evaluation on all <b>three</b> concurrent clients.

ii	Advanced post-processing offered applications including f MRI, perfusion quantification, advanced diffusion and DTI, advanced cardiac evaluation(EF, Calculation, Wall motions, analysis) including perfusion analysis, processing of 2D/3D CSI data, with color metabolite mapping, quantification of CSF flow data, vascular analysis package on at least two clients concurrently.
iii	The system should support the DICOM print service class as a service class user (SCU)
iv	Workstations support the DICOM query and Retrieve SCU
V	Workstation should retrieve MR spectroscopy images.
B	Desktops with i7 , 6 <sup>th</sup> generation , Intel Processor , 8 GB DDR3 RAM, 500 GB SSD (Solid state Drives) 1 TB HDD 24” LED Medical Grade Monitor – Total <b>three</b> Clients Each of the client should enable printing in laser film camera and color printers. Total <b>three</b> client hardware and software to be provided.
C	The offered System is to be networked with the then existing “Department Network” including PACS. Appropriate anti-virus protection to be provided by the Vendor. The vendor should provide picture storage and archival system, to store and retrieve MR images
D	The system should have DICOM 3.0 compliant interface and enabled for networking connectivity to Linux/ Windows based servers/ clients with patient ID labeling and integration to generic hospital information system/ PACS
<b>15</b>	<b>Safety Features</b>
	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
<b>16</b>	<b>Optional items Price not to be included for calculation of L1 of optional items 16 A(i) &amp; (ii) &amp; 16 (B) given below.</b>
	A. Multi Nuclear Spectroscopy: Facility of P31 Imaging & spectroscopy to be provided with i) Double tuned head coil for brain and ii) suitable surface coil for body imaging.  B. Dedicated coil for pediatric and neonatal head and neck applications- 8 channels or more
<b>17</b>	<b>Accessories</b>

A	DICOM compatible Dry Chemistry laser camera (2 No.s) with integrated processor for filming from main console & workstation. The camera should be capable of printing on films of 14" x 17", 11" x 14" and 10" x 8" sizes in a resolution of 600 or more dpi. It should be possible to connect other imaging modalities to the printer. 2000 compatible films to be provided. Films to be provided after installation as and when required by the user. Main equipment (MRI) in the emergency block to be networked with cameras of CT and DRF camera in the emergency block
B	A color laser printer for printing high-resolution color-coded 3D images and protocols on plain paper in 1200 dpi resolution or more than 20 ppm or alternatively a dedicated color printer for medical images
C	The UPS system should be provided for complete MRI unit with Chiller and emergency lights with at least 30 minute back up, preferably 150 kVA or more (specify kVA). An emergency door or hatch should be provided in RF cabin.
D	RF Cabin: The system should be supplied with the imported RF cabin with RF room shielding, RF Door screen, and interiors for the same should be carried out suitably.
E	Dual Head MRI-Compatible Pressure Injector, FDA approved (minimum 2000 Gauss line) with 1000 sets of syringes (Two syringes & connecting tubing per set). It should be compatible with 50 ml syringes for both saline and contrast.
F	Non-magnetic I/V stand
G	Water Chiller for Cold Head and Gradients
H	Two Non-ferromagnetic MR compatible patient transfer trolleys should be globally reputed make
I	Fire Fighting System, Detectors and 6 Fire Extinguishers (MR Compatible)
J	Hand held metal detectors - 2 Nos
K	Closed circuit CCD camera for patient observation.
L	Phantoms for image quality audits
M	Defibrillator Biphasic with ECG recording with Adult and Paediatric paddles
N	MR Compatible Infusion Pump (2000 Gauss Line)
O	Patient positioning accessories with hand held alarm & look-out mirror.
P	MR Compatible Transport Ventilator. (1000 Gauss Line)
Q	Three desktops with i7 , 6th generation Intel Processor , 8 GB DDR3 RAM, 500 GB SSD (Solid state Drives) 1 TB HDD 24" LED Medical Grade Monitor with three laser Printers of 600 dpi, UPS & Dictaphone
R	SPECIFICATION FOR MRI COMPATIBLE ANAESTHESIA MACHINE (1000 Gauss Line) & MRI COMPATIBLE MONITOR or (1000 Gauss Line)
	MRI COMPATIBLE ANAESTHESIA MACHINE SPECIFICATIONS: (Minimum 1000 Gauss Line)

