HSCC/SES/MOT/AIIMS-TRAUMA/2015 Dated: 11.05.2016

**All Bidders**

## Amendment -V

**Subject: Construction of Modular Operation Theatres (MOT) & Assosiates works including Turn Keys Works at Jai Prakash Narayan AIIMS Trauma Centre, New Delhi.**

**IFB No. : HSCC/SES/MOT/AIIMS-TRAUMA/2015**

## MOT AIIMS TRAUMA BIDDERS QUERY

| Sr. No. | Bidder's Query | Clarification/Amendment |
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| **1.** | **Existing Clause of the Tender**<br>**Volume-I, Pre-Qualification Documents; Prequalification Criteria, Clause no. 2.2**<br><br>**(ii)** Experience of having successfully completed similar work during last 7 years ending last day of month previous to the one in which tenders are invited should be either of the following :<br><br>Three similar* completed works costing not less than the amount equal to 40% of the estimated cost.<br>or<br>Two similar* completed works costing not less than the amount equal to 50% of the estimated cost.<br>or<br>One similar* completed work costing not less than the amount equal to 80% of the estimated cost.<br><br>One completed work of any nature (either part of 2.2,(ii) or separate one costing not less than the amount equal to 40% to the estimated cost with some Central/State Government organisation/Central Autonomous body/Central Public Sector Undertaking.<br><br>***Similar nature of works means supply, installation, testing & commissioning of Modular Operation Theatres (MOT) & Associated Works.**<br><br>**Requested**<br><br>"In case, the qualifying experience certificate is from Private | Tender Terms & Conditions prevails. |

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| | sector/ Charitable Hospital, the vendor should submit the TDS certificate as a proof of having executed the said work." The TDS certificate of same value as supporting document will prove the authentication of Private work completed.<br><br>We request that TDS Certificate should be asked for the justification of the actual value of the order declared against the experience of similar nature of work. | |
| **2.** | **Existing Clause of the Tender**<br>**Pre-Qualification Criteria, 2.2 (ii), 4th Paragraph**<br><br>A Certificate from client for completion of work(s) must be submitted along with application. Own works/ Certification of agencies shall not be considered for prequalification.<br><br>**Request**<br><br>Please appreciate 99% of the tenders are floated by the Tender empowering Agencies. Complete work right from tendering, evaluation, award of work and till completion and commissioning of work the same is being looked after by agencies such as M/s HLL, M/s HSCC, M/s EIL, M/s Mecon, M/s PWD, M/s CPWD, M/s L&T, V3S etc. Hence the completion certificate is also provided by the consultants, which is itself Authority to issue completion certificate on behalf of the owner. Hence this clause may please be amended as certificate of agencies should be acceptable. | Tender Terms & Conditions prevails. |
| **3.** | **Existing Clause of the Tender Document**<br>**Volume-III, Page no. GCC – Page # 47 Clause no. 54.3 Customs Clearance**<br><br>The Employer will use his best endeavours in assisting the Contractor, where required, in obtaining clearance through the Customs of Contractor's Equipment, materials and other things required for the Works. But the ultimate responsibility for getting any required customs clearance shall be of the contractor.<br><br>**Requested**<br><br>As discussed during pre-bid meeting, kindly clarify the Custom Duty Exemption Certificate will be provided by the Institute or not. | Tender Terms & Conditions prevails. |

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| **4.** | **<u>Existing Clause of the Tender Document</u>**<br>**<u>Volume-III, Page no. SCC-9, Clause no. 1.5 Time for Completion</u>**<br><br>The successful Bidder shall complete the Works within 4(Months) **Calendar months** from Consultant's order to commence the Work.<br><br>**<u>Requested</u>**<br><br>We request the Delivery Schedule may please be amended as 6 (Month) Calendar months instead of 4 (Four) Calendar months as mentioned. You would appreciate that this is a Big Project and arranging such a quantity of material takes lot of time and resources. The manufacturing itself takes 2 months and subsequently the shipment/transaction also takes minimum of 2 months time.<br><br>How we can meet the 4 months delivery schedule. This is a project and not mere supply of equipments which is a tedious job and involve lot of stages and most of the items like wall ceiling, OT Pendants are tailor made items and some of them are imported for which procurement only starts after approval of final drawing which is a time consuming process. | Completion period may be read as 6 months as against 4 months. |
| **5.** | **<u>Existing Clause of the Tender Document</u>**<br>**<u>Volume III, Special Conditions of Contract, Page no. SCC-39, Clause no. 21.0 Terms of Payment</u>**<br><br>For purposes of estimating the contract value of works executed for certificate of payment, the following norms shall be followed:<br><br>1) 65 % of the BOQ contract rates on delivery of equipments at site after inspection and passing on pro-data basis.<br><br>2) 25% of BOQ contract rates on satisfactory take over certificate by client after erection and installation, testing and commissioning of equipments on pro-data basis.<br><br>3) 10 % of BOQ contract rates after successful completion of trial run of 30 days from the date of handover to the client.<br>**<u>Requested</u>**<br><br>We request, the payment terms should be ;<br><br>- 70% of payment should be released on delivery of goods. | Payment terms may be read as<br><br>- 70% of payment on delivery of equipments at site after inspection and passing on pro-rata basis.<br><br>- 20% of payment on installation, testing and commissioning on pro rata basis.<br><br>- 10% payment on satisfactory handover to AIIMS Trauma. |

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| | - 20% of payment may please be released on installation and testing.<br><br>- 10% payment on commissioning and successful testing and handover. | |
| **6.** | **<u>Existing Clause of the Tender Document</u>**<br>**<u>Volume V, Bill of Quantities (BOQ), Existing BOQ Item, 2</u>**<br><br>Part III : Operations and Comprehensive Maintenance Charges for the complete Modular Operation Theatre.<br><br>**<u>Requested</u>**<br><br>We request the Operations and Comprehensive Maintenance Charges (CMC) should be separate, as both are different things and accordingly the price should also be asked separately. Therefore Kindly delete Operation (24x7) in Part III which is added along with Comprehensive Maintenance Charges.<br><br>Secondly, we request the Comprehensive Maintenance Charges (CMC) should be fixed/freezed. After the defect liability period, we have come across in many tenders that the bidders play with the main prices i.e. they add the CMC charges in main price bid itself and when the turn comes of CMC they raise their hands. In many states for example Rajasthan, Maharashtra etc they have fixed the Annual Maintenance Charges as 2% and Comprehensive Maintenance Charges as 4%. By doing this, apple to apple comparison of tender can be evaluated.<br><br>Thirdly, we request the Comprehensive Maintenance Charges (CMC) should be the responsibility of the Company who has executed the entire work. We have come across that this part of the tender is outsourced to other company. Kindly ensure that same should not happen. | Operation of AHUs only required to be provided (Revised BOQ including operation of AHUs for OTs) by the contractor. Details of AHUs given in specification.<br><br>Tender Terms & Conditions prevails for balanced queries. |
| **7.** | **<u>Existing Clause of the Tender Document</u>**<br>**<u>Detailed Tender Information, Last date to fill/upload the tender through e-tendering</u>**<br><br>As mentioned, the Last date to fill/upload the tender through e-tendering is 30.03.2016, 14.30 hrs. Since this is a big and prestigious tender and most of the items are imported subsequently lot of clarifications/confirmations on technical specifications are required from foreign principals. | Last date of bid submission is extended till 26.05.2016. |

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| | Please appreciate after the pre-bid meet held on 23.03.2016 and subsequently the bidders will submit their Technical & Commercial Clarifications/suggestions.<br><br>We sincerely request M/s HSCC to kindly provide us minimum of 15 days after Final Amendment of Tender to incorporate all the changes/amendments, enabling us to prepare and submit Competitive bid. Accordingly we request the tender may please be extended. | |
| | **Technical Suggestion Volume IV of Technical Specifications** | |
| 8. | **Page no. 2, Technical Specification 1.**<br>**WALL & CEILING SYSTEM:**<br>**Steel Structure:** The Framework should be made of upright profiles entirely made of a galvanized steel sheet of suitable thickness. The structural steels shall have suitable section for rigidity and bearing the loads. The structure components should be joined together by means of coupling systems in order to create a solid rectangular frame, able to support different infill panels.<br>The "Z"/"C"/"I" suitable upright forms the vertical part of the frame and should be equipped with proper slot suitable for the panel coupling without screws.The profile should be the elements that constitute the basic module of the structure. The "U" profiles shall be placed in horizontal position on the upper and lower part of this structure. "U" shaped upper and lower extruded aluminium track profile should be suitably sized to support the weight of the self-loading modules.<br>. The bottom "U" track profile should be prearranged to receive a pressed skirting profile or, optionally, an integral cove profile. The "U" track profile should be prearranged to accommodate a double set of balloon seals designed to ensure airtight compartment and compensate for screed/floor level differences.<br>The upright should be fitted in such a way as to accommodate click-fitting of a co-extruded upright gasket providing a vertical seal on the rear sides of the finishing panels. The gasket should be profiled in turn to receive, with click-fit system.<br>The front of the upright features a series of regularly spaced slots to allow the connection with interlocking gravity system of the finishing panels, after vertical level adjustment. The lower part of the system should be able to compensate for significant level differences and overcome imperfections and irregularities in the slab/floor. Spacer profile should be used to absorb level differences of the slab/floor and capable of connecting the finishing panel to the integral cove profile (if | This specification for Wall & Ceiling system is not for AIIMS Trauma |

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| | present), allowing the subsequent installation of resilient flooring with suitable upward curvature up to a nominal level of **100 mm.**<br><br>**<u>Suggestion</u>**<br><br>**Wall & Ceiling System : It should be European CE Marked/UL Listed for quality assurance.**<br>**Steel Structure:-** The structure components should be joined together by means of coupling systems in order to create a solid frame, able to support different infill panels <u>with a load not less than 20 Kg/sqm.</u><br>The profile should be the elements that constitute the basic module of the structure. The "U" profiles shall be placed in horizontal position on the upper and lower part of this structure. "U" shaped upper **<u>and lower galvanized steel sheet profile should be suitably</u>** sized to support the weight of the self-loading modules.<br>The structure shall be provided with stiffening ledgers or profiles for sliding door fixing and other accessories according to needs. Total thickness of the partition **<u>wall:80 mm</u>**<br>**<u>The corners shall be made with same material of other walls and structure. The corners shall have a shape of 135° refer to the adjacent wall and must be fixed with same system. Corners should have two air extraction greed down and upper side of 135° wall.</u>**<br>Suspended ceiling perimeter support profile should be made of aluminium profile to be fitted, after installation of the finishing panels, the suspended ceiling perimeter support profile should be equipped **<u>with a sealing system:</u>** a lip seal gasket at the base, designed to provide horizontal compartmentalization at the rear of the **<u>finishing panels.</u>** | Tender terms prevail |
| 9. | **Page 3, Technical Specification**<br>**b. Wall System**<br>The wall system should be based on a technological modular unit designed to clad and to divide interior space in controlled bacteria environments in a flexible and functional manner.<br>The outer surface of a wall surface should be created with high –tech materials such as either Solid Mineral Composite Sheet.<br>System should offer total ease of cleaning and sanitization of the partitions should have no corners, adjacent surfaces should be molded flush by means of connecting elements. System should afford the maximum versatility at the planning stage and flexibility during erection, ensuring openness to future alternations and trouble –free maintenance. During the installation of first the structural parts and subsequently the finishing elements, the system | |

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| | should ensure perfect integration of technical networks and allow ample operational flexibility on the construction site.<br>The clean, dry installation method should enable optimum programming of the various work phases, allowing optimization of the installation of technical systems and any necessary alterations to be made – right up to checking and final testing of the installed systems – before the modules are sealed.<br>System should comprise of:<br>i) Sub frame;<br>ii) Wall panels<br>iii) Sealing gaskets.<br>System should assure the maximum independence from the surrounding environment because it should be composed of a sub frame made of section bars specifically manufactured for the loading structure and designed to create the necessary technical voids to house utility networks and pipe/cable drops.<br><br>**<u>Suggestion</u>**<br><br>B. Wall System.<br>The outer surface of a wall surface should be created with high-tech materials such as either Acylic Bound Solid Surface Material Sheet, or in alternative any other solution that can guaranty solidity, material´s compact property which makes it suitable for long lasting use, easy to clean, chemically stable and warm to the touch. | Tender terms prevail |
| 10. | **Page 3, Technical Specification**<br>**c. Sub frame**<br>**Horizontal guides** (upper and lower) sized to support the modules and prearranged for the future attachment of the curved connecting profile.<br>**Upright** made of galvanized steel pillars with broad cross section and dual cavity, with geometry designed to achieve exceptional rigidity.<br>The upright should be shaped in order to accommodate a vertical gasket.<br>The upright features a series of slots arranged at a constant centre distance to accept the sealing gaskets and allow the suspension of partition panels by means of a gravity interlocking system.<br>**A mechanical device** for connection between upright and horizontal profiles makes it possible to adjust and secure the profiles, ensuring the maximum rigidity and self-loading capacity of the system. This uprights level adjustment system makes it possible to compensate for floor level differences. | |

