

# **BIDDING DOCUMENT**

*TENDER NOTICE No.: 27/ 2018- 2019/ Biomedical Equipt./ IGIMS / Store*



## **Supply, Installation & Commissioning of Bio-Medical Equipments / Instruments**

*E- TENDER NOTICE No 27/2018 – 2019/ Biomedical Equiptt. / IGIMS / Store*

Issued to:

Cost of Document: Rs.

Paid By:            Cash:            Receipt No.:

Demand Draft:    No.:

Issuing Bank:

**(Authorized Signatory)**

# INDIRA GANDHI INSTITUTE OF MEDICAL SCIENCES,

SHEIKHPURA, PATNA - 800014.

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## IMPORTANT DATES

<b>Last date for Purchase of Bidding Document</b>	Can be downloaded from Institute website
<b>Last date for submission of Technical bid.(Hard copy)</b>	28/03/2019 up to 11.00 A.M. by registered/speed post/ Courier only
<b>Date of opening of technical bid</b>	28/03/2019 at 3:00 P.M. in 2 <sup>nd</sup> Floor, conference hall, New Administrative Building, IGIMS, Patna.
<b>Date of demonstration of equipment</b>	To be informed to the qualified bidders qualifying after opening of technical bids.

**INDIRA GANDHI INSTITUTE OF MEDICAL SCIENCES,**  
**SHEIKHPURA, PATNA -800014 (Bihar, India)**

Sl. No. OF TENDER: \_\_\_\_\_

FILE NO. : Tender No.: \_\_\_\_\_

Tender form issued in favour of:

\_\_\_\_\_

Dear Sir,

1. I/We hereby submit our tender for the

\_\_\_\_\_

2. I/WE are enclosing herewith the Demand Draft No..... dated.....  
for Rs. /- drawn in favour of **Director I.G.I.M.S. - Patna (payable at Patna)** towards  
**EMD / Bid Security.**

**(EMD AND COST OF BIDDING DOCUMENTS MUST BE SUBMITTED IN SEPRATE ENVELOP.TENDERS NOT ACCOMPANIED WITH EMD / BIDSECURITY ALONGWITH THE TECHNO-COMMERCIAL BID SHALL BE SUMMARILY REJECTED).**

3. I/We have gone through all terms and conditions of the tender documents before submitting the same.

4. I/We hereby agree to all the terms and conditions, stipulated by the I.G.I.M.S. - Patna including delivery, warranty, penalty etc. Quotations for each group are being submitted under separate covers, and sheets and shall be considered on their face value.

5. I/We have noted that overwritten entries shall be deleted unless duly cut & rewritten and Initialled.

6. Tenders are duly signed and stamped.(No thumb impression should be affixed)

7. I/We undertake to sign the contract/agreement, if required, within 15 (Fifteen days) from the date of issue of the letter of acceptance, failing which our/my EMD/Bid deposited may be forfeited and our/my name may be removed from the list of suppliers

Yours faithfully,

(Signature of Bidder with full name and address)

**CHECK LIST FOR TERMS AND CONDITIONS**

A.: **To be filled by the bidder and submitted along with the Technical Bid.**

<b>Sl. No.</b>	<b>Terms &amp; Conditions as per Bidding Document</b>	<b>Page No.</b>	<b>Remarks</b>
1.	<p><b>Status of Bidder:</b></p> <ul style="list-style-type: none"> <li>• Manufacturer or Authorized Agent of the Manufacturer</li> <li>• Whether Public Undertaking, Public Ltd., Private Ltd. Company or Proprietary Firm/partnership firm</li> <li>•</li> </ul> <p>(Please attach Notary certified <b>MANUFACTURER'S AUTHORISATION FORM</b> as per <b>FORMAT</b> placed at <b>Annexure – III</b>)</p>		
2.	<b>Power of Attorney as per Annexure - V</b> in favour of person to sign, submit and negotiate the bid.		
3.	Certificate towards market standing of minimum 05 years in the area of supply and or maintenance of bio-medical equipments.		
4.	Certificate for sole ownership / partnership		
5.	Statement of financial standing from bankers		
6.	Statements of turnover per year for last three successive years duly certified by the Chartered Accountants.		
7.	<b>Notary certified User List</b> (List of Govt. /Semi Govt., Reputed Pvt. Hospital) where quoted model of the items has been supplied and installed.		
8.	<b>Notary certified Supply</b> order copy (Minimum 3nos. or more) issued by Govt./Semi Govt./Reputed Pvt. Institutions/organization for the quoted items. ( same model)		
9.	<b>Notary certified Performance certificate</b> of the same supplied machine (of quoted make and Model) issued by <b>Head of the deptt. or Institution</b> after a minimum period of six months of installation		
10.	Prerequisite (if any) for installation of the Machine, if any, to be provided by the Institute.		
11.	Whether rates quoted are inclusive of all taxes or not.		
12.	Whether rates are quoted as per format mentioned in the Bidding Document or not.		
13.	Affidavit to the effect that the bidder is not blacklisted by any Govt. agency or have no pending case either Civil or Criminal against them.		
14.	Affidavit, to the effect that the bidder is not supplying the quoted item(s) to any other Govt. / Pvt. Organizations / Institutions / Hospitals at the rate lower than the rate quoted against this tender.		
15.	<b>Quality Assurance Certificate</b> like ISI, ISO-9002, IP/BP, CE, FDA (US) or any other (please specify)		