A	Should be MRI compatible at 3T, antistatic, heavy frame & base with good quality castors with front brakes, with following features
I	Three gas model viz Oxygen, Nitrous oxide and Air.
ii	Should be compact, ergonomic, easy to use and easy to maintain.
iii	. Should have separate fresh gas outlet for use in open circuit.
iv	. Machine should have flow meters for Oxygen, Nitrous oxide and air. Emergency Oxygen flush should be available. There should be facility to select oxygen-air or oxygen-nitrous oxide with the help of a separate switch or knob.
v	Dual flow sensing capability at inhalation and exhalation ports.
vi	Should have paramagnetic/ galvanic cell oxygen sensors. In case of galvanic cell sensors, the firm should supply free sensors for the entire warranty period of 5 years. In case of Paramagnetic sensors, the firm shall ensure that there is no down time during repair of these sensors (if necessary) and provide a standby alternative.
vii	. Shall have back-up Oxygen Control which provides an independent fresh gas source and flow meter control in case of failure.
viii	Pressure regulators shall be of modular design.
ix	Should have oxygen fail safe device & an auxiliary built in oxygen flow meter.
x	Electronic or Mechanical Hypoxic Guard to ensure minimum 25% Oxygen across all O <sub>2</sub> -N <sub>2</sub> O mixtures and Oxygen Failure Warning.
	Vaporizers:
xi	Facility of mounting minimum two Vaporizers, latest technology , key filler, selectatec type, tool free installation ,meaning any vaporizer of our choice can be mounted at will with interlocking facility.It should be preferably of the same make as that of machine.
xii	Temperature ,pressure and flow compensated with high accuracy of delivered concentration of volatile anesthetic agent. Should be maintenance free.
xiii	Two Vaporizers should be supplied (Desflurane ,Sevoflurane).
	Ventilators:
xiv	The Machine should have an Integrated Anesthesia Ventilator System, facility to vary respiratory parameters and should be able to ventilate adult and Pediatric patients including infants.
xv	Ventilator should have Controlled ,Manual, Spontaneous modes and provision for PEEP.
xvi	Tidal volume (inspired and expired) respiratory rate ,1 :E ratio, minute volume Airway pressure & FiO <sub>2</sub> should be continuously displayed.



xvii	Should have Tidal volume and fresh gas compensation mechanism.
xviii	Audio-visual alarms for high and low settings of Pressure, volume and disconnection should be present.
xix	Tidal Volume (VT) 20-1500ml (Volume Control) ,Rate atleast 4-80 BPM.
xx	Inspiratory / Expiratory ratio (I :E) 2:1 to 1:6 & Peak Flow -100 to 120
xxi	Ventilator should have at least 30min rechargeable battery backup for ventilator.
xxii	Machine should have an integrated breathing circuit with circle absorber of good quality, easy to clean, autoclavable , fewer parts to reduce leaks.
xxiii	Machine should have mounting capability of One O2 and one N2O pin-indexed cylinder
xxiv	Adult autoclavable (2 sets) breathing circuits & one paediatric circuit to be provided.
xxv	The Machine should be equipped with AGSS.
B)	MRI COMPATIBLE MONITOR (Minimum 2000 Gauss Line)
	<b>Specifications for MRI compatibility:</b>
i	Monitor should be equipped with MRI shielding and set to Remote Communication Mode.
ii	Should be MRI compatible (Safe will not be acceptable) at 1000 Gauss, 3.0 Tesla and 4W/Kg SAR.
iii	System should include fiber-optic SPO2 finger sensor, MRI compatible ECG Patient Leads and Electrodes, NIBP cuffs, hoses and etCO2 sampling kit and temperature probe.
	<b>General Specifications for Monitor:</b>
i	The Monitor should have adult and neonatal application and should be user friendly.
ii	It should be capable of monitoring ECG, non-invasive blood pressure ,oxygen saturation (SpO2) ,ETCO2 and temperature.
iii	. It should have an internal battery which should last for 30-40 min.
iv	It should be operational at wide temperature (10 degree Celsius – 40 degree Celsius) and humidity (20% to 90%).
v	It should have a facility of 24hours data storage of trended parameters and trend graph of 1,2,3,6,12 or 24 hours display format.
vi	Should have a facility to deactivate all the alarms if necessary.
	<b>ECG Monitoring: Essential Specification:</b>