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| | **Suggestion**<br><br>**C. Sub Frame**<br>Horizontal guides (upper and lower) sized to support the complete structure and prearranged for the attachment of the upright unit.<br><br>**Upright** made of galvanized steel pillars with broad cross section and dual cavity, with geometry designed to achieve exceptional rigidity. The galvanization procedure must be made after mechanical and cutting work are made, in order to avoid any possible surface, even small, not coated that can be oxidide.<br><br>**A mechanical device** for connection between upright and horizontal profiles makes it possible to adjust and secure the profiles, ensuring the maximum rigidity and self-loading capacity of the system. This uprights level adjustment system make it possible to compensate for floor level differences. | Tender terms prevail |
| 11. | **Page 4, Technical Specification**<br>**d. Wall panels:**<br>Cladding shall be with composite panels the finishing of which should be either in Solid Mineral Composite Sheet.<br>● External facing should be bacteriostatic, dense and non-porous material<br>● The panel should be made of a durable and uniform material that should be easy to clean and extremely hygienic.<br>● Internal balancing core with suitable geometry to ensure the maximum rigidity.<br>● The total thickness of panel should not be less than 18mm.<br>● Panels should be resistant to water and detergents normally used in hospital.<br>● Reaction to fire class 1 norm.<br>In order to create a smooth uninterrupted surface between adjacent panels, thereby preventing the risk of the accumulation of dust and bacteria in gaps, the panel should be produced in a single full height floor-to ceiling piece.<br><br>**<u>Suggestion</u>**<br><br>**D. Wall Panels.**<br>Cladding shall be with composite panels the finishing of which should be either in Acylic Bound Solid Surface Material Sheet, or in alternative any other solution that can guaranty solidity, material´s compact property which makes | Tender terms prevail |

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| | it suitable for long lasting use, easy to clean, chemically stable and warm to the touch.<br>● Internal balancing core with suitable geometry to ensure the maximum rigidity, and made with a stable, light and non oxide materials like aluminium. | |
| 12. | **Page 5, Technical Specification**<br>**a. Hermetic Suspended Ceiling System**<br>-The hermetic suspended ceiling should be a loading structure in heavy gauge material forming the grid on which the ceiling panels made of Solid Mineral Composite Sheet.<br>-The modular grid, which shall be 600 x 600 mm, 600 x 1200mm, or variable, allows the integration of sealed lighting fixtures, air anemostats and /or various service units. The variable module grid should make it possible to adapt the size of the ceiling module to match the equipment to be mounted. It should also allow the use of different module sizes within the same room.<br>-The grid should be formed of loading profiles, suspended from the ceiling slab, to which the crossbar profiles are secured by means of rigid mechanical couplings. The thus formed grid should be rigid and remains perfectly stable during all the subsequent site operations.<br>-The suspended ceiling should be hermetically sealed by means of silicon gasket application. The function of silicon sealing should be that of assuring an airtight environment in the room and eliminating crevices in which dust could accumulate. The gaskets to be made of non toxic silicon in compliance with regulations applicable to clean rooms (to US FDA standards), providing a durable and non-degradable seal that should be should be resistant to micro organism attack.<br>-Colour of inner surface wall of OT shall be as per the advice of the client.<br><br>**Suggestion**<br>We request it should be European CE Marked/UL Listed for quality assurance, Please confirm. | Tender terms prevail |
| 13. | **Page 8, Technical Specification, 5**<br>Door (Single Leaf) (2100 x 1000) mm<br>50mm thick door panel with Powder coated GI of 1.2 mm thickness door frames totally flushed with the walls. Ball Bearing hinges at least 3 such hinges per leaf. Non particle typed Rubber gasket D typed handle of SS-304 material, Door Closure, Concealed automatic door bottom<br>Drop seal and Dead lock. **The front and back panel of the door shall have SMS (Same material of the wall). Vision** | 50 mm thick doors with vision Panel 300 x 300 mm .Heat Insulated material sand witched with SMS of 3 mm thickness Front and back Panel. Powder coated Aluminium Frame of suitable thickness. |

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| | **Panel (300 x 300) mm for 4 Nos door.**<br>**Suggestion**<br>Kindly clarify as material required for the front and back panel of the door cannot not be of same material as doors are factory made and fitted and we have no arrangement to fit SMS. SMS material is imported item and the hinges door are Indian made and hinges door are made of SS. | |
| 14. | **Page 9, Technical Specification 9.**<br>PERIPHERAL LIGHT CUM CLEAN ROOM LUMINARIES<br>Peripheral lights (Size-2ft x 1ft) and clean room luminaries fitted in the frame. The Peripheral lighting should be done according to IP65 protocol.<br><br>**<u>Suggestion</u>**<br><br>Pheripheral light should be LED Based with (size – 2ft x 2ft ) IP65 protocol is used for outdoor area outside OT so we request you to add IP 20 it is recommended for Indoor area. | Size – 2ft x 2ft |
| 15. | **Page 10, Technical Specifications 10.**<br>**SURGEON CONTROL PANEL**<br><br>**<u>Suggestion</u>**<br>As Surgeon Control Panel is very important item, we suggest this should be European CE Marked/UL Listed for quality assurance. | European CE Marked/UL Listed |
| 16. | **Page 11, Technical Specification**<br>**11.a.** Equipment Boom System with boom suspension(Surgeon Pendant) for Progressive Scan Flat Panel.<br>-Should have atleast 3 shelves of minimum 750mm size for various medical devices. Should have standard Medical Gas Service outlets (7 bar Surgical Air outlet x2, CO2 outlet x 2, Vacuum Outlet x 2.<br>-The Column should have atleast 8 no. of Data (Audio/Video/Control) Ports for connections.<br><br>**<u>Suggestion</u>**<br><br>We request you to delete Progressive Scan Flat Panel.<br>-Should have atleast 3 shelves of minimum 650mm size for various medical devices. Should have standard Medical Gas Service outlets (7 bar Surgical Air outlet x2, CO2 outlet x 1 is enough for laproscopy, Vacuum Outlet x 2 and confirm us whether it is provision for gas outlet or Inbuild. Pls clarify | **Progressive Flat Panel deleted.**<br>Pendant should be supplied with Gas service Outlets<br>7 bar Surgical Air outlet x2, CO2 outlet x 1, Vacuum Outlet x 2, Nitrogen Outlet x 1 and 2 nos. Data Audio/Video/Control Ports for connections. |

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| | -The Column should have atleast 2 no. of Data (Audio/Video/Control) Ports for connections. | |
| 17. | **Page No. 11, 12, Technical Specification**<br><br>**b. Anesthesia Boom System**<br>-Double Arm Anaesthesia pendant should have anaesthesia machine lifting arrangement.<br>-The weight carrying capacity of the arm should not be less than 200 Kg.<br>-The head of the pendant should move the machine up & down. Oxygen Outlets– 4, N2O Outlet – 1, MedicalAir(4 bar) Outlet– 2, Vacuum Outlets– 2 AGSS Outlets-1 No.<br><br>**Suggestion**<br><br>It is difficult to install, as Anesthesia Machine is not in our scope and different modules have different configurtation so it is not possible to correlate compatibility. Hence this should be amended.<br>-The weight carrying capacity as agreed in Pre-Bid meet should be 150-200 kg or min. 150 kg.<br>- O2 Outlets– 4, N2O Outlet – 1, Medical Air (4 bar) Outlet– 2, Vacuum Outlets– 2, AGSS Outlets-1, Provision -1 and confirm us whether it is provision for gas outlet or Inbuild. Pls clarify. | Weight carrying capacity 150-200 kg<br><br>Pendant should be supplied with O2 Outlets x 4, N2O Outlet x 1, Medical Air (4 bar) Outlet x 2, Vacuum Outlets x 2, AGSS Outlets x 1, Provision -1 |
| 18. | **Page 14, Technical Specification 17.**<br>SCRUB STATION<br>The Scrub Sink should be made of 1.5 mm thick AISI 304 Stainless Steel and top surface (Counter) should be made of one piece molded mineral composite and polished to seamless satin finish.<br><br>**<u>Suggestion</u>**<br><br>Please clarify, there is no arrangement for fabrication of steel. Complete scrub is made of Stainless Steel. We therefore request to kindly delete molded mineral composite. | Scrub Sink should be of SS-304. |
| 19. | <u>Technical Suggestion Minor OT – Volume IV of Technical Specifications</u> | |

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| 20. | **Page 24, Technical Specification 12.**<br>INTERNAL DUCTING<br>The internal ducting till the existing AHU system of the Operating theatre should be done.<br><br>**<u>Suggestion</u>**<br>The Internal Ducting should be Inside Operating theatre. | Tender terms prevail |
| 21. | **Page 24, Technical Specification 13.**<br>SCRUB STATION<br>The Scrub Sink should be made of 1.5 mm thick AISI 304 Stainless Steel and top surface (Counter) should be made of one piece molded mineral composite and polished to seamless satin finish.<br><br>**<u>Suggestion</u>**<br>Please clarify, there is no arrangement for fabrication of steel. Complete scrub is made of Stainless Steel. We therefore request to kindly delete molded mineral composite. | Scrub Sink should be of SS-304. |
| 22. | **Page 22, Technical Specification 15.**<br>X-Ray View Screen<br>Completely made in stainless steel AISI 304 SB or epoxy powder coated.<br><br>**Suggestion**<br>Completed should made in Galvanized Powder Coated | Powder coated Aluminium |
| 23. | (5.2) PREQUALIFICATION DOCUMENT)<br>As this is for AIIMS tender the terms & condition should be same as that of the AIIMS tender. In recent tenders of AIIMS, It is mentioned that the firm should not stand deregistered / banned / blacklisted by any government authorities/12rganization. We are enclosing the copies of AIIMS orthopaedic tender same clause are mentioned in the HLL, CPWD, PWD, Railway, Central Government tender etc. Copy of some tenders are attached for your kind reference.<br><br>We would request you to change this clause "that firm should not stand blacklisted / debarred by any government authorities / 12rganization on the date of submission of tender".<br><br>**<u>Volume -1, (Point-6.0), Page – 7, PREQUALIFICATION DOCUMENT)</u>**<br>Even though the Applicants meet the above criteria, they are | Tender terms and conditions prevail. |

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| | subject to be disqualified, if they have:<br>- made misleading or false representation in the form, statement and attachments submitted; /or.<br>- record of poor performance such as abandoning the work, not properly completing the contract, inordinate delays in completion, litigation history, or financial failures, etc. /or<br>- The performance of any agency already worked/ working with HSCC is not found satisfactory/or<br>- found to have been black listed in any of the works.<br><br>**It is suggested that It should be change to the "Company should not stand blacklisted/debarred by any government authorities/13rganization on the date of submission of tender".** | |
| 24. | **Volume-IV, Page-05, Point No. 2, (Laminar Air Flow System)**<br><br>Unit for laminar flow diffuser should be made of thick aluminum sheet. The complete unit should have factory prepared fine sealing system along with proper test certificates. The laminar air flow should be supplied at site duly sealed in factory made packing. The laminar air flow unit should be made of extruded aluminum sections which should support the fire retardant housings in such a manner that the air is passed only through the maniple at Hepa filters (not S type Hepa filter). A test certificate of this regard should be provided along with the unit. The Laminar flow system should have anodized aluminum perforated diffuser grill. The laminar flow system should have such design that it provides cleanliness of class 100. (< = 100 particles/ft3) and bacteriological class B (< = 20 cfu/m3).<br><br>Complete air management system should be supplied with complete test certificates. Testing & maintenance of air quality with periodic replacements of Mini Pleat HEPA filters should be done at least once in 6 months or earlier if required.<br><br>**Please confirm do you need indigenous Laminar Flow System or Imported Laminar Flow System?**<br><br>**Also Laminar Air Flow System being the most important items of OT. It should be CE Certified.** | Tender terms prevail |
| 25. | **Volume-IV, Page-07, 13th Para DOORS AND FRAMES (AUTOMATIC HERMETICALLY SEALED SLIDING DOORS) (2100 x 1500)**<br>The Door Panel is 60mm thick and has 4mm thick high Quality High Pressure Laminates on both sides of 52mm thick Pressure Injected, CFC free Rigid Polyurethane Core of 45±2 Kg/m³ density. | 50 mm thick doors with vision Panel 300 x 300 mm .Heat Insulated material sand witched with SMS of 3 mm thickness Front and back Panel. Powder coated |