16.	<b>Bid Security</b> amount deposited is enclosed or not. If yes, please mention the details.		
17.	<b>Original Technical Catalogue</b> of the quoted model		
18.	Certificate, to the effect that bidder will maintain the quoted item(s) during Warranty period of three years including all spares, accessories, consumables etc.,  (Please mention the name of the item / items with price, which are not supplied by the bidder free of cost with frequency of replacement)		
19.	Certificate, to the effect that bidder has quoted its rate for Comprehensive Annual Maintenance Contract inclusive of labour, spares, consumables, accessories etc. on per year basis for a further period of seven years after expiry of warranty period of three years in the <b>price bid</b> .  (Please mention the name of the item / items with price, which are not supplied by the bidder free of cost with frequency of replacement during Comprehensive Annual Maintenance Contract period in the price bid)		
20.	Acceptance of all terms / conditions towards <b>after sales / services</b> as mentioned in the bidding document.( Clause No- 13 of “ Instruction to Bidder “ & clause no- 3, 4 and 5 of Condition of contract.)		
21.	<b>Compliance Statement</b> with relation to the technical specification as mentioned in the bidding document duly supported by the original catalogue. The bidder must quote specification in the compliance column Mere writing” Complied shall not be accepted.		
22.	<b>Compliance Statement</b> with relation to the terms & conditions as mentioned in the document.		
23.	<b>PAN and copies of Income Tax Returns</b> for the last three years.		
24.	Duly attested copy of sales tax/Vat registration certificate.		

**B: To be filled by the Bidder and submitted along with Price Bid**

<b>Sl. No.</b>	<b>Terms &amp; Conditions as per Bidding Document</b>	<b>Page No.</b>	<b>Remarks</b>
1.	<b>Item wise price for the item(s)</b> as mentioned in the Bidding Document and as per format attached as <b>Annexure – I(a) or I (b)</b>		
2.	<b>Rate for Comprehensive Annual Maintenance Contract</b> as per terms & conditions mentioned in the Bidding Document and as per format attached as <b>Annexure - II</b>		

**Note: If the above-tender details are not mentioned and required documents are not attached at appropriate places, the offer of the bidder(s) shall be summarily rejected. Hence, bidder(s) are advised to go through the bidding document carefully and tender be prepared with all the required documents to avoid rejection of offer.**

(Name of the Bidder with signature & seal)

## ELIGIBILITY CRITERIA

		Mentioned Page no.
01	Manufacturers or their authorized dealers/Indian subsidiaries/direct importers having a place of business in any of the States of India are eligible to participate in this tender.	
02	The bidder and manufacturer of the equipment offered should be in the business of the supply and installation of same / similar equipment for the last five calendar years.	
03	<p>(a) The manufacturer should have completed at least 05( Five ) nos. installations of the quoted items in Govt. /Pvt. Institutions /Hospitals in India. The installations mentioned by the manufacturer in their offer must be functional and performance certificate for the same issued by the user concerned also be attached with the offer.</p> <p>(b) The bids quoted as the authorized representative of the manufacturer meeting the above criteria 02 (a) should have also supplied and installed at least 03( Three) nos. installations of the quoted items in Govt. /Pvt. Institutions/ Hospitals in India in last five years from the last date of submission of tender. The installations mentioned by the authorized representative in their offer must be functional and performance certificate for the same issued by the user concerned also be attached with the offer.</p>	
04	The Bidder should be public undertaking /Autonomous Body /Public Ltd./Pvt. Ltd. Company or proprietary firm /Partnership Firm and should be in medical equipment business since last five years in India. The Bidders having manufacturing facility in their name in India for the majority of the items offered by them shall be given preference.	
05	The Bidder (manufacturer or their authorized agent) should have had average annual financial turnover of Rs. 50 Lakh during the last three years ending s 31 <sup>st</sup> March 2017.	
06	Bidders who have the capability to attend repairs of these equipment within the time mentioned in this bidding document and who are willing to provide stand by equipment or replace the faulty equipment if the repair/down time extends beyond 72 hours from the time of reporting of the fault within the next 48 hours (total down time should not exceed 5 days in one instance). The bidders who have the capability to ensure the uptime mentioned in this document (Documentary proof shall be submitted on the after sales facilities and expertise of the bidder.)	
07	Bidders are not offering the equipment of a firm /company that has been blacklisted by Indira Gandhi Institute of Medical Sciences – Patna or blacklisted/debarred by any other State / Central Government's organization.	

**Note:** Notwithstanding anything stated above, the Institute reserves the right to assess the Bidder's capability and capacity to perform the contract satisfactorily before deciding on award of contract, should circumstances warrant such an assessment in the overall interest of the purchaser.

- The Institute reserves the right to ask for a free demonstration of the quoted equipment at a pre determined place acceptable to the purchaser of technical acceptability as per the tender specification, before the opening of the price tender.