i	Available leads : I,II,III,V,AVR,AVL,AVF with facility for recording 12 lead ECG.
ii	Should display one or all the selected leads at a time.
iii	Accuracy of +- 5% of the rate.
iv	Monitor Mode : Digital Signal Processing (DSP).
v	T-Wave suppression for high field MRI.
vi	Heart rate measuring ranges 15-300 beats/min. Should have arrhythmia monitoring facility.
vii	Should have user selectable alarms.
viii	<b>Pulse Oximeter (SPO2):</b>
i	Should provide a digital value of the arterial oxygen saturation as well as diagnostic plethysmographic pulse waveform.
ii	Measurement range : 0% to100%.
iii	User Selectable upper and lower alarm limits.
iv	Probes with finger and ear sensors for adult, paediatric and neonatal use.
v	Should be sensitive and function accurately even at low perfusion states of low blood pressure or hypothermic conditions.
	<b>ETCO2 Monitoring:</b>
i	Should have side stream Carbon di-oxide module and display both graphically and numerically.
ii	Single beam ,non-dispersive infrared (NDIR) absorption, radiometric measurement, no moving parts.
iii	. Initialization time less than 10 seconds, full specifications within 1-2minutes.
iv	Carbon di-oxide range should be 0 to152 mm Hg barometric pressure supplied by module itself.
v	Should be able to detect breath rate in the range of 2-150 BPM.
vi	Respiratory rate accuracy should be + 1 breath.
vii	Barometric Pressure auto compensated from 400mm Hg to 850mm Hg.Operator selectable O2, N2O,He and Agent Compensation.
viii	. No routine user calibration required. An offset calibration should run automatically when the ambient temperature is not stable.
ix	Sampling line should have both nasal sampling line and extension sampling line.
x	Warm up time 10seconds.
	<b>Temperature Monitoring:</b>
i	Measuring range: 5 to 50 degree Celsius.
ii	Accuracy + 0.1 degree Celsius.
iii	User Selectable upper and lower limit of alarm.
iv	Core and skin probes.

	<b>Non-Invasive Blood Pressure (NIBP) monitoring:</b>
i	Should automatically sense infant / adult cuffs and set appropriate inflation pressure and safety limits.
ii	Operating Modes : Automatic ,Manual ,Stat.
iii	Accessories ,NIBP cuff :
	1 Adult for thigh and arm.
	2 Paediatric
	3 Neonatal
18.	<b>Additional Accessories:-</b> “Metal detector walk through gate for zone IV with multiple sensors and multiple metal location LED display lights 20 or more. The above said gate should be installed on the zone IV door frame for both in swing as well as out swing door”.
<b>19.</b>	<b>Guarantee</b>
	Principals and Indian counterpart. The Principals should be responsible for any lacuna or deficit in service or supply.
I	All items in the supply order should be supplied during the time of installation, No exceptions will be allowed .Items under Research .Agreement should be finalized well in advance (after receipt of supply order). So that there is no delay in delivery of software or coil or any other accessories.
II	Software updates (where hardware upgrades are not required )like new pulse sequence, new application package etc. should be provided within one month after release worldwide (any country,viz. north America/ Europe/Germany etc).In case, the same is not provided in time, the parent company should undertake the responsibility to implement the same. This is to make sure that the machine stays updated with similar products for at least 10 years.
<b>20</b>	<b>WARRANTY PERIOD</b>
I	The entire equipment should have 60 months warranty from the date of handing over the fully functional unit. This should include all coils, ALL the accessories and consumables and all third party items and turnkey projects provided to the hospital. The Helium Supply and cold head repairs (including replacement) should also be included in the warranty period.
ii	Even during the warranty period, the desired uptime of 98% of 365 days (24 hrs basis) will be ensured. In case the down time exceed the 2% limit, extension of the warranty period will be twice the excess downtime period
lii	Any Liquid Helium due to quenching or due to any other causes during the warranty period shall be borne by the firm.
iv	If any particular coil is not working resulting in non functioning of a particular clinical application for more than 3 days it will be considered as downtime .
<b>21</b>	<b>POST WARRANTY ANNUAL COMPREHENSIVE MAINTENANCE CONTRACT (CMC)</b>