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| | The door panel is flush framed in extruded Aluminium alloy profiles.<br><br>**Please confirm you need Automatic Door in HPL or SMS material as asked in other doors.** | Aluminium Frame of suitable thickness. |
| 26. | **Volume-IV, Page-08,Point No.-4a.**<br><br>DOORS AND FRAMES (AUTOMATICALLY HERMETICALLY SEALED SLIDING DOOR) FROM SCRUBBER (2100 x 1000)<br><br>**Please confirm you need Automatic Door in HPL or SMS material as asked in other doors.** | 50 mm thick doors with vision Panel 300 x 300 mm .Heat Insulated material sand witched with SMS of 3 mm thickness Front and back Panel. Powder coated Aluminium Frame of suitable thickness. |
| 27. | **Volume-IV, Page-08, Point No.-5(DOOR (SINGLE LEAF) (2100 x 1000)mm)**<br><br>50mm thick door panel with Powder coated GI of 1.2 mm thickness door frames totally flushed with the walls. Ball Bearing hinges at least 3 such hinges per leaf. Non particle typed Rubber gasket D typed handle of SS-304 material, Door Closure, Concealed automatic door bottom Drop seal and Dead lock. The front and back panel of the door shall have SMS (Same material of the wall). Vision Panel (300 x 300) mm for 4 Nos door.<br><br>**You have asked for 50mm thick door panel with Power Coated GI Sheet. Please confirm you need power coated GI or SMS material?** | 50 mm thick doors with vision Panel 300 x 300 mm .Heat Insulated material sand witched with SMS of 3 mm thickness Front and back Panel. Powder coated Aluminium Frame of suitable thickness. |
| 28. | **Volume-IV, Page-09, 1st Para**<br><br>50 mm thick door panel with Powder coated GI of 1.2 mm thickness door frames totally flushed with the walls. Ball Bearing hinges at least 3 such hinges per leaf. Non particle typed Rubber gasket D typed handle of SS-304 material, Door Closure, Concealed automatic door bottom Drop seal and Dead lock. (Colour of the door shall be as per the choice of client). Double toughened glass of 600X 600mm size shall be flushed with door surface. The two parallel toughened glasses with 5 mm thick toughened glass fixed in double panel in both the leaf with necessary arrangements. The front and back panel of the door shall have SMS (Same material of the wall) at its lower halves.<br>**You have asked for 50mm thick door panel with Power Coated GI Sheet. Please confirm you need power coated GI or SMS material?** | 50 mm thick doors with vision Panel 300 x 300 mm .Heat Insulated material sand witched with SMS of 3 mm thickness Front and back Panel. Powder coated Aluminium Frame of suitable thickness. |

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| 29. | **Volume-IV, Page-10, Point No.-10, 2nd Para**<br><br>The touch screen typed Control Panel should be 19" medical grade color TFT/LED panel stationed in the sterile field. The Control Panel should be configured to incorporate all the services required by the staff in the Operation theatre. It should be mounted flush in the theatre wall.<br><br>**Please clarify the SCP is Indian or Imported? And this should be CE Marked.** | European CE/US FDA certified |
| 30. | **Volume-IV, Page-11, Point No.-11, 1st Para**<br><br>The Ceiling boom arm systems designed to provide convenient positioning of medical equipment, medical gas terminal units, electrical and speciality services. The Ceiling Pendants should comply with international standard. The support arms should be extremely robust and revolve on high quality bearings, so that the pendant head glides smoothly and quickly to any desired position. Pendant should be CE/US FDA marked.<br><br>**The weight bearing capacity of the Pendant should be increase to 200 to 250 KG for Anaesthesia Pendant and Surgeon Pendant.** | Weight carrying capacity 150-200 kg |
| 31. | **Volume-IV, Page-11, Point No.-11a, 2nd Para**<br><br>Equipment Boom System with boom suspension (Surgeon Pendant) for Progressive Scan Flat Panel<br>Description: The Equipment Boom should be custom designed to meet all of the specific needs of the operating room such as concealed cables and tubes, unlimited equipment combinations. The arms should be easy to move, and each should come with pneumatic brakes as a standard option to support a locked position.<br><br>The Equipment Pendant with a service head column adjustable height and should be with Double-arm (1000 +800 mm) with Horizontal Motion & Vertical motion. There should not be any sharp edges. Should have a motorized articulating vertical drop. Vertical articulation should be through a Heavy-Duty Electric motor. Should have atleast 3 shelves of minimum 750mm size for various medical devices having a load bearing capacity of minimum 200 Kg.<br><br>**In your description you have mentioned that suspension arm** | Same as Sr. No. 16. |

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| | **for progressive scan panel for monitor. Please clarify do you need spring arm or a monitor bracket.** | |
| 32. | **<u>Volume-IV, Page-11&12, Point No.-11b( Anaesthesia Boom System)</u>**<br><br>1000 mm and 800 moveable arms with 330 deg. Horizontal movement.<br><br>Double Arm Anesthesia pendant should have anaesthesia machine lifting arrangement. The head of the pendant should move the machine up & down.<br><br>The weight carrying capacity of the arm should not be less than 200 KG.<br><br>The arms may be fitted with pneumatic brakes to prevent inadvertent movement.<br><br>**Please clarify do you need machine docking facility. If yes, please specify make of the machine and weight bearing capacity should be increased to 200 to 250KG.** | Weight carrying capacity 150-200 kg |
| 33. | **<u>Volume-IV, Page-12, 6th Para</u>**<br><br>Outlets should be CE certified/UL listed. Each terminal unit should be identified by the appropriate recognized name or symbol, colour, coding and shape as per HTM 02-01 /NFPA 99C. The Gas Outlets to be provided with adapters in OT Pendants and must be as per the standards/guideline maintained in the Medical Gas Manifold System in the hospital. Gas outlets in Ots should have same type and standard.<br><br>**Please clarify the gas outlets should be compatible with existing building gas outlets.** | Tender Terms Prevail. |
| 34. | **<u>Volume-IV, Page-14,Point No.- 17(Scrub Station)</u>**<br><br>Compact Surgical Scrub sink -3 Bay should be designed for use in Operation theatre complex providing surgeons with a convenient sink for pre-OT scrub up. The Scrub Sink should be made of 1.5mm thick AISI-304 Stainless Steel and top surface(Counter) should be made of one piece molded mineral composite and polished to seamless satin finish. The scrub sink should be | Scrub Sink should be of SS-304 |

| | | |
|---|---|---|
| | provided with a front access panel which should be easily removed for access to the water controlled valve, waste connections, stoppers and strainers. Hands free operation should include infra-red sensors with built-in range of adjustment. Thermostatic mixing, valve control should be located behind the access panel and maintain constant water temperature. User defined time 1, 3,5,10 min. are available. This timing should be adjustable to meet individual application requirements, provided with infrared sensors, thermostatic control taps with fail-safe temperature controls. All units should have reduced anti splash front. It should have manual foot and operation mode. Knee operated switch should be provided additionally. The station should also have inbuilt soap dispensers. The Scrubber shall have in-built 20 L Geyser for supply of hot water.<br><br>**Scrub Sink asked in specification is of half SS-304 and counter in one piece moulded mineral composite. We suggest to go for complete SS-304 Scrub Sink or complete mineral composite Scrub Sink. Please confirm.** | |
| 35. | **Volume-IV, Page-15,Point No.- 21(Sink)**<br><br>Splash as per Layout (Rear & against side wall) Front & free side marine edge. 350mm dia.x200mm High Die Pressed Sink complete with 38mm dia. C.P. Drain Waste Out let. 16 gauge S.S-304 wall brackets. Secured to top with Acorn nuts & Bolts & Bracket secured to wall with anchor fasteners. Rear & Both sides 20 gauge S.S-304. One Deck mounted Jackson Swivel type water mixer water faucet. Unit mounted 865mm AFF Size-600x600x450.<br><br>**Please confirm this sink is to be constructed in which material?** | Tender terms prevail |
| 36. | **Volume-IV, Page-17, 8th Para**<br><br>Third party quality certification of the OT items from SGS/TUV(sud)/Lloyds should be submitted by the contractor Third party will certify as the item inspected meets specification of the contract ( Contract No. in the third party certificate should be mentioned)<br><br>**Please clarify third party certification is to be provided of all OT items or only imported items? In case of minor OT and ICU tender you have asked for only Imported items.** | Tender terms prevail |

| | | |
|---|---|---|
| 37. | **Volume-IV, Page-19, Point No. -2, 1st Para(Ceiling Filtration System/Laminar Air Flow system)**<br><br>Plan air Ceiling System, standard size. PLENUM UNIT – The complete unit shall have factory prepared fine sealing system. It should be perfectly seamless integration of ceiling mounted equipment and OT Ceiling. It should be flexible modular range of solutions, adjustable to the local requirements .It should be made out of high quality and durable materials, filter housings and pressure chamber are made out of Aluminum. It should have a low pressure drop allows for the long-term usage of the HEPA miniplete H14 filters . It should have reliable filter efficiency and filters are guaranteed to remove particles and gems with the usual H14 filters retaining 99.99 % of the particles and germs. It should have minimal pressure drop a low pressure drop ensures the energy saving characteristic of the Laminar Flow Ceiling. Air & light diffuser made out of two layer of mono filament precision woven polyester for the plan air ceiling to give a "LAMINAR FLOW" of filtered air Size-8ft x 6ft. It also provides a diffused shadow less lighting system with a control on the intensity of luminance by using high frequency electronic fluorescent tubes and ballasts.<br><br>**Please clarify Air diffuser will be made of monofilament fabric or aluminium perforated diffuser as asked in Modular OT Laminar Flow specification. The Laminar System should also be CE Certified.** | Aluminium perforated diffuser |
| 38. | **Volume-IV, Page-22, Point No. -10**<br><br>HORIZONTAL BED HEAD PANELS (HBHP) 1800MM LONG<br><br>**Please clarify it is Indian or Imported.** | Imported |
| 39. | **Volume-IV, Page-23, 8th Para**<br><br>Medical gas pipe line outlets (As mentioned above) should be provided. Outlets should be CE certified/UL listed. Each terminal unit should be identified by the appropriate recognized name or symbol, colour, coding and shape as per HTM 02-01 /NFPA 99C/DIN EN (latest version)<br><br>**Please clarify the gas outlets should be compatible with existing building gas outlets.** | Same as Sl. No-33 |

| | | |
|---|---|---|
| 40. | **Volume-IV, Page-23, 9th Para**<br><br>Facility (To be locally sourced) per unit as under;<br>i) 6/15 Amp Modular Electrical Sockets with switches = 6 sets<br>ii) IV Pole = 2nos<br>iii) Vacuum slide = 1no.<br>iv) Sliding blocks = 2nos.<br>v) Nurse call system module = 1No.<br>vi) ) Infusion Pump Mounts = 1 No<br>vii) Monitor Tray with Slider = 1 No.<br>viii) Utility Basket = 1 No.<br><br>**The Bed Head Panel should be European CE Certified.** | European CE Certified/UL Listed |
| 41. | **Volume-IV, Page-24,Point No. 13(Scrub Station)**<br><br>Compact Surgical Scrub sink -2 Bay should be designed for use in Operation theatre complex providing surgeons with a convenient sink for pre-OT scrub up. The Scrub Sink should be made of 1.5mm thick AISI-304 Stainless Steel and top surface(Counter) should be made of one piece molded mineral composite and polished to seamless satin finish.<br><br>**Instead of half SS-304 and counter in one piece moulded mineral composite. We suggest to go for complete SS-304 Scrub Sink or complete mineral composite Scrub Sink. Please confirm.** | Same as Sl No.34. |
| 42 | **Volume-IV, Page-25,Point No. 15(OT Light-LED)**<br><br>i) OT Light<br><br>**Please clarify OT light is Indigenous or Imported?** | Tender terms prevail. |
| 43 | **Volume-IV, Page-27,6th Para**<br><br>Imported item shall have third party test certificate from SGS/TUV (Sud)/Lloyd. Third party will certify as the item inspected meets specification of the contract ( Contract No. in the third party certificate should be mentioned)<br><br>**Here it is asked for only Imported item certification and not all OT items.** | Tender terms & conditions prevails. |
| 44 | **Please Note: - As this is tender for turnkey items and require extensive working. So please give us 5-6 week for tender submission from the date of issue of corrigendum.** | Bid submission date is extended till 26.05.2016. |

| | | |
|---|---|---|
| 45 | **Technical Specification**<br>**Item Sr. No. 2 Laminar Air Flow System**<br>Although from specification it is apparent that LAF should be imported, in order to avoid contentious situation and disputes after tendering we request you to clearly state whether the same is to be Imported or Indian. | Tender terms prevail |
| 46 | **Item Sr. No. 4 Doors and Frames**<br>We request you to clearly state whether same is Imported or Indian. Also the door material is mentioned as High Pressure Laminate, where as we feel that it should be of same material as the OT walls etc. ie. Solid Mineral Surface (SMS) material.<br>Similarly for serial No. 5 & 6 single/Double leaf door as you have asked for SMS material, please state clearly that same is to be imported. | 50 mm thick doors with vision Panel 300 x 300 mm .Heat Insulated material sand witched with SMS of 3 mm thickness Front and back Panel. Powder coated Aluminium Frame of suitable thickness. |
| 47 | **Item Sr. No. 11 Adjustable Movable Boom Arm**<br>The weight carrying capacity of 200 Kg mentioned in tender specs is too specific and appears to be model specific. Please consider that this for a double arm with vertical movement.<br>Please amend the same as to read 150 to 200 Kg for an arm of 1000 mm length and 220 to 270 Kg for an arm of 700 mm length. | Same as Sl. No-32 |
| 48 | **View Window with Motorized Blinds (Sr. No. 19 of Specification)**<br>View window with motorized venetian blinds sandwiched in two parallel toughened glasses of thickness 5 mm should be complete with FHP motor control for 90 deg rotation. The window frame should be powder coated Aluminium of approved shape flush mounted with wall paneling. The entire assembly should be completely sealed and fitted with proper Aluminium profile. The assembled thickness of the windows should be 33 mm. The windows blind should be operated with remote control and manually. | Venetian Blinds deleted.<br>Glass shall be frosty and cladded with film. |

Bidder should follow the tender terms & condition for the unanswered queries.

**The bid submission date is extended from 12.05.2016 to 26.05.2016 and bid security should be valid for 180 days from the date of bid submission ie. from 26.05.2016.**

All other terms & conditions remain unchanged.

Chief General Manager
For & on behalf of Director (AIIMS)

# JAI PRAKASH NARAYAN (JPN)
# AIIMS TRAUMA CENTRE NEW DELHI

**e- TENDER**

**FOR**

**Construction of Modular Operation Theatres (MOT) & associated works including Turnkey Works for Jai Prakash Narayan AIIMS Trauma Centre, New Delhi**

**VOLUME –V**

**BILL OF QUANTITIES (BOQ)**

**February 2016**

( Consultants & Engineers for Mega Hospitals & Laboratories )
E - 6 (A), Sector - I, NOIDA ( U.P. ) - 201 301 ( INDIA )

PHONE : 0120-2542436, 2542437 FAX : 0120-2542447
E- mail : www.hsccltd.co.in

**Tender No. HSCC/SES/MOT/AIIMS-Trauma/2015**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | **BILL OF QUANTITIES (B.O.Q) OF HVAC WORKS FOR TRAUMA EXPANSION (OT FLOOR) ,AIIMS,DELHI** | | | | | |
| | | | | | | | |
| **Item No. 1** | **DSR/ NDSR Item 2** | **Description 3** | **Total Qty 4** | **Unit 5** | **Rate In Rs ( in Figure) 6** | **Rate in Rs (in Words) 7** | **Amount (Rs.) 8** |
| | | | | | | | |
| The prices are to be quoted in the below mentioned form and shall include the supply, installation, testing & commissioning at site of all the equipments, ancillary materials as specified and all such items what so ever which may be required to fulfill the intent and purpose as laid down in the specifications and or the drawings. | | | | | | | |
| The tenderer shall quote rates in figures and in words under column 6&7 and extended amount to column 8. | | | | | | | |
| **A)** | | **EQUIPMENTS** | | | | | |
| | | | | | | | |
| **1.0** | **NDSR** | **AIR HANDLING UNITS** | | | | | |
| | | | | | | | |
| **1.1** | | Supply, installation, testing and commissioning of draw through type Air Handling Units (double skin type) of horizontal /2-tier as specified & shown in schedule of equipment complete with the following :- | | | | | |
| | | a. Fan Section and canvas connection, Mixing Box, Thermal break profile. (double skin type) | | | | | |
| | | b. Centrifugal blower | | | | | |
| | | c. Coil section with cooling coil, heating coils as per specifications. | | | | | |
| | | d. Pre filters with filter section as required in all AHUs. | | | | | |
| | | e. Fine and hepa filters with filter section wherever specifically specified as per AHU schedule .Wherever fine/hepa filters are specified, item shall include factory fabricated double skin plenum of same specifications as AHU panels and complete with filter frameworks.Fine/hepa filter section along with discharge plenum shall be part of AHU in upper tier. | | | | | |
| | | f. Drain pan, drain connection. | | | | | |
| | | g. Squirrel cage induction IP 55 TEFC , Insulation class 'F', duty S1 , EFF-1 drive motor, drive arrangement, guard etc. All AHU motors shall be with compatible VFD. | | | | | |
| | | h. Necessary vibration isolators & supporting arrangement. | | | | | |
| | | i. Fresh air intake arrangement, necessary water drain & air purge valves wherever required etc. | | | | | |

| Item No. 1 | DSR/ NDSR Item 2 | Description 3 | Total Qty 4 | Unit 5 | Rate In Rs ( in Figure) 6 | Rate in Rs (in Words) 7 | Amount (Rs.) 8 |
|---|---|---|---|---|---|---|---|
| | | j. Canvass connections,necessary foundations, 2 nos pressure gauge, 2 nos thermometer etc | | | | | |
| | | k.Controls for AHUs comprising of a set of 3-way mixing cum diverting valve of required size having manual override facility alongwith proportional thermostat & wiring for interconnection with 1.5 sq. mm Cu Conductor multicore armoured complete as required. | | | | | |
| | | | | | | | |
| 1.1.1 | | AH-FF-01,02,03,04 - 4600cfm/ 6 RD Cooling Coil/2 RD Heating Coil/ 135 mm static (with fine filter) | 4 | Nos. | | | 0 |
| 1.1.2 | | AH-FF-05 - 3000cfm/ 4RD Cooling Coil/ 40 mm static (with pre filter) | 1 | Nos. | | | 0 |
| 1.1.3 | | AH-FF-06 - 8500cfm/ 4RD Cooling Coil/2RD Heating coil 80 mm static (with fine filter) | 1 | Nos. | | | 0 |
| 1.1.4 | | AH-FF-07 - 3800cfm/ 4RD Cooling Coil/ 2RD Heating Coil 80 mm static (with fine filter) | 1 | Nos. | | | 0 |
| 1.1.5 | | AH-FF-08 - 6000cfm/ 4RD Cooling Coil/2 RD Heating Coil 50 mm static (with pre filter) | 1 | Nos. | | | 0 |
| | | | | | | | |
| **2.0** | **NDSR** | **Inline Fans** | | | | | |
| | | | | | | | |
| | **NDSR** | Supply, installation, testing and commissioning of **Inline Fans** as shown in drawings and as per equipment schedule .Each fan shall be complete with centrifugal blowers, totally enclosed fan cooled motor. Fan motor shall be suitable for single phase, 220 +/- 6% V, 50 Hz AC supply. Item shall be complete with starter & cabling. | | | | | |
| | | | | | | | |
| | | **Inline Fans** | | | | | |
| 2.1 | | Duty: OT Defumigation | | | | | |
| | | Air Quantity : 500 CFM | 5 | Nos. | | | 0 |
| | | Static Pressure :15 mm wg | | | | | |
| | | | | | | | |
| 2.2 | | Duty: Toilet Exhaust | | | | | |

| Item No. 1 | DSR/ NDSR Item 2 | Description 3 | Total Qty 4 | Unit 5 | Rate In Rs ( in Figure) 6 | Rate in Rs (in Words) 7 | Amount (Rs.) 8 |
|---|---|---|---|---|---|---|---|
| | | Air Quantity : 500 CFM | 1 | Nos. | | | 0 |
| | | Static Pressure :15 mm wg | | | | | |
| | | | | | | | |
| **3.0** | | **Ventilation Fans** | | | | | |
| | | | | | | | |
| **3.1** | | **Vane Axial Fans (Fire rated)** | | | | | |
| | | Supply, installation, testing and commisioning of vane axial flow fans as shown in drawings, Each fan shall be direct driven.. Fan motor shall be suitable for 3 Phase, 415+/- 10% V, 50Hz AC supply with IP 55 protection,class H insulation and EFF-2 class. Fan shall be complete with vibration isolators, gravity louvers. Fan shall be 250 deg C, 2hrs fire rated. | | | | | |
| | | | | | | | |
| | | **Duty: Upper Floor Smoke Extraction** | | | | | |
| 3.1.1 | | Air Quantity : 2000 CFM, 25 mm st. pr. | 1 | Nos. | | | 0 |
| | | | | | | | |
| **4.0** | | **MONSOON REHEATING ARRANGEMENT** | | | | | |
| | | | | | | | |
| 4.1 | | **Supply, Installation, testing & Commissioning** of monsoom reheating arrangement fixed in ducts/ plenums complete with strip heaters, fixing frame work , insulators, fire protection insulation in duct, controls such as heating thermostats, humidistats etc. The heaters banks shall be controlled by independent thermostats,humidistats through electro magnetic type contactors and safety thermostats, geyserstats as specified complete with wiring for interconnections with 1.5 sq. mm. copper conductor multi core armoured cable. The heater capacity shall be as per schedule of equipment and specifications, drawing etc. | | | | | |
| | | | | | | | |
| 4.1.1 | | 3 KWx 2 banks | 1 | Nos | | | 0 |
| 4.1.2 | | 1.5 KWx 2 banks | 5 | Nos | | | 0 |
| | | | | | | | |
| **B)** | | **AIR DISTRIBUTION** | | | | | |

| Item No. 1 | DSR/ NDSR Item 2 | Description 3 | Total Qty 4 | Unit 5 | Rate In Rs ( in Figure) 6 | Rate in Rs (in Words) 7 | Amount (Rs.) 8 |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| **5.0** | **DSR** | **GSS DUCTING** | | | | | |
| | | Supply, installation, balancing and commissioning of factory fabricated GSS sheet metal rectangular/round ducting complete with neoprene rubber gaskets, elbows, splitter dampers, vanes, hangers, supports etc. as per approved drawings and specifications of following sheet thickness complete as required. | | | | | |
| | | | | | | | |
| 5.1.1 | 16.12.1.1 | Thickness 0.63 mm sheet | 400 | Sqm. | | | 0 |
| 5.1.2 | 16.12.1.2 | Thickness 0.80 mm sheet | 200 | Sqm. | | | 0 |
| 5.1.3 | 16.12.1.3 | Thickness 1.00 mm sheet | 10 | Sqm. | | | 0 |
| 5.1.4 | 16.12.1.4 | Thickness 1.25 mm sheet | 10 | Sqm. | | | 0 |
| | | | | | | | |
| 5.2 | NDSR | **ALUMINIUM DUCTING** | | | | | |
| | | Supply, fabrication, installation and testing of aluminium ducts in accordance with the approved shop floor drawing and specifications. Material should confirm to IS 737 latest edition. | | | | | |
| | | | | | | | |
| 5.2.1 | | 22 gauge | 400 | Sqm. | | | 0 |
| 5.2.2 | | 18 gauge | 50 | Sqm | | | 0 |
| **6.0** | | **DAMPERS** | | | | | |
| **6.1** | **DSR** | **FIRE DAMPERS** | | | | | |

| Item No. 1 | DSR/ NDSR Item 2 | Description 3 | Total Qty 4 | Unit 5 | Rate In Rs ( in Figure) 6 | Rate in Rs (in Words) 7 | Amount (Rs.) 8 |
|---|---|---|---|---|---|---|---|
| | 16.20 | Supplying, Fixing,testing and commissioning of fire dampers in supply air duct/main branch and return air path as and where required of required sizes i/c control wiring,the damper shall be motorized and spring return so as to close the damper in the event of power failure automatically and open the same in case of power being restored. The spring return action shall be inbuilt mechanism and not externally mounted. The damper shall also be closed in the event of fire signal complete as required and as per specifications. | | | | | |
| 6.1.1 | 16.20.1 | Fire/smoke Damper | 10 | Sqm | | | 0 |
| 6.1.2 | 16.20.2 | Actuator | 16 | Nos. | | | 0 |
| | | | | | | | |
| **6.2** | **DSR** | **VOLUME CONTROL DAMPERS** | | | | | |
| | | | | | | | |
| 6.2.1 | 16.13 | Supply, installation, testing and commissioning of GI volume control duct damper complete with neoprene rubber gaskets, nuts, bolts, screws linkages, flanges etc, as per specifications. | 12 | Sqm. | | | 0 |
| | | | | | | | |
| **7.0** | **DSR** | **CEILING DIFFUSERS** | | | | | |
| | | | | | | | |
| 7.1 | 16.17 | Supplying, fixing testing commissioning of supply air diffusers of powder coated aluminium with aluminium volume control dampers with anti smudge ring & removable core. | 6 | Sqm. | | | 0 |
| | | | | | | | |
| 7.2 | 16.18 | Supplying, fixing testing commissioning of Return air diffusers of powder coated aluminium without volume control dampers with anti smudge ring & removable core. | 6 | Sqm. | | | 0 |
| | | | | | | | |
| **8.0** | | **GRILLES** | | | | | |
| | | | | | | | |

| Item No. 1 | DSR/ NDSR Item 2 | Description 3 | Total Qty 4 | Unit 5 | Rate In Rs ( in Figure) 6 | Rate in Rs (in Words) 7 | Amount (Rs.) 8 |
|---|---|---|---|---|---|---|---|
| 8.1 | **DSR** | Supply, installation, testing and balancing of supply/return air grilles with/without volume control dampers of powder coated aluminium construction suitable for installation in walls, false ceiling boxing etc as per specifications and drawings. | | | | | |
| | | | | | | | |
| 8.1.1 | 16.15 | Supplying & fixing of powder coated extruded aluminium Supply/ Return Air Grills with aluminium volume control dampers as per specifications. | 2 | Sqm. | | | 0 |
| | | | | | | | |
| 8.1.2 | NDSR | Providing & fixing of S.S. grilles with 60% perforated face area. The grill shall be complete with damper & prefilter and shall be openable from outside. | 2 | Sqm. | | | 0 |
| | | | | | | | |
| **9.0** | **NDSR** | **FRESH AIR GRILLES with bird screen** | | | | | |
| | | | | | | | |
| 9.1 | | Supply, installation, testing, commissioning and balancing of fresh air opening comprising of powder coated extruded aluminium louvers with bird screen, projection with frame and volume control damper with lever mounting arrangement etc. as per specifications and drawings. | 2 | Sqm. | | | 0 |
| | | | | | | | |
| **10.0** | | **Pan type Humidifier** | | | | | |
| | | | | | | | |
| | | Supply, installation, testing and commissioning of electric pan type humidifiers in each Air Handling Rooms to provide humidification during winter months heating operation. The humidifier shall evaporate 12 liters water per hour and complete with all required water valves incoming MCB, humidistat and ,electrical & control wiring and earthing as required. | | | | | |
| 10.1 | | 6 KW | 5 | Sets | | | 0 |
| | | | | | | | |
| **11.0** | **DSR** | **DUCT INSULATION** | | | | | |
| | | | | | | | |

| Item No. 1 | DSR/ NDSR Item 2 | Description 3 | Total Qty 4 | Unit 5 | Rate In Rs ( in Figure) 6 | Rate in Rs (in Words) 7 | Amount (Rs.) 8 |
|---|---|---|---|---|---|---|---|
| 11.1 | 16.23 | Supplying and fixing of following thickness duly laminated aluminum foil of mat finish closed cell Nitrile rubber (class "O") insulation on existing duct after applying two coats of cold setting adhesive (CPRX compound). The joints shall sealed with 50 mm wide and 3 mm thick self adhesive nitrile rubber tape insulation complete as per specifications and as required. | | | | | |
| 11.1.1 | 16.23.2 | 25 mm | 800 | Sqm. | | | 0 |
| 11.1.2 | NDSR | 25 mm (with UV protection for outdoor application) | 200 | Sqm. | | | 0 |
| | | | | | | | |
| | | **TOTAL FOR HVAC WORKS** | | | | | 0 |

**BOQ OF ELECTRICAL WORKS FOR CONSTRUCTION OF AIIMS TRAUMA EXPANSION OT FLOOR , NEW DELHI**

| S.No. | | Description. | Unit. | TOTAL Qty. | Rate in Figure (Rs.) | Rate in Words (Rs.) | Amount(Rs.) |
|---|---|---|---|---|---|---|---|
| | | **SUB HEAD 1 :MV PANELS** | | | | | |
| | | Supply, installation, testing and commissioning of following M.V. cubicle type totally enclosed, wall mounted/Free standing type, powder coated, dust, damp and vermin proof, indoor type Distribution Board/Panel complete with busbars, M.V. danger notice plate, interconnections with suitable capacity aluminium leads/solid aluminium strips/rods, connection of incoming and outgoing cables with thimbles, and having following incoming and outgoing switchgears complete as per techinical specification and as required. | | | | | |
| | | | | | | | |
| | | **NOTE:** | | | | | |
| | **i** | All MCCBs shall have Ics=Icu=100% | | | | | |
| | **ii** | MCB Should be connected throught terminal Strip of suitable rating | | | | | |
| | | | | | | | |
| **1.01** | | **MV PANEL** | | | | | |
| | a) | **INCOMER:** | | | | | |
| | | 500 Amp 415 volts, 35 KA (Ics= Icu), FP MCCB with variable current settings and having microprocessor based O/L, S/C & E/F protection release. | | | | | |
| | | Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers. | | | | | |
| | | R,Y&B phase indicating lamp (LED type) with 6A control SP MCB | | | | | |
| | | ON, OFF, TRIP indication (LED Type) | | | | | |
| | | 1 No. 0 to 500 V Digital voltmeter with selector switch. | | | | | |
| | | Digital ammeter with selector switch with one set Suitable C.Ts. | | | | | |
| | | | | | | | |
| | b) | **BUSBARS:** | | | | | |
| | | 630 Amp FP Aluminium busbars | | | | | |
| | | | | | | | |
| | c) | **OUTGOING:** | | | | | |
| | i) | **8 Nos. MCCB as per following details / specifications:** | | | | | |
| | | 100 Amps,415 volts, TP+NL, 35 KA (Ics= Icu),Moulded Case Circuit Breaker with thermal magnetic release having variable current settings . | | | | | |
| | | Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers. | | | | | |
| | | ON, OFF, TRIP indication (LED Type) | | | | | |
| | | Digital Ampere Metre of suitable range with suitable set of CT's and ASS. | | | | | |
| | | | | | | | |
| | iii) | 4 no. 40 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker. | | | | | |

| S.No. | | Description. | Unit. | TOTAL Qty. | Rate in Figure (Rs.) | Rate in Words (Rs.) | Amount(Rs.) |
|---|---|---|---|---|---|---|---|
| | iv) | 4 no. 63 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker. | | | | | |
| | | **MV PANEL : as mentioned above** | Set | 1 | | | |
| | | | | | | | |
| **1.02** | | **MV PANEL (For OT)** | | | | | |
| | **a)** | **INCOMER:** | | | | | |
| | | 2 No. 100 Amp 415 volts, 35 KA , FP MCCB with thermal magnetic release having variable current settings. | | | | | |
| | | R,Y&B phase indicating lamp (LED type) with 6A control SP MCB | | | | | |
| | | ON, OFF, TRIP indication (LED Type) | | | | | |
| | | Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers. | | | | | |
| | | 1 No. 0 to 500 V Digital voltmeter with selector switch. | | | | | |
| | | Digital ammeter with selector switch with one set Suitable C.Ts. | | | | | |
| | | | | | | | |
| | **b)** | **BUSBARS:** | | | | | |
| | | 400 Amp TPN Aluminium busbars | | | | | |
| | | | | | | | |
| | **c)** | **OUTGOING:** | | | | | |
| | **i)** | 2 no. 40 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker | | | | | |
| | **ii)** | 6 no. 63 Amps , 415 volts, 9 KA ,Four Pole | | | | | |
| | | **MV PANEL (FOR OT) as mentioned above** | Set | 1 | | | |
| | | | | | | | |
| | | **TOTAL SUB HEAD 1 : MV PANEL AS MENTIONED ABOVE** | | | | | |
| | | | | | | | |
| **2.00** | | **SUBHEAD 2 : UPS SYSTEM** | | | | | |
| | | **UPS 30 KVA. ( Ots)** | | | | | |
| **2.01** | | Supply, Installation, Testing and Commissioning of micro processor based 2 X30 KVA at 0.8 power factor at out put. with over all efficiency of minimum 94% at full load, True Online Double Conversion UPS using PWM IGBT technology. 3 Phase input 415 V +10% -15% and input frequency 50 Hertz plus minus 5%, 3 phase input and 3 phase output fixed setting at 380, 400 and 415V. UPS operating in parallel redundant load sharing mode (N+1) configration and each comprising of the following: | | | | | |
| | | (a) 125% rated Rectifier cum charger unit + 100% rated inverter, integrated in UPS module | | | | | |
| | | (b) IGBT Rectifier input for achieving THDi<5% and Input power factor of greater than 0.99 | | | | | |
| | | (c)100% rated external isolation transformer of H-class Delta/Star at the UPS output, after static bypass including cabling between UPS and transformer in each UPS | | | | | |
| | | (d) 100% rated Inbuilt static switch | | | | | |
| | | (f) 100% rated Inbuilt Maintenance Bypass | | | | | |

| S.No. | | Description. | Unit. | TOTAL Qty. | Rate in Figure (Rs.) | Rate in Words (Rs.) | Amount(Rs.) |
|---|---|---|---|---|---|---|---|
| | | (g) 100% rated moulded case circuit breaker having I thermal, magnetic and automatic U/V trip mechanics | | | | | |
| | | (i) RS 485 port for BMS connectivity | | | | | |
| | | (j) Supplying and installing Built-in suitable air-circulating fan . | | | | | |
| | | Input phase reversal protection to be provided as standard, UPS should shift on battery and provide alarm. | | | | | |
| | | (k) Supply, Installation, Testing and Commissioning of 12 V sealed maintenance free, Valve Regulated Lead Acid (VRLA) batteries for providing 30 minutes back up on each UPS at full load at 0.8 power factor. | | | | | |
| | | (l) Supply, Fixing of battery rack for each UPS system along with inteconnecting links, BCB etc as required | | | | | |
| | | (m) Each UPS Should be provided with of Static Bypass Module having High Switching Frequency Microprocessor Based with builtin Technical Protections like Short Circuit, Overload, High/ Low Voltage cutoff protection of load from source inclusive of Bypass facility, SBM is activated during malfunctioning conditions of Load like:-<br>-Short Circuit<br>-Overload<br>-over temprature<br>-Bypassing of particular load if reqd. | | | | | |
| | | | | | | | |
| | | **UPS 30 KVA SYSTEM AS MENTIONED ABOVE.** | **SET** | 1 | | | |
| | | **TOTAL SUBHEAD 2 : UPS SYSTEMS** | | | | | |
| | | | | | | | |
| **3.00** | | **SUB HEAD- 3: MCB DISTRIBUTION BOARDS.** | | | | | |
| | | **MCB DISTRIBUTION BOARD** | | | | | |
| **3.01** | | Supplying & fixing following way, three pole and neutral sheet steel, MCB distribution board, 415 volts,on recess/surface complete with loose wire box, terminal blocks, tinned copper busbar, neutral link, earth bar,din bar, detachable gland plate, interconnections, phosphatized and powder coated including earthing connection bolt etc. as per technical specifications and as required.(but without MCB & RCCB). | | | | | |
| | **i** | 4 way (8+12), Double door | Each | 2 | | | |
| | **ii** | 6 way (8+18) Double door | Each | 2 | | | |
| | **iii** | 8 way (8+24), Double door | Each | 4 | | | |
| | | | | | | | |
| **3.02** | | Supplying & fixing following way, single pole and neutral,sheet steel, MCB distribution board, 240 volts,on recess/surface complete with loose wire box, terminal blocks, tinned copper busbar, neutral link, earth bar,din bar, detachable gland plate, interconnections, phosphatized and powder painted including earthing etc.Before procurement of DB the contractor has to take approval of DB schedule/ drawing of each DB from the Electrical Engineer, HSCC, as per technical specifications and as required.(but without MCB & RCCB), | | | | | |
| | **i** | 8 way (4+4)Double door | Each | 2 | | | |
| | | | | | | | |
| **3.03** | | Supplying & fixing 6 Amps to 32 Amps rating, 240 volts,'B' series, miniature circuit breaker suitable for lighting & other loads of following poles in the existing MCB DB complete with connections, testing & commissioning etc. as per technical specifications & as required. | | | | | |

| S.No. | | Description. | Unit. | TOTAL Qty. | Rate in Figure (Rs.) | Rate in Words (Rs.) | Amount(Rs.) |
|---|---|---|---|---|---|---|---|
| | i | Single pole | Each | 172 | | | |
| | | | | | | | |
| 3.04 | | Supplying & fixing following rating, four pole, 415 volts, Miniature Circuit Breaker (MCB),in the existing MCB DB complete with connections, testing & commissioning etc. as per technical specifications and as required. | | | | | |
| | i | 25 Amps | Each | 2 | | | |
| | ii | 40 Amps | Each | 2 | | | |
| | iii | 63 Amps | Each | 4 | | | |
| | | | | | | | |
| 3.05 | | Supplying & fixing following rating, four pole, 415 volts, Residual Current Circuit Breaker (RCCB) having a sensitivity current upto 300 mA in the existing MCB DB complete with connections, testing & commissioning etc. as per technical specifications and as required. | | | | | |
| | i | 25 Amps | Each | 2 | | | |
| | ii | 40 Amps | Each | 2 | | | |
| | iii | 63 Amps | Each | 4 | | | |
| | | | | | | | |
| 3.06 | | Supplying and fixing following rating, double pole, 240 volts, MCB (B/C/D/ Curve) in the existing MCB DB complete with connections, testing and commissioning etc. as required. | | | | | |
| | i | 25 amps | Each | 2 | | | |
| | | | | | | | |
| 3.07 | | Supplying & fixing following rating, Double pole, 240 volts, Residual Current Circuit Breaker (RCCB) having a sensitivity current upto 300 mA in the existing MCB DB complete with connections, testing & commissioning etc. as per technical specifications and as required. | | | | | |
| | i | 25 amps | Each | 2 | | | |
| | | | | | | | |
| 3.08 | | Supplying and fixing Single pole Blanking plate in the existing MCB DB complete as required. | Each | 10 | | | |
| | | | | | | | |
| | | **TOTAL SUB HEAD 3: MCB DISTRIBUTION BOARDS AS MENTIONED ABOVE** | | | | | |
| | | | | | | | |
| 4.00 | | **SUB HEAD 4: WIRING** | | | | | |
| | | | | | | | |
| 4.01 | i | Wiring for light point/fanpoint/ exhaust fan point/call bell point with 1.5 sq.mm. PVC insulated, fire retardant low smoke (FRLS) copper conductor cable, single core/ multi strand, in steel conduit (Including supplying & recess laying of MS conduit and accessories) including the following and complete as required. | | | | | |
| | ii | Supplying and Fixing Modular type switches (modular Bell push in case of call bell points) in suitable size modular metal boxes, base plate & modular cover plates, space for fixing electronic fan regulator in case of fan point wiring & space for fixing 5A socket on the board etc. | | | | | |
| | iii | Supplying and fixing Hexagonal fan Boxes with 3 mm thick hylem sheet covers in case of Fan | | | | | |
| | iv | Supplying & Fixing Ceiling Rose in case of Exhaust Fan Points etc. | | | | | |
| | | **Note :** | | | | | |
| | | i) Unless otherwise specified all the conduiting work to be done in recess | | | | | |
| | | **Point wiring as mentioned above** | Point | 160 | | | |

| S.No. | | Description. | Unit. | TOTAL Qty. | Rate in Figure (Rs.) | Rate in Words (Rs.) | Amount(Rs.) |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| **4.02** | **i** | Wiring for twin control light points with 1.5 sq.mm. PVC insulated, FRLS copper conductor cable in MS conduit (including supplying and recess laying of MS conduit) including the following and complete as required. | | | | | |
| | **ii** | Supplying and Fixing Modular type two numbers 2 Way switches in suitable size modular metal boxes, base plate & modular cover plates etc. | | | | | |
| | | **Note :** | | | | | |
| | | i) Unless otherwise specified all the conduiting work to be done in recess | | | | | |
| | | **Wiring for twin control light points as mentioned above** | Point | 4 | | | |
| | | | | | | | |
| **4.03** | | Wiring for Submain/ circuit wiring with following size of PVC insulated FRLS copper conductor single core/multi strand cable in recessed steel conduit (including supply & laying of recessed conduit) as required. | | | | | |
| | **i** | 2X1.5 Sqmm with 1 No. 1.5 sqmm PVC FRLS insulated, copper conductor for earthing. | Metre | 600 | | | |
| | **ii** | 2X2.5 Sqmm with 1 No. 2.5 sqmm PVC FRLS insulated, copper conductor for earthing. | Metre | 345 | | | |
| | **iii** | 2X4 Sqmm with 1 No. 4 sqmm PVC insulated FRLS copper conductor for earthing | Metre | 400 | | | |
| | **iv** | 2X6 Sqmm with 1 No. 6 sqmm PVC insulated FRLS copper conductor for earthing | Metre | 100 | | | |
| | **v** | 2X10 Sqmm with 1 No. 10 sqmm PVC insulated FRLS copper conductor for earthing | Metre | 30 | | | |
| | **vi** | 4X4 Sqmm with 2 No. 4 sqmm PVC insulated FRLS copper conductor for earthing | Metre | 40 | | | |
| | **vii** | 4X6 Sqmm with 2 No. 6 sqmm PVC insulated FRLS copper conductor for earthing | Metre | 100 | | | |
| | **viii** | 4X10 Sqmm with 2 No. 10 sqmm PVC insulated FRLS copper conductor for earthing | Metre | 100 | | | |
| | **ix** | 4X16 Sqmm with 2 nos 16 sq mm PVC insulated FRLS copper conductor for earthing. | Metre | 120 | | | |
| | | | | | | | |
| **4.04** | | Supplying and fixing suitable Module GI box on surface or in recess including providing and fixing 3 pin 5/6 amps. modular socket outlet with shutters and 5/6 amps. modular type switch with indicator type, base plate, modular cover plate, connections etc. and all civil works 'complete as required. | Each | 30 | | | |
| | | | | | | | |
| **4.05** | | Supplying and fixing suitable modular GI box on surface or in recess including providing and fixing 6 pin 15/16 A modular socket outlet with shutters and 15/16 A modular switch with indicator, base plate, modular cover plate, connections, etc. and all civil works complete as required. | Each | 20 | | | |
| | | | | | | | |
| **4.06** | | Supplying and fixing suitable Modular metal box on surface or in recess including providing and fixing three nos 3 pin 5/6 amps. modular socket outlet with shutters and one no. 10 amps. modular type switch, base plate, modular cover plate, connections etc. and all civil works 'complete as required. **( For computer Points)** | Each | 5 | | | |
| | | | | | | | |
| | | **TOTAL SUBHEAD 4:WIRING AS MENTIONED ABOVE** | | | | | |

| S.No. | | Description. | Unit. | TOTAL Qty. | Rate in Figure (Rs.) | Rate in Words (Rs.) | Amount(Rs.) |
|---|---|---|---|---|---|---|---|
| | | **SUB HEAD 5: LIGHT FIXTURE AND FANS** | | | | | |
| **5.00** | | **LIGHT FIXTURES AND FANS** | | | | | |
| | | | | | | | |
| **5.01** | | Supply of following light fixture with high efficiency electronic ballast, starter, tubes/lamps, capacitor, reflector, diffuser, MS body/housing holder etc. complete with all fixing accessories as required. | | | | | |
| | **i** | 1X28 watt box type fluorescent light fixture (Philips TMS122 M 1XTL5-28W EBT or approved equivalent) (136bw /136b) | Each | 25 | | | |
| | **ii** | 1X36 watt surface mounted type fluorescent light fixture with opal acrylic diffuser (Philips TCS019 1XTL-D36W EBT or approved equivalent) (136AC1) | Each | 2 | | | |
| | **iii** | LED recessed flush mounted light fixture ( Sereno Philips RC869B LED-30S-6500 PSE W30L 120 D8 GR Size 600x600mm / 1200 mm as per requirment or approved equivalent with System Lumen (NOM) minimum 3000 or more) (236 RMO1) | Each | 22 | | | |
| | **iv** | 2X 36/4X14 watt Recess mounted clean room flourscent light fixture with bottom opening and Clear acrylic version (Philips TBS670 2XPL-36W FOP GT or approved equivalent).(2x36 CRI) | Each | 25 | | | |
| | | | | | | | |
| **5.02** | | Supply of following compact fluorescent light fixture with electronic ballast, starter, capacitor, yellow light lamps, reflector, diffuser, MS body/housing holder etc. complete with all fixing accessories as required. | | | | | |
| | **i** | 1x9 watt Bulk Head light fixture (Philips FXC 101 1XPL-S/2P11 W AC GR or approved equivalent) BH | Each | 2 | | | |
| | **ii** | 1X10 watt Mirror top with Diffuser ( Crompton Greaves LINNET # LCL-10-CDL or approved equivalent ) (w toilet) | Each | 5 | | | |
| | **iii** | LED recessed flush mounted down light fixture (Philips DN194B LED 15S -6500PSU WH or approved equivalent ith System Lumen (NOM) minimum 1500 or more) ) dl2 | Each | 45 | | | |
| | **iv** | LED Surface mounted down light fixture (Philips DN170C LED 10S -6500PSU WH or approved equivalent ith System Lumen (NOM) minimum 1500 or more) ) DL1 | Each | 5 | | | |
| | | | | | | | |
| **5.03** | | Supply of following ceiling fans (Crompton Greaves High Breeze / 5 Star Rated by B.E.E or approved equivalent) complete with double ball bearing, motor, blades, downrod, canopies, capacitor, modular type electronic fan regulator, suitable for operation on 230 volts, 50 Hz., 1 phase, AC supply complete as required. | | | | | |
| | **i** | 1200 mm sweep | Each | 8 | | | |
| | | | | | | | |
| **5.04** | | Supply of 900 RPM, 300 mm (Crompton Greaves Trans Air or approved equivalent) exhaust fan suitable for single phase 230 volts, 50 Hz., AC supply complete with motor, louvers/shutters etc. complete as required. | 2 | 10 | | | |
| | | | | | | | |
| **5.06** | | Installation, testing and commissioning of prewired, fluorescent fittings of all types, complete with all accessories and tube etc. directly on ceiling/wall, including connections with 1.5 sq.mm. PVC insulated, FRLS copper conductor, single core/ multi strand cable etc. as required. | Each | 74 | | | |
| | | | | | | | |

| S.No. | | Description. | Unit. | TOTAL Qty. | Rate in Figure (Rs.) | Rate in Words (Rs.) | Amount(Rs.) |
|---|---|---|---|---|---|---|---|
| **5.07** | | Installation, testing and commissioning of prewired, compact fluorescent lamp fixture (CFL fixtures)of all types, complete with all accessories and lamp etc. directly on ceiling/wall, including connections with 1.5 sq.mm. PVC insulated, FRLS copper conductor, single core/ multi strand cable etc. as required. | Each | 57 | | | |
| | | | | | | | |
| **5.08** | | Installation, testing and commissioning of ceiling fan and modular type electronic fan regulator(Electronic regulator to be fixed in switch board) including wiring the down rod and connection with 1.5 sqmm FR PVC insulated, copper conductor single core/multi strand cable including providing & fixing phenolic laminated sheet cover on the fan box, etc. as required. | Each | 8 | | | |
| | | | | | | | |
| **5.09** | | Installation, testing and commissioning of exhaust fan up to 400 mm sweep in the opening, including making the hole to suit the size of the above fan including , fixing of louvers/ shutters with frame making good the damages etc. as required. | Each | 10 | | | |
| | | | | | | | |
| | | **TOTAL SUBHEAD 5: LIGHT FIXTURE & FANS AS MENTIONED ABOVE** | | | | | |
| | | | | | | | |
| | | **SUB HEAD 6: TELEPHONE SYSTEM** | | | | | |
| **6.00** | | **TELEPHONE SYSTEM** | | | | | |
| **6.01** | | Supplying drawing, connecting and testing of 0.5mm dia annealed copper conductor PVC insulated PVC sheathed telephone Wire/cables in Existing M.S/ PVC conduit or a racks as required. | | | | | |
| | **i** | 2 pair Telephone cable. (0.5 sq mm) | Meter | 120 | | | |
| | | | | | | | |
| **6.02** | | Supplying and fixing of following sizes of steel conduit along with accessories in surface/recess including painting in case of surface conduit, or cutting the wall and making good the same in case of recessed conduit as required. | | | | | |
| | **i** | 20 mm | Metre | 80 | | | |
| | **ii** | 25 mm | Metre | 50 | | | |
| | | | | | | | |

| S.No. | | Description. | Unit. | TOTAL Qty. | Rate in Figure (Rs.) | Rate in Words (Rs.) | Amount(Rs.) |
|---|---|---|---|---|---|---|---|
| **6.03** | | Supply, fixing, connecting and testing of telephone modular sockets modular plate anodised MS box and blanking plate in surface / recessed including connectionetc as required. | | | | | |
| | **i** | Telephone socket outlet (RJ-11 telephone Jack Single with Shutter) | Each | 8 | | | |
| | | | | | | | |
| **6.04** | | Supplying, Installation, testing and commissioning of following sizes of telephone distribution board in M.S. hinged type lockable box duly painted complete with Krone type tag block etc. including terminations of cable as required. | | | | | |
| | **i** | 10 Pair | Each | 1 | | | |
| | | | | | | | |
| **6.05** | | Supplying and drawing of following pairs 0.5mm dia annealed bare copper conductor Polythene insulated, core twisted into pairs armoured telephone cable on surface/tray with saddels including termination of cables at both sides in Krone Tag Block etc. complete as required. | | | | | |
| | **ii** | 10 Pair | Metre | 30 | | | |
| | | | | | | | |
| **6.06** | | Supplying and drawing of following pairs 0.5 mm dia annealed bare copper conductor Polythene insulated, core twisted into pairs armoured jelly filled telephone cable in the existing trench/ hume pipe/ GI pipe etc with saddels etc. including terniation of cables in both sides at krone tag block complete as required. | | | | | |
| | **i** | 100 Pair | Meter | 50 | | | |
| | | | | | | | |
| | | **TOTAL SUBHEAD 6: TELEPHONE SYSTEM** | | | | | |
| | | | | | | | |
| | | **SUBHEAD 7:CONDUITING FOR COMPUTER SYSTEM .** | | | | | |
| **7.00** | | **CONDUITING FOR COMPUTER SYSTEM .** | | | | | |
| | | | | | | | |
| **7.01** | | Supply and fixing of following sizes of MS conduit along with the accessories in surface/recess including painting in case of surface conduit, or cutting the wall and making good the same in case of recessed conduit as required | | | | | |
| | **i** | 20 mm dia | Metre | 200 | | | |

| S.No. | | Description. | Unit. | TOTAL Qty. | Rate in Figure (Rs.) | Rate in Words (Rs.) | Amount(Rs.) |
|---|---|---|---|---|---|---|---|
| | ii | 25 mm dia | Metre | 100 | | | |
| | | | | | | | |
| 7.02 | | Supplying and fixing two module modular plate in recess flush mounted with clear acrylic cover (suitable for RJ-45 computer socket) with GI box complete as required. | Each | 10 | | | |
| | | | | | | | |
| | | **TOTAL SUBHEAD 7: CONDUITING FOR COMPUTER SYSTEM AS MENTIONED ABOVE** | | | | | |
| 8.00 | | **SUBHEAD 8: ADDRESSABLE FIRE AND PA SYSTEM SYSTEM** | | | | | |
| | | | | | | | |
| 8.01 | | Supply, installation, testing and commissioning of Automatic Analog addressable Photo - Thermal multicriteria detector with mounting Base, alarm LED . The Detector shall have automatic Electronic / dip switch addressing feature & each of these shall be equipped with fault Isolator/ External Fault Isolator complete with the GI Mounting Box and the hardware etc. as required. (UL / EN Approved) | **Nos.** | 5 | | | |
| | | | | | | | |
| 8.02 | | Supply, installation, testing and commissioning of Automatic Analog addressable Photoelectric smoke detector with mounting Base,alarm LED . The Detector shall have automatic Electronic /dip switch addressing feature & each of these shall be equipped with fault Isolator/ External Fault Isolator complete with the GI Mounting Box and the hardware etc. as required. (UL / EN Approved). | **Nos.** | 20 | | | |
| | | | | | | | |
| 8.03 | | Supply, installation, testing and commissioning of Automatic Analog addressable Fixed Temperature cum rate of Rise type Heat detector with mounting Base, alarm LED . The Detector shall have automatic Electronic / dip switch addressing feature & each of these shall be equipped with fault Isolator/ External Fault Isolator complete with the GI Mounting Box and the hardware etc. as required. (UL / EN Approved). | **Nos.** | 2 | | | |
| | | | | | | | |
| 8.04 | | Supply, installation, testing and commissioning of Automatic Analog addressable Duct Detector with Duct Housing and Duct probe tubes complete with Photoelectric Smoke Detector with mounting Base, alarm LED .The Detector shall have automatic Electronic/ dip switch addressing feature & each of these shall be equipped with fault Isolator/ External Fault Isolator complete with the GI Mounting Box and the hardware etc. as required. (UL / EN Approved). | **Nos.** | 2 | | | |
| | | | | | | | |
| 8.05 | | Supply, installation, testing and commissioning of Automatic Addressable control module for Hooters and Strobes . The Module shall have automatic Electronic /dip switch addressing feature & each of these shall be equipped with fault Isolator/ external fault Isolator complete with the GI Mounting Box and the hardware etc. as required. (UL / EN Approved). | **Nos.** | 1 | | | |
| | | | | | | | |
| 8.06 | | Supply, installation, testing and commissioning of Automatic Addressable control module for AHU & Stair Pressurization fan, The Module shall have automatic Electronic addressing feature & each of these shall be equipped with fault Isolator complete with the GI Mounting Box and the hardware etc. as required. (UL / EN Approved). | **Nos.** | 8 | | | |
| | | | | | | | |
| 8.07 | | Supply, installation, testing and commissioning of Automatic Addressable Monitor module for Flow Switch Monitoring etc. The Module shall have automatic Electronic/ dip switch addressing feature & each of these shall be equipped with fault Isolator/ external fault complete with the GI Mounting Box and the hardware etc. as required. (UL / EN Approved | **Nos.** | 1 | | | |
| | | | | | | | |

| S.No. | | Description. | Unit. | TOTAL Qty. | Rate in Figure (Rs.) | Rate in Words (Rs.) | Amount(Rs.) |
|---|---|---|---|---|---|---|---|
| **8.08** | | Supply, installation, testing and commissioning of Dual LED Response indicator for indicating the activation of the Remotely located Detector. | **Nos.** | 10 | | | |
| | | | | | | | |
| **8.09** | | Supply, installation, testing and commissioning of Addressable Manual call Station. The Call Point shall have automatic Electronic / dip Swich addressing feature & each of these shall be equipped with fault Isolator / external fault isolator complete with the Mounting Box and the hardware etc. as required. (UL / EN Approved). | **Nos.** | 2 | | | |
| | | | | | | | |
| **8.10** | | Supply, installation, testing and commissioning of Addressable electronic Sounder. The Sounder shall have automatic Electronic / dip switch addressing feature & each of these shall be equipped with fault Isolator / external fault isolator complete with the Mounting Box and the hardware etc. as required. The Sounders shall be Loop powered i.e. should not require additional cable to feed the Power & shall be programmable from the Fire Panel for Multiple type of tones selection. (UL / EN Approved). | **Nos.** | 2 | | | |
| | | | | | | | |

| S.No. | | Description. | Unit. | TOTAL Qty. | Rate in Figure (Rs.) | Rate in Words (Rs.) | Amount(Rs.) |
|---|---|---|---|---|---|---|---|
| **8.11** | | Supply, installation, testing and commissioning of Addressable electronic Sounder with Optical Beacon. The unit shall have automatic Electronic addressing /dip switch feature & each of these shall be equipped with fault Isolator / external fault isolator complete with the Mounting Box and the hardware etc. as required. The unit shall be Loop powered i.e. should not require additional cable to feed the Power & shall be programmable from the Fire Panel for Multiple type of tones selection. (UL / EN Approved). | **Nos.** | 1 | | | |
| | | | | | | | |
| **8.12** | | Integration of above FDA equipments with the control by existing addressable type netwarable fire detectionand alarm panel. | Each | 1 | | | |
| | | | | | | | |
| **8.13** | | Supply, Installation, Testing and Commissioning of Ceiling Speaker 6 watt dual cone spring loaded mounting clamps, SPL 90 dB, Freq response 80-15000 Hz, rated input voltage 100 Volts. | Nos. | 2 | | | |
| | | | | | | | |
| **8.14** | | Supply, Installation, Testing and Commissioning of Wall mountable type column type Speaker 6 watt , SPL 90 dB, Freq response 200-15000 Hz, rated input voltage 100 Volts, & rated impedance 1667 Ohms, | Nos. | 2 | | | |
| | | | | | | | |
| **8.15** | | Supplying and fixing of following sizes of steel conduit along with accessories in surface/recess including painting in case of surface conduit, or cutting the wall and making good the same in case of recessed conduit as required. | | | | | |
| | **i** | 20 mm | meter | 100 | | | |
| | **ii** | 25 mm | meter | 50 | | | |
| | | | | | | | |
| **8.16** | | Supply and drawing twisted 32/0.2mm PVC insulated copper speaker wire in existing conduit incluiding earth wire as required (for speakers). This inclued wiring for Amplifier as well. | meter | 200 | | | |
| | | | | | | | |
| **8.17** | | Integration of above PA equipments with existing Public Address System. | Each | 1 | | | |

| S.No. | | Description. | Unit. | TOTAL Qty. | Rate in Figure (Rs.) | Rate in Words (Rs.) | Amount(Rs.) |
|---|---|---|---|---|---|---|---|
| | | **TOTAL SUB HEAD 8 :ADDRESSABLE FIRE and PA SYSTEM** | | | | | |
| | | | | | | | |
| | | **SUB HEAD 9: LT CABLES** | | | | | |
| **9.00** | | **LT CABLES** | | | | | |
| | | | | | | | |
| **9.01** | | Supply of following sizes of 1.1 kV grade multicore aluminium conductor PVC sheathed armoured XLPE cable as per IS 7098. | | | | | |
| | **i** | 3.5 Core 25 Sqmm. | Metre | 100 | | | |
| | **ii** | 3.5 Core 50 Sqmm. | Metre | 100 | | | |
| | **iii** | 3.5 Core 240 Sqmm. | Meter | 300 | | | |
| | **iv** | 4 Core 16 Sq mm | Metre | 50 | | | |
| | **v** | 4 Core 10Sq mm | Metre | 50 | | | |
| | **vi** | 4 Core 6 Sq mm | Meter | 50 | | | |
| | **vii** | 3 Core 6 Sqmm. | Meter | 50 | | | |
| | **viii** | 3 Core 4 Sqmm. | Meter | 50 | | | |
| | | | | | | | |
| **9.02** | | Laying of one number PVC insulated and PVC sheathed power cable 1.1kV grade direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc. as | | | | | |
| | **i** | Up to 35 sq.mm | Metre | 245 | | | |
| | **ii** | Above 35 Sq mm and upto 95 Sq mm | **Metre** | 70 | | | |
| | **iii** | Above 185 Sq mm and up to 400 Sq mm | Metre | 210 | | | |
| | | | | | | | |
| | | | | | | | |
| **9.03** | | Laying of one number PVC insulated and PVC sheathed power cable 1.1kV grade direct in the existing RCC/ Hume/Stoneware/Metal pipe as required | | | | | |
| | **i** | Up to 35 sq.mm | Metre | 53 | | | |
| | **ii** | Above 35 Sq mm and upto 95 Sq mm | **Metre** | 15 | | | |
| | **iii** | Above 185 Sq mm and up to 400 Sq mm | Metre | 45 | | | |
| | | | | | | | |
| **9.04** | | Laying of one number PVC insulated and PVC sheathed power cable 1.1kV grade on surface or on existing cable tray complete as required. | | | | | |
| | **i** | Up to 35 sq.mm | Metre | 53 | | | |
| | **ii** | Above 35 Sq mm and upto 95 Sq mm | **Metre** | 15 | | | |
| | **iii** | Above 185 Sq mm and up to 400 Sq mm | Metre | 45 | | | |
| | | | | | | | |
| **9.05** | | Supplying and making end termination with suitable size Aliminuim lugs including double compression glands of following sizes of 1.1. kv grade multicore aluminium conductor PVC insulated and PVC sheathed | | | | | |
| | **i** | 3.5 Core 25 Sqmm. | Each | 2 | | | |
| | **ii** | 3.5 Core 50 Sqmm. | Each | 4 | | | |
| | **iii** | 3.5 Core 240 Sqmm. | Each | 8 | | | |
| | **iv** | 4 Core 16 Sq mm | Each | 4 | | | |
| | **v** | 4 Core 10Sq mm | Each | 2 | | | |
| | **vi** | 4 Core 6 Sq mm | Each | 2 | | | |
| | **vii** | 3 Core 6 Sqmm. | Each | 2 | | | |
| | **viii** | 3 Core 4 Sqmm. | Each | 2 | | | |
| | | | | | | | |
| | | **TOTAL SUBHEAD 9: LT CABLES AS MENTIONED ABOVE** | | | | | |
| | | | | | | | |

| S.No. | | Description. | Unit. | TOTAL Qty. | Rate in Figure (Rs.) | Rate in Words (Rs.) | Amount(Rs.) |
|---|---|---|---|---|---|---|---|
| | | **SUBHEAD 10: EARTHING** | | | | | |
| **10.00** | | **EARTHING** | | | | | |
| | | | | | | | |
| **10.01** | | Earthing with copper plate 600mmX600mmX3mm thick including accessories, and providing masonary enclosure with cover plate having locking arrangement and watering pipe etc., including charcoal or coke and salt complete as required. | Set | 8 | | | |
| | | | | | | | |
| **10.02** | | Earthing with GI plate 600mmX600mmX6mm thick including accessories, and providing masonary enclosure with cover plate having locking arrangement and watering pipe etc., including charcoal or coke and salt complete as required. | Set | 3 | | | |
| | | | | | | | |
| **10.03** | | Supplying and laying 25mmX5mm GI strip at 0.5m below ground level as strip earth electrode, including soldering etc. as required. | Metre | 200 | | | |
| | | | | | | | |
| **10.04** | | Providing and fixing 25mmX5mm GI strip on surface/on existing cable trench/RCC pipe/GI pipe or in recess for earth electrode as required. | Metre | 50 | | | |
| | | | | | | | |
| **10.05** | | Providing and fixing25mmX5mm Copper strip on surface/on existing cable trench/RCC pipe/GI pipe or in recess for earth electrode as required. | Metre | 50 | | | |
| | | | | | | | |
| **10.06** | | Supplying and laying 25mmX5mm Copper strip at 0.5m below ground level as strip earth electrode, including soldering etc. as required. | Metre | 250 | | | |
| | | | | | | | |

| S.No. | | Description. | Unit. | TOTAL Qty. | Rate in Figure (Rs.) | Rate in Words (Rs.) | Amount(Rs.) |
|---|---|---|---|---|---|---|---|
| **10.07** | | Providing and fixing 25 mm X 5 mm copper strip in 40 mm dia G.I.pipe from earth electrode including connection with brass nut, bolt, spring, washer excavation and re-filling etc. as required. | Metre | 50 | | | |
| | | | | | | | |
| **10.08** | | Providing and fixing 25 mm X 5 mm G.I. strip in 40 mm dia G.I. pipe from earth electrode including connection with G.I. nut, bolt, spring, washer excavation and re-filling etc. as required. | Metre | 50 | | | |
| | | | | | | | |
| **10.09** | | Providing and fixing 6 SWG dia G.I. wire on surface or in recess for loop earthing as required. | Metre | 200 | | | |
| | | | | | | | |
| **10.10** | | Providing, laying and fixing following dia RCC pipe NP2 class (light duty) in ground complete with RCC collars, jointing with cement mortar 1:2 (1 cement : 2 fine sand) including trenching (75 cm deep) and refilling etc as required. | | | | | |
| | **i)** | 300 mm dia | Metre | 100 | | | |
| | **ii)** | 150 mm dia | Metre | 100 | | | |
| | | | | | | | |
| **10.11** | | Fabrication and Installing following size of preforted M.S Cable tray including Horizontal and vertical bends, reducers,tee, crossmember and other accessories as required and duly Suspended from the ceiling with M.S 12mm rod suspenders and including painting etc. as required. | | | | | |
| | **i)** | 150mmwidth x 50mm depth x1.6mm thickness | Metre | 100 | | | |
| | **ii)** | 300mmwidth x 50mm depth x1.6 mm thickness | Metre | 100 | | | |
| | **iii)** | 450mmwidth x 62.5mm depth x2.0mm thickness | Metre | 100 | | | |
| | | | | | | | |
| **10.12** | | Fabrication and Installing following size of Ladder type M.S Cable tray including Horizontal and vertical bends, reducers,tee, crossmember and other accessories as required and duly Suspended from the ceiling with M.S 12mm rod suspenders and including painting etc. as required. | | | | | |
| | **i)** | 300mmwidth x 62.5mm depth x2.0mm thickness | Metre | 200 | | | |
| | | | | | | | |
| | | **TOTAL SUBHEAD 10: EARTHING AS MENTIONED ABOVE** | | | | | |
| | | | | | | | |
| | | | | | | | |

**BOQ OF ELECTRICAL WORKS FOR CONSTRUCTION OF AIIMS TRAUMA EXPANSION OT Floor , NEW DELHI**

| S.No. | DESCRIPTION | Amount In Figure (In Rs.) |
|---|---|---|
| | | |
| 1 | **SUB HEAD 1 :MV PANELS** | 0 |
| | | |
| 2 | **SUBHEAD 2 : UPS SYSTEM** | 0 |
| | | |
| 3 | **SUB HEAD- 3: MCB DISTRIBUTION BOARDS.** | 0 |
| | | |
| 4 | **SUB HEAD 4: WIRING** | 0 |
| | | |
| 5 | **SUB HEAD 5: LIGHT FIXTURE AND FANS** | 0 |
| | | |
| 6 | **SUB HEAD 6: TELEPHONE SYSTEM** | 0 |
| | | |
| 7 | **SUBHEAD 7:CONDUITING FOR COMPUTER SYSTEM .** | 0 |
| 8 | **SUBHEAD 8: ADDRESSABLE FIRE AND PA SYSTEM SYSTEM** | 0 |
| | | |
| 9 | **SUB HEAD 9: LT CABLES** | 0 |
| | | |
| 10 | **SUBHEAD 10: EARTHING** | 0 |
| | | |
| | **GRAND TOTAL FOR ALL ELECTRICAL WORKS (RS)** | 0 |

**BILL OF QUANTITY**

**Package - Supply, installation, testing & commissioning of MODULAR OPERATION THEATRE COMPLEX and Defect Liability Period. Modular OT - 4 Nos at 1st floor) & Minor OT at Emergency Ground floor**

**Name of bidder**

**PART-I**

| Item No. | Description 2 | Unit 3 | Qty 4 | RATE IN FIG in Rs. 5 | RATE IN WORDS in Rupees 6 | AMOUNT in Rs. 7 |
|---|---|---|---|---|---|---|
| 1.0 | **WALL & CEILING SYSTEM** Complete with all accessories as per technical specification | SQM | 1758 | | | 0 |
| 2.0 | **LAMINAR AIR FLOW SYSTEM** Complete with all accessories as per technical specification | Nos | 4 | | | 0 |
| 3.0 | **OPERATION THEATRE FLOORING (ANTISTATIC CONDUCTIVE PVC ROLL )** Complete with all accessories as per technical specification | SQM | 630 | | | 0 |
| 4.0 | **DOORS AND FRAMES (AUTOMATICALLY HERMETICALLY SEALED SLIDING DOOR) C**omplete with all accessories as per technical specification | Nos | 7 | | | 0 |
| 4a | **DOORS AND FRAMES (AUTOMATICALLY HERMETICALLY SEALED SLIDING DOOR) FROM SCRUBBER C**omplete with all accessories as per technical specification | Nos | 11 | | | 0 |
| 5.0 | **DOOR (SINGLE LEAF) Complete with all accessories as per technical specification** | Nos | 15 | | | 0 |
| 6.0 | **DOOR (DOUBLE LEAF) Complete with all accessories as per technical specification** | Nos | 11 | | | 0 |
| 7.0 | **PRESSURE RELIEF DAMPERS** Complete with all accessories as per technical specification | Nos | 4 | | | 0 |
| 8.0 | **INTERNAL DUCTING** Complete with all accessories as per technical specification | lot | 4 | | | 0 |
| 9.0 | **PERIPHERAL LIGHT CUM CLEAN ROOM LUMINARIES** Complete with all accessories as per technical specification | Nos | 40 | | | 0 |
| 10.0 | **SURGEON CONTROL PANEL** Complete with all accessories as per technical specification | Nos | 4 | | | 0 |
| 11.0 | **ADJUSTABLE MOVABLE BOOM ARM SYSTEMS** | | 4 | | | 0 |
| a | **SURGEON PENDANT** Complete with all accessories as per technical specification | Nos | 4 | | | 0 |
| b | **ANESTHETIST PENDANT** Complete with all accessories as per technical specification | Nos | 4 | | | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 12.0 | **X-RAY FILM VIEWER** Complete with all accessories as per technical specification | Nos | 4 | | | 0 |
| 13.0 | **HATCH/PASS BOX** Complete with all accessories as per technical specification | Nos | 4 | | | 0 |
| 14.0 | **WRITING BOARD (LIST BOARD)** Complete with all accessories as per technical specification | Nos | 4 | | | 0 |
| 15.0 | **BUILT-IN STORAGE UNIT** Complete with all accessories as per technical specification | Nos. | 8 | | | 0 |
| 16.0 | **DISTRIBUTION BOARD ELECTRICAL WIRING, CONDUITING WITH FIXTURES INSIDE THE OPERATION THEATRE** Complete with all accessories as per technical specification | Lot | 4 | | | 0 |
| 17.0 | **SCRUB STATION** Complete with all accessories as per technical specification | Nos | 3 | | | 0 |
| 18.0 | **MEDICAL GAS LINE INSTALLATION** Complete with all accessories as per technical specification | Lot | 4 | | | 0 |
| 19.0 | **VIEW WINDOW** Complete with all accessories as per technical specification | Nos | 2 | | | 0 |
| 20.0 | **EXHAUST CABINETS Complete with all accessories as per technical specification** | Nos | 4 | | | 0 |
| 21.0 | **SINK Complete with all accessories as per technical specification** | Nos | 4 | | | 0 |
| 22.0 | **HVAC WORKS INCLUDING AHUS FOR OT COMPLEX Complete with all accessories as per technical specification** | LOT | 1 | 0 | | 0 |
| 23.0 | **ELECTRICAL WORKS Complete with all accessories as per technical specification** | LOT | 1 | 0 | | 0 |
| 24.0 | **TURNKEY WORKS** Complete with all accessories as per technical specification | Lot | 1 | | | 0 |
| | | | | | Total | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | **PART-II** | | | | | |
| | **BOQ OF MINOR OT** | | | | | |
| 1.0 | **CEILING SYSTEM** Complete with all accessories as per technical specification | SQM | 38 | | | 0 |
| | | | | | | |
| 2.0 | **CEILING FILTRATION SYSTEM / LAMINAR AIR FLOW SYSTEM** Complete with all accessories as per technical specification | Nos | 1 | | | 0 |
| | | | | | | |
| 3.0 | **CORNER COVING Complete with all accessories as per technical specification** | MTR | 40 | | | 0 |
| | | | | | | |
| 4.0 | **WALL PAINTING Epoxy/Antibacterial painting Complete with all accessories as per technical specification** | SQM | 40 | | | 0 |
| | | | | | | |
| 5.0 | **HINGE DOOR (2100 x 1500) mm C**omplete with all accessories as per technical specification | Nos | 1 | | | 0 |
| | | | | | | |
| 6.0 | **PERIPHERAL LIGHT CUM CLEAN ROOM LUMINARIES** Complete with all accessories as per technical specification | Nos | 10 | | | 0 |
| | | | | | | |
| 7.0 | **DISTRIBUTION BOARD ELECTRICAL WIRING, CONDUITING WITH FIXTURES INSIDE THE OPERATION THEATRE** Complete with all accessories as per technical specification | Lot | 1 | | | 0 |
| | | | | | | |
| 8.0 | **OPERATION THEATRE FLOORING (ANTISTATIC CONDUCTIVE ROLL )** Complete with all accessories as per technical specification | SQM | 65 | | | 0 |
| | | | | | | |
| 9.0 | **MEDICAL GAS LINE INSTALLATION** Complete with all accessories as per technical specification | Lot | 1 | | | 0 |
| | | | | | | |
| 10.0 | **HORIZONTAL BED HEAD PANELS (HBHP) 1800mm long** Complete with all accessories as per technical specification | Nos. | 1 | | | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 11.0 | **VIEW WINDOW** Complete with all accessories as per technical specification | Nos. | 2 | | | 0 |
| | | | | | | |
| 12.0 | **INTERNAL DUCTING** Complete with all accessories as per technical specification | Lot | 1 | | | 0 |
| | | | | | | |
| 13.0 | **SCRUB STATION** Complete with all accessories as per technical specification | Nos. | 1 | | | 0 |
| | | | | | | |
| 14.0 | **X-RAY FILM VIEWER** Complete with all accessories as per technical specification | Nos. | 1 | | | 0 |
| | | | | | | |
| 15.0 | **OT LIGHT DUAL DOME LED** Complete with all accessories as per technical specification | Nos. | 1 | | | 0 |
| | | | | | | |
| 16.0 | **TURNKEY WORKS** Complete with all accessories as per technical specification | Lot | 1 | | | 0 |
| | **SUB TOTAL Rs.** | | 1 | | | 0 |
| | **PART-III** | | | | | |
| **Item No 1** | **Description 2** | **Unit 3** | **Qty 4** | **Unit Rate In Rs ( in Figure) 5** | **Unit Rate in words in Rupees 6** | **Amount (Rs.) (In Figure) 7** |
| 1 | **Operation Charges** for the **AHUs**dedicated for OTs during one year Defect Liability Period as per the contract. | | 1 | | | 0 |
| | | | | | | |
| | | | | | | |

| | PART-IV | | | | | |
|---|---|---|---|---|---|---|
| Item No 1 | Description 2 | Unit 3 | Qty 4 | Unit Rate In Rs ( in Figure) 5 | Unit Rate in words in Rupees 6 | Amount (Rs.) (In Figure) 7 |
| | | | | | | |
| 1 | **Operation** of Air Handling Units for Operation Theatres | | | | | |
| | | | | | | |
| | 1st Year | Job | 1 | | | 0 |
| | | | | | | |
| | 2nd Year | Job | 1 | | | 0 |
| | | | | | | |
| | 3rd Year | Job | 1 | | | 0 |
| | | | | | | |
| | 4th Year | Job | 1 | | | 0 |
| | | | | | | |
| | | | | | **SUB TOTAL Rs.** | **0.00** |
| 2 | **Operation and Comprehensive Maintenance Charges** for the complete Modular OT, Minor OT and OT complex appliances including spares, repair or replacement of defective equipments/parts, tolls, tackles, accessories, consumables, labour charges etc. complete in all respect after completion of one year DLP as per the contract. | | | | | |
| | 1st Year | Job | 1 | | | 0 |
| | | | | | | |
| | 2nd Year | Job | 1 | | | 0 |
| | | | | | | |
| | 3rd Year | Job | 1 | | | 0 |
| | | | | | | |
| | 4th Year | Job | 1 | | | 0 |
| | | | | | | |
| | | | | | **SUB TOTAL Rs.** | **0.00** |
| | | | | | **Total(PART-IV)** | **0.00** |
| | **SUMMARY OF RATES QUOTED** | | | | | |
| | | | | | | |
| | TOTAL (PART-I) | | | | | 0 |
| | TOTAL (PART-II) | | | | | 0.00 |
| | TOTAL (PART-III) | | | | | 0.00 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | TOTAL (PART-IV) | | | | | 0.00 |
| | **Grand Total Amount (PART - I + PART-II + PART III+ PART-IV) (in Figures) :-** | | | | **Rs.** | **0.00** |
| | | | | | | |