**INSTRUCTION TO BIDDER**



## GENERAL INSTRUCTIONS TO BIDDERS

### 1. **Tendering System**

The tenders/Bids are to be submitted in two Parts i.e. **Part - I & Part II.**

**PART - I titled as TECHNICAL BID** shall contain the complete technical specifications and details on the competency of the bidder and also the commercial bid package with terms and conditions of supply, warranty, after sales service etc. (Except Price Bid Form). Apart from the documents and signed copy of the purchased tender document, the necessary enclosures should be submitted in this technical bid. In short, the technical bid should contain all the necessary documents to prove the technical competency and capability of the bidders for supplying and installing a trouble free equipment meeting the quality standards and technical specification and the ability of the bidders for providing efficient after sales service to the satisfaction of the Tender Inviting Authority and the user institution.

### **PART - II titled as PRICE BID shall be submitted in the E- tender mode only**

2. The tender offers, duly filled, shall be submitted in sealed covers for **technical**. Such covers shall be super scribed as “**Tender No..... (here mention the tender no as specified) TECHNICAL BID for supply of ..... (here mention the name of the equipment**

3. Quantity of items may increase or decrease. Director, I.G.I.M.S. - Patna reserves the rights to purchase different sub items/ components of items from different bidders.

This rate Contract will be valid for one FY and repeat Supply Order will be placed as per requirement of the deptt. of all the quoted and approved items.

4. As per SI No.5 below.

5. The “ Bidding Document” can be downloaded from institute website [www.igims.Org](http://www.igims.Org). In case, downloaded bidding document is used ,Bidder(s) have to submit the cost of the Tender Document alongwith the completed documents in the form of demand draft in favour of Director , IGIMS, Patna, payable at patna towards cost of the “ Tender documents” Bidder is required to attach seprate D D for the same in a seprate envelop super scribed with “ cost of bidding document” if the cost of tender document is not submitted by the bidder, his offer shall be outright rejected .

6. Last date for purchase of bidding document is (As mentioned above).....

### 7. **Earnest Money Deposit (EMD):**

**EMD cost of Equipment wise mentioned in the Tender Notice is required** to be submitted along with tender by Demand Draft from any scheduled Indian Bank ( valid up to one year from the date of technical bid opening.) only along with the tender favoring Director, I.G.I.M.S. – Patna (payable at Patna). No interest is payable on EMD/ Bid security.

b. Bidder may quote more than one/several models. In such a situation EMD will be payable on the basis of highest priced model.

c. EMD of the unsuccessful bidders will be returned to them at the earliest after expiry of final bid validity and latest on or before the 30<sup>th</sup> day after the award of the contract without any interest.

d. EMD must be submitted in separate sealed envelope and endorsement of the same with DD number & date Bank Guarantee No. and its validity period be made with technical bids without amount stating that the same has been complied with price bid. If same is later found not enclosed tender will be cancelled for the party.

e. Non- submission of sufficient EMD along with the Technical Bid shall be one of the primary reasons for rejection of the offer in the first round.

- f. Cheque, Cash payment, Money Order, Fixed deposit etc will not be accepted as EMD.
- g. Public Sector Units within the State or State micro, small and medium enterprises registered with Govt. are exempted from remittance of EMD subject to submission of valid documents.
- h. The EMD shall be in one of the following forms:
  - i. A demand draft in favour of Director, I.G.I.M.S. – Patna (payable at Patna);
    - OR**
    - ii A Bank Guarantee issued by a nationalized/ scheduled bank located in India, in the form prescribed in the tender document as Annexure- IV (valid up to one year from the date of technical bids opening) Bank Guarantee in any other format will not be acceptable and render the bid non-responsive.
    - iii. The successful Bidder's EMD will be discharged upon the Bidders signing the contract and furnishing the performance security. The EMD deposited in the form of DD of the successful Bidder can be adjusted towards the security deposit payable.
- 8. Bidder(s) should mention the DGS & D registration, if registered, and attach photocopy of DGS & D registration certificate Photocopy of Income tax & sales tax clearance certificate should be enclosed.
- 9. For Imported Goods, Indian Agency Commission must be declared in financial bid.
- 10. The Bidder's shall have to submit the following documents (Certified by Notary) in technical bid: -
  - a. User List (List of Govt. / Semi Govt., Reputed Pvt. Hospital) where quoted model of the items has been supplied and installed.
  - b. Performance certificate of the same supplied machine (of quoted make and Model) issued by **Head of the deptt. or Institution** after a minimum period of six months of installation.
  - c. Prerequisite (if any) for installation of the Machine if any to be provided by the Institute.
  - d. If the manufacturing company and/or its Indian agent (for Foreign manufactured) have authorized some agency for participation in this tender for a limited period than in that case they (Manufacturer / Indian agent) shall have to submit an undertaking duly notarized by Public notary that if their tender is selected they shall be solely responsible for compliance of all the terms and conditions mentioned in the bilateral agreement for purchase and subsequent supply order even if their authorized agent is changed. Any tender offer without such certificate duly certified by public notary shall be rejected in technical scrutiny itself.
  - e. Bidder must submit a compliance checklist along with the technical bid itself.
  - f. (Any tender offer without submission of above mentioned document (i.e. a to e) shall be rejected during technical scrutiny.)
  - g. If any new System/ Latest model machine is a launched in the market and seller has not installed such quoted models they should submit an undertaking that he has not installed such models previously (Notarized by Public Notary). They may submit supply order / performance certificate of previous model, which was recently installed by them.

#### **11. Installation & site plan:-**

Requirement regarding site/location etc for installation of equipment, if any, should be mentioned in the tender. Time required for installation of system after delivery must be mentioned. In case of delay in installation institute will have right to charge liquidated damage. Specify the following points for installation of the System: -

- a. Total power consumption along with break up of main System and Accessories.
- b. Whether the System needs uninterrupted power supply where ever applicable.
- c. Maximum tolerated transfer time in case of interruption of power supply.
- d. Whether the System needs any humidity control device.

- e. Whether the System needs any separate power line/isolation Transformer.
- f. Does the System need the electrical shielding?
- g. Does it require special civil works for installation?
- h. Whether Air conditioner is an essential requirement for the system.
- i. Does it require any special civil works for Installation?

12. **After Sales Service Conditions:**

- a. The Institute is in the pursuit of ensuring excellent after sales service for every user in respect of the equipments supplied under this contract. The after sales services terms and conditions will be strictly enforced and those Bidders who are willing to support the Institute in its endeavor to provide trouble free operation/performance of the equipments for the prescribed period need only participate in the tender.
- b. The after sales service shall be performed during the warranty period and also during the Comprehensive Maintenance Period (CMC)/ Annual Maintenance Contract, if awarded. The detailed terms and conditions for after sales service are mentioned hereunder.

**c. Guarantee/Warranty Terms:**

- i. The successful Bidder has to warrant that the Goods supplied under this Contract are new, unused, of the most recent or current models and incorporate all recent improvements in design and materials unless provided otherwise in the Contract.
- ii. The successful Bidder further have to warrant that the Goods supplied under this Contract shall have no defect arising from design, materials or workmanship (except when the design and/or material is required by the Tender Inviting Authority's specifications) or from any act or omission of the successful Bidder, that may develop under normal use of the supplied goods.
- iii. All the equipments including the accessories supplied as per the technical specification as mentioned in the bidding document should carry comprehensive warranty (including all spares, accessories and consumables) for a period mentioned in this document in the first instance. During this period, the successful Bidder shall replace all defective parts / accessories / consumables and attend to all repairs/break downs and undertake stipulated number of preventive maintenance visits to every user installation site. The cost of spare parts for all replacements has to be borne by the successful Bidder during the period of comprehensive warranty. The items which are not covered under warranty should be clearly mentioned along with rate of the items . If any spares / accessories / consumables etc. are not replaced by the bidder during warranty period, bidder should mention it clearly with name of the items with frequency of replacement and its rate
- iv. On expiration of the comprehensive warranty period, the successful Bidder shall be willing to provide after sales support for an additional period prescribed in this document.
- v. The prospective Bidder, who are not manufacturers, shall submit an undertaking from the Original Equipment Manufacturers (OEM) that they are willing to provide spare parts for the period of warranty as mentioned and also during the additional CMC/AMC period, if awarded. The OEM shall also assure continuity of service to their product, in the event of change in dealership or the Bidders – their existing dealers - couldn't provide service during the warranty / CAMC period. The undertaking from OEM is an essential document forming part of the Technical Bid, without which the tenders will be rejected summarily in the first round itself.
- vi. After sales service centre in Patna (Bihar) preferably or at least in East India should be available as part of the pre-qualification and the Bidder shall provide proof of their capability to undertake such maintenance/repair within the stipulated time.
- vii. The successful Bidder shall provide preventive maintenance as per the frequency mentioned in this document during the warranty period. The Bidder shall attend any number of break down/repair calls as and when informed by the institute authority.
- viii. Upon receipt of such notice for repair/breakdown from the institute, the successful Bidder shall, within the period as specified in this document, and with all reasonable speed, repair or replace the defective goods or parts thereof, without cost to the Tender Inviting Authority.

- ix. If the successful Bidder, having been notified, fails to rectify the defect(s) within the period specified mentioned in this document, the Tender Inviting Authority may proceed to take such remedial action as may be deemed necessary, at the successful Bidder's risk and cost and without prejudice to any other rights which the Tender Inviting Authority may have against the successful Bidder under the contract.
- x. Failure to attend the repairs in time or failure to attend the stipulated preventive maintenance visit or failure to replace the defective equipments or to provide stand by equipment if the fault/down time exceeds the stipulated period or to ensure the stipulated up-time in an year shall lead to forfeiture of the performance security and/or may lead to blacklisting/debarring of the defaulting Bidder.
- xi. The equipment which requires quality assurance test shall be done at free of cost immediately after installation, during the comprehensive warranty period, during the CMC/AMC period, by the demand of User and also when major spares are replaced.
- xii. Any mandatory approval required for installation shall be obtained by the successful Bidder in liaison with the respective authorities.
- xiii. The Bidder shall submit the parameters which require calibration and the frequency of calibration required.
- xiv. The Bidder shall undertake on-site calibration of the equipment every year as part of the after sales service during the period of comprehensive warranty, CMC/AMC or on demand from the user.
- xv. The Bidders shall also have to submit whether periodic replacements of consumable items are required for proper functioning of their quoted machine/Equipment? If yes they should submit the list of such consumables along with price list and frequency of replacement per year, if the same is not replaced free of cost during warranty / guarantee period.
- xvi. An undertaking of the principal regarding continuity of after sales and services (CAMC) @ the agreement rate even in case of changes of Indian agent during the life span of the equipment, must be enclosed in the technical bid. Further, it will be the responsibility of the manufacturer Indian agent to get counter signature on the agreement to be executed with them by the principal.
- xvii. The offered warranty includes:
  - Visits to the user institutions at frequencies prescribed as part of preventive maintenance.
  - Testing & calibration as per technical/service/operation manual of the manufacturer or as per the period specified or as per the demand of the user.
  - Quality Assurance tests (if applicable).
  - The cost of labour for all repairs/ and all spares required for replacement during repairs all kinds of accessories, Probes, all types of sensors and transducers, Electrodes, Detectors, battery, battery for UPS, other vaccumatic parts etc wherever applicable and also the accessories and other devices supplied along with the equipments like stabilizer, UPS, AC, Computer, Compressor, Monitor, etc, which forms part of the equipment system, without which it cannot perform satisfactorily.
  - The exclusion of warranty of any vital equipment parts will be compared with offers of other Bidders during evaluation of the bids and this may be taken into consideration in deciding the successful Bidder on the basis of expert advice.
  - The Bidder shall provide up-time warranty of complete equipment as mentioned in this document, the uptime being calculated on 24 (hrs) X 7 (days) basis failing Warranty period will be extended for every additional day of down time equal to one week.
  - All software updates, if any required, should be provided free of cost during Warranty period.

**d. Comprehensive Annual Maintenance Contract:**

- The decision to enter into CMC or AMC will be determined on the basis of cost and complexity of the equipment by the Tender Inviting Authority, at its discretion, prior to the expiration of warranty period.
- The Comprehensive Maintenance Contract (CMC) is otherwise an extended warranty. All the terms and conditions agreed by the successful Bidder for executing the comprehensive warranty of the equipment shall be extended during the period of CMC, only difference being the payment of CMC charges is absent during the period of comprehensive warranty.
- The cost of CMC, accessories and spares, reagents and consumables as in case may be quoted along with taxes applicable, if any. The taxes to be paid extra, to be specifically indicated. In the absence of any such stipulation the price will be taken inclusive of such taxes and no claim for the same will be entertained later.
- Failure/refusal on the part of the successful tender supplying/installing the equipments to enter into CMC with the Tender Inviting Authority, at the end of the Comprehensive Warranty Period, if the Institute, as the case may be, desires so, shall lead to forfeiture of performance security and may also result in the blacklisting/debarring of the Bidder.
- The successful Bidder shall also indicate the rates for the CMC in price bid form and such rates are binding on the successful tenders after the expiration of the warranty period. The yearly rates for CMC shall remain the one and the same as quoted in the price bid form for the extended years.
- Cost of CMC (excluding taxes, if any) will be considered for Ranking/Evaluation purpose.
- The payment of the agreed CMC charges will be made as per frequency for payment after satisfactory completion of said period, on receipt of service report/ break down report from the user.
- The Bidder shall also have to submit whether periodic replacement of consumable items are required for proper functioning of their quoted machine/Equipment? If yes they should submit the list of such consumables along with price list and frequency of replacement per year if the same is not included in quoted Comprehensive Annual Maintenance Contract charges per year.

13. **Time Limits prescribed**

Sl. No	Activity	Time Limit
a.	Installation & Delivery period	12 weeks from date of issuance of Supply Order
b.	Comprehensive warranty period	3 years from the date of successful installation.
c.	CMC period	7 years
d.	Frequency of visits to all User Institution concerned during Warranty/CMC	One visit every three months (4 visits in a year) for periodic/preventive maintenance and any time for attending repairs/break down calls.
e.	Frequency of payment of CMC charges	Every six months after completion of the Period.
f.	Submission of Performance Security and entering into contract	10 days from the date of issuance of Letter of Intent
g.	Maximum time to attend any Repair call	Within 24 hours.
h.	Uptime in a year during warranty as well as during CAMC period.	95% of 365 days.

14. Firm have to provide a minimum **UPTIME GUARANTEE** of 95% (95% of 365 Days) per year during the warranty period as well as during the Comprehensive Annual Maintenance Contract.
15. While calculating the total unit price of the item / system to be procured, expenditure to be incurred in maintenance of the quoted item / system including all spare parts for a total period of seven years after expiry of the warranty period of three years shall also be taken into consideration. Accordingly, it is

mandatory for the bidders to submit the rate for Comprehensive Annual Maintenance Contract (with spares) for a minimum period of seven years after the expiry of warranty period of three years.

16. Supplier will submit undertaking for ensuring uninterrupted supply of spares during the total life span of the equipments.
17. Indian agency commission and Installation charge if any will be paid in Indian rupees after successful installation and demonstration of the equipments.
18. Principal's Invoice of the quoted items must be submitted with the quotations.
19. Proof of the official Indian agent certificate of the firm must be attached. (Notary Certified Photocopy)
20. In order to fully and optimally utilize the equipment, training to Para Medical Staffs and Doctors should be provided. In continuation to this training, separate maintenance training for the machine and the sub systems should also be given to the "Equipment Maintenance Engineer" and "Equipment Maintenance Technicians". All the financial commitments in this regard shall be met by the bidder(s).
21. Bidder(s) have to submit an affidavit to the effect that they have not supplied the offered item(s) to any Govt., semi Govt. / Pvt. Organization, Institution, Nursing Home etc. at the price lower than the price offered to I.G.I.M.S. – Patna.
22. All the claims regarding meeting the specifications shall be duly supported by appropriate, latest technical catalogues/brochures from the manufacturer. Simply stating that the equipment(s) meets the specifications is not sufficient and any such quotations will be summarily rejected. Computer printed documents or Photostat copy or laser printouts will not be accepted as technical catalogues / brochures.
23. Bidder might be required to demonstrate the system at the discretion of the institute.
24. **Notification of Award/Letter of Intent (LOI)**
  - a. Before expiry of the tender validity period, the Institute will notify the successful Bidder(s) in writing, by registered / speed post or by fax or by email (to be confirmed by registered / speed post immediately afterwards) that its tender for equipment(s), which have been selected by the Institute, has been accepted, also briefly indicating there in the essential details like description, specification and quantity of the goods & services and corresponding prices accepted. This notification is undertaken by issuing a Letter of Intent (LOI) by the Institute.
  - b. The successful bidder, upon receipt of the LOI, shall furnish the required performance security and submit an agreement in the prescribed format within ten days, failing which the EMD will forfeited and the award will be cancelled.
  - c. The Notification of Award shall constitute the conclusion of the Contract.
25. **Signing of Contract**

The successful bidder shall execute an agreement for ensuring satisfactory supply, installation, commissioning and the after sales service/support during the warranty period and during the Comprehensive Annual Maintenance Contract.
27. The Director reserves the right to accept or reject any or all tenders without assigning reasons.
28. The Director reserves the right to modify, add or delete any terms & conditions of the contract as and when required.
29. **Amendment of tender documents:**
  - a. At any time prior to the dead line for submission of Tender, the Institute may, for any reason, modify the tender document by amendment.
  - b. The amendment shall be notified and uploaded on the institute website [www.igims.org](http://www.igims.org) only and such amendments shall be binding on them thereafter.
  - c. The Institute shall not be responsible for failure to inform the prospective bidders. Purchasers of tender documents are requested to browse the website of the Institute for information/general notices/amendments to tender document etc on a day to day basis till the tender is concluded.
30. The Dispute, if any, will be subject to Jurisdiction at Patna (Bihar).

**Director,  
I.G.I.M.S. - Patna**

## CONDITIONS OF THE CONTRACT

### **01. Duty Free Clearance, Transportation, Forwarding & Handling Charges:**

Clearance charges at point of Entry / Air Port and on ward transportation charges with Insurance upto I.G.I.M.S. - Patna will be borne by supplier's Indian Agent for which this Institute will not pay the charges.

### **02. Demurrage, Taxes & Octroi:**

No demurrage charges will be paid by the Institute in case of delay on the part of supplier. However, this Institute will provide all necessary documents required for clearance / transportation of the goods and for exemption of the taxes/octroi for which supplier/Indian agent will have to intimate/furnish his requisition of document required, if any, well in advance. Octroi will be payable by supplier / Indian agent, if required.

### **03. Warranty Period:**

- a. The “**Complete System**” shall remain under warranty period of **three years** from the date of satisfactory installation. The Complete System should include the basic unit and allied supporting components like UPS, Computer System, Printer, De-ionizer, Dehumidifier etc to be supplied by the bidder along with basic unit.
- b. During warranty period of three years, bidder shall provide at least **four maintenance visits per year** at regular interval for usual maintenance and supervision. If bidder fails to provide these maintenance visits at regular interval, a proportionate deduction in the form of penalty on pro-rata basis will be recovered from the bidder from the Bank Guarantee amount. In case the Bank Guarantee is not adequate, Institute shall have right to recover the losses / penalty from other sources as well.
- c. Bidder shall also attend all breakdown calls within 48 hours of the receipt of the information from institute through fax/e-mail/mobile/sms etc.
- d. During warranty period, **bidder** shall maintain and keep **95% uptime** per year of the “**Complete System**” as per calculation given below:-  
  
$$1 \text{ Year} = 365 \text{ days}$$
$$95\% \text{ of } 365 \text{ days} = 347 \text{ Days per annum}$$
- e. The bidder shall compensate the uptime less than the specified above for **every additional day** of down time over and above 18 days stipulated above, warranty period will get extended by one week as penalty at no extra cost i.e. the extended penalty period will be equal to one week for every additional day of down time.
- f. During warranty period, **bidder** will make the “**Complete System**” in satisfactory working condition. In case, any spare parts, accessories, etc. needs replacement due to normal wear and tear, **bidder** will supply and install the same for which no additional payment is to be made with a validity to cover warranty period.
- g. In case, the **bidder** is not able to provide services (and the items / accessories is not functioning as the reason thereof) due to natural calamity (act of God), Political unrest, Riot and fire at the user site, then in such a situation the warranty period will be extended by the period for which the item / accessories could not be operated because of supplier not been able to provide services.
- h. During warranty period, in case of any alleged damage due to accident / human error, a committee under the Chairmanship of Director, I.G.I.M.S. – Patna with one member from the bidder and one member from the Institute will decide the authenticity of the claim. The decision of the committee shall be final and binding on both the parties.

### **04. After Sales Services: -**

- a. After expiry of the warrantee/Guarantee period of the equipment, the Indian agent will have to undertake the Comprehensive Annual Maintenance contract (with spare parts, accessories, etc.) of the Complete System for the further life span of equipment. The life span of the equipment shall not

be less than ten years. In special circumstances the total life span of the Equipment/ items may be reduced by the Institute.

- b. The Complete System should include the basic unit and allied supporting components like to be supplied by the bidder along with basic unit.
- c. During Comprehensive Annual Maintenance Contract, bidder shall provide at least **four maintenance visits per year** at regular interval for usual maintenance and supervision. If bidder fails to provide these maintenance visits at regular interval per year, a proportionate deduction in the form of penalty at the rate of 25% of contract amount per year will be deducted.
- d. Bidder shall also attend all breakdown calls within 48 hours of the receipt of the information from institute through fax/e-mail/mobile/sms etc.
- e. During Comprehensive Annual Maintenance Contract, **bidder** shall maintain and keep **95% uptime** per year of the “**Complete System**” as per calculation given below:-  
1 Year = 365 days  
**95% of 365 days = 347 Days per annum**
- f. The bidder shall compensate the uptime less than the specified above for **every additional day** of down time over and above 18 days stipulated above, warranty period will get extended by one week as penalty at no extra cost i.e. the extended penalty period will be equal to one week for every additional day of down time.
- g. During Comprehensive Annual Maintenance Contract, **bidder** will keep the “**Complete System**” in satisfactory working condition. In case, any spare parts, accessories etc. needs replacement due to normal wear and tear, **bidder** will supply and install the same for which no additional payment is to be made. **.If any spares / consumables / accessories etc. are not covered under Comprehensive Annual Maintenance Contract charges, it should be clearly mentioned with frequency of replacement and with rate. The validity of rate of such items should also be mentioned clearly. What will be the rate of escalation on the quoted rate after expiry of the validity of rate of such item must be mentioned.**
- h. The payment of Comprehensive Annual Maintenance Contract will be made on half yearly basis after submission of satisfactory functioning report of the Complete System by the officials authorized by the Institute.
- i. In case, the **bidder** is not able to provide services (and the items / accessories is not functioning as the reason thereof) due to natural calamity (act of God), Political unrest, Riot and fire at the user site, then in such a situation the Comprehensive Annual Maintenance Contract will be extended by the period for which the item / accessories could not be operated because of supplier not being able to provide services.
- j. During Comprehensive Annual Maintenance Contract, in case of any alleged damage due to accident / human error, a committee under the Chairmanship of Director, I.G.I.M.S. – Patna with one member from the bidder and one member from the Institute will decide the authenticity of the claim. The decision of the committee shall be final and binding on both the parties.

#### 05. Performance Security

- a. There will be a performance security deposit amounting to 10 % of the total value of the equipment excluding taxes, which shall be submitted by the successful bidder within 10 days from the date of issuance of “Letter of Intent”.
- b. The contract duly signed and returned to the Institute shall be accompanied by a demand Draft or Bank Guarantee in the prescribed format.
- c. Upon receipt of such contract and the performance security, the Institute shall issue the Supply Orders containing the terms and conditions for the execution of the order.
- d. Failure of the successful bidder in providing performance security as mentioned above and / or in returning contract copy duly signed in time shall make the bidder liable for forfeiture of its EMD.
- e. The Performance security shall be denominated in Indian Rupees or in the currency of the contract as detailed below:



- i. It shall be in any one of the forms namely Account Payee Demand Draft or Bank Guarantee issued by a Scheduled bank in India, in the prescribed form as provided in this document endorsed in favour of the Institute.
- ii. Institute will release the Performance Security without any interest to the successful bidder on completion of the successful bidder's all contractual obligations including the warranty obligations & after receipt of certificates confirming that all the contractual obligations have been successfully complied with.

**b. 06. Delivery period/Liquidated Damage: -**

Goods should be delivered within three months after receipt of irrevocable and confirmed Letter of Credit. If the delivery is not affected by due date, the Director, I.G.I.M.S. - Patna shall have the right to charge liquidated damage on supplier/his Indian agent as under: -

- i. 1<sup>st</sup> extension for a month or a part thereof @ 2% per month of C.I.F. value.
- ii. 2<sup>nd</sup> extension for an additional month or a part thereof @ 3% per month of C.I.F. value subject to maximum Limit of 20% of the order items. All expenses incurred for extension of L.C. will be borne by supplier/his Indian agent.
- iii. Cancellation.- If delivery is not done even after 2<sup>nd</sup> extension Institute shall have the right of cancellation of Supply order at its discretion..

**07. Payment: -**

100% payment through International Irrevocable Letter of Credit in favour of principal abroad, but 80% will be released on shipment of goods & balance 20% after satisfactory installation of equipment on submission of Bank Guarantee of value not less than 20% of the cost of the quoted equipment (with a minimum validity to cover up the warranty / guarantee period) will be submitted by supplier. This Bank Guarantee will be released after expiry of guarantee period.

- a. In case, the equipment is purchased in Indian Currency then the payment will be made as per following scheduled.
- b. 90% payment will be released against delivery and successful installation of the equipment & balance 10% will be released on submission of 10 % Bank Guarantee of the total cost of ordered value. This Bank Guarantee will be released after expiry of guarantee period.
- c. L. C. will be opened only after receipt of the 20% bank Guarantee of the total cost of equipment (with a minimum validity to cover up the warranty / guarantee period), confirmation letter of all our terms and condition, submission of agency certificate in favour of Indian agent who have submitted and quoted the price, name of the Bankers abroad; intimation about country of origin and 10 copies of Performa invoice of the ordered item. Indian Agency commission will be paid in Indian currency only to Indian agent, if any. No extra charges will be paid for installation/demonstration and training to personnel.

**08. Validity of Price:-**

Minimum up to one year from date of tender submission and it should be extendable.

- 09. Part Supply:** No part supply/ wrong supply or short supply will be accepted by the Institute. The Director IGIMS, Patna will be the final authority and will have the right to reject full or any part of supply, which is contradictory to the terms and conditions agreed at the time of placement of order. In case of rejection of any supplied items due to nonconformity in quantity and/or quality, Institute will have right to charge liquidated damages, as it deems fit

10. **Packing & Marking:-**

Goods must be securely and adequately packed and protected in order to prevent damage, otherwise all losses and /or damage resulting from inadequate packing and/or inadequate protection or inadequate marking shall be borne by seller/seller's Principal abroad.

11. Supplier may have to provide required manpower for running the equipments at mutually agreed remuneration (Which shall not be more than remuneration payable for the particular category of staff at IGIMS) at the sole discretion of the Institute, till institute is able to arrange its own staff for the purpose.

12. **Insurance: -**

Insurance up to Patna will be borne/arranged by principal supplier/his Indian Agent.

13. **Installation & site plan:**

Requirement regarding site/location for installation of equipment, if any, should be mentioned in the tender. Time required for installation of system after delivery must be mentioned. In case of delay in installation institute will have right to charge liquidated damage.

Specify the following points for installation of the System: -

- a. Total power consumption along with break up of main System and Accessories.
  - b. Whether the System needs uninterrupted power supply.
  - c. Maximum tolerated transfer time in case of interruption of power supply.
  - d. Whether the System needs any humidity control device.
  - e. Whether the System needs any separate power line/isolation Transformer.
  - f. Does the System need the electrical shielding?
  - g. Whether Air Conditioner is required for the System.
  - h. Does it require special civil works for installation?
14. The bidder should also quote for supply of "Un-Interrupted Power Supply" (UPS) with a battery back up of at least 30 minutes, "Constant Voltage Transformer (CVT)" of reputed manufacturer of required capacity along with Spike Suppressor or "Servo Voltage Stabilizer" as per requirement of the System. Bidder may quote the prices for all the above items (UPS/CVT/SERVO VOLTAGE STABILIZER) and the decision will be taken during technical evaluation of the item whether UPS is suitable or CVT / Servo Voltage Stabilizer will serve the purpose.

15. **Responsibility:-**

The principal as well as its agent will be severally and jointly responsible for ensuring the minimum life span of 10 years for the equipment. Both the said principal abroad and his Indian agent will have the full responsibility for the proper functioning of the equipment/instruments within the warrantee period and thereafter during the life span of the equipment

16. The bidder is required to provide list of persons (along with their permanent and correspondence address) owing more than 1% share ownership in the company/firm (both principle and Indian Agent).
17. The bidder is required to submit compliance sheet, which should reflect details of clause-by-clause compliance of technical specifications as well as general terms & conditions failing which their offer shall be rejected.

18. In order to fully and optimally utilize the equipment, training to paramedical staff and Doctors should be provided. In continuation to this training a separate maintenance training for the machine and the sub system should also be given to the Equipment Maintenance Engineer and Maintenance Technicians of the Institute. All the financial commitment in this regard shall be met by the firm/Principal.

**19. Penalties for non-performance**

The penalties to be imposed, at any stage ,under this tender are;

- a. imposition of liquidated damages,
- b. forfeiture of EMD/performance security,
- c. termination of the contract,
- d. Blacklisting/debarring of the bidder.

**20. Termination of Contract**

- a. Termination for default:- The Institute, without prejudice to any other contractual rights and remedies available to it (the Institute), may, by written notice of