I	The post –warranty (after 5 years) CMC rate quoted for next 5 years should include maintenance of entire equipment, all coils, ALL the accessories and consumables and all third party items and turnkey projects provided to the hospital. The Helium Supply and cold head repairs including replacement should also be included in CMC. This CMC should be quoted in Indian Rupees.
	<b>The price of post warranty 5 years CMC shall be taken for price comparison.</b>
ii	The desired up-time during post-warranty CMC is 98% of 365 days (24 hr basis) along with the penalty clause that in case exceeds the 2 % limit, extension of the post warranty CMC period by the twice the excess down-time period.
iii	The rate of post-warranty comprehensive CMC should be offered for at least five years by the bidder and be offered in Indian Rupees only.
iv	Note any liquid helium due to quenching or due to any other causes during the CMC period shall be borne by the firm.
V	If a particular coil is not working resulting in non working of a particular clinical application for more than 3 days will be considered as downtime
vi	All local items should be quoted in Indian Rupees. Other items should be quoted in US Dollars only, to have uniformity. The technical and financial bids should be separate. The model with 'the best and latest technical features' available with the vendor should be quoted in tender response with original printed vendor data sheets. The system should incorporate all the features as per the November 2015 RSNA standards/declaration.
vii	All product catalogues in original.
viii	When the vendor data sheet disagrees with the bid response, clarification should accompany in the form of letter/certificates from the principals in original.
ix	System should be DICOM - 3MPPS & should be ready to integrate with any existing PACS/HIS System
x	List of all installations of the system in the country
xi	The compliance statement must be filled strictly under headings given in the tender.
xii	Each specification corroborated in the compliance statement must give the page number where it is listed in the original technical data sheet along with soft copy. The technical bid should clearly mention model number and make, detailed technical specifications, quantity of each component offered. the technical bid should be duly supported by original brochure/catalogue of the manufacturer and relevant parts proposed to be supplied highlighted. In compliance statement units of measurement used should be same as in the required technical specifications.
xiii	There should be no discrepancy between specifications given in technical bid, brochure and compliance statement. In case of any such discrepancy, the technical bid will be disqualified.

xiv	The quotation should clearly mention the accessories (including quantity) which are part of the main equipment and the price of which is included in the main equipment.
Xv	The equipment should be fully functional with the standard accessories
<b>22</b>	<b>Training :</b>
1	On-site training of all faculty members & radiographers.
2	On-site training for radiographers and other staff by an application expert for a period of at least 3 months
3	One on site service engineer and one on site application specialist to be available for a uninterrupted continuously break period of two months with the team of both engineers will maintain log book of training provided to technical staff & doctors
<b>23</b>	<b>Turnkey Works For 3 Tesla MRI Unit</b>
i	The layout plans (with dimensions) allocated uploaded. Air-conditioning of appropriate strength/capacity (tonnage) in the area as required shall be done. Additional standby split air conditioner(s) of appropriate strength/capacity (tonnage) to be fixed in the main equipment rooms.
ii	Civil work: In the civil works Modifications/Renovations in the existing rooms by the supplier/vendor as shown in the layout plan after approval by Purchaser/HSCC shall be executed as per approved makes specified.
iii	The walls of MRI Complex should be finished acrylic/plastic emulsion (approved makes) and should be finished with vitrified tiles (approved makes) up to five feet height from the floor. Colour as approved by Purchaser/HSCC shall be provided.
iv	The flooring in the MRI complex should be as per regulations. Flooring in all rooms shall be of vitrified tiles of 80 x 80cm size or other close appropriate size of reputed makes (approved makes). Colour as approved by Purchaser/HSCC shall be provided.
v	Whole area of MRI Complex as in the layout plan shall be finished with fire resistant false ceiling material (approved makes). MRI Room PVC roll flooring with mineral fiber panel false ceiling and Aluminium suspension.
vi	All the doors should be provided with necessary fittings with hydraulic type door closures (approved makes) and with Mortised locks (approved makes).
vii	Electrical work: The firm is required to specify load requirement i.e. required for the unit, the air conditioning, room lighting and accessories, if any. The electrical works should be as per approved makes mentioned. The electrical works should have minimum two separate Earthing with copper plate is to be provided for the each equipment and air-conditioning equipment as per equipment requirements. The use of earth leakage circuit breaker will be as required.
viii	A distribution panel of appropriate capacity is to be provided by hospital. The load shall also be provided by the hospital. From the substation of the hospital to the distribution panel, cable of appropriate size shall be provided & fixed by the hospital. Vendor shall do cabling from distribution panel up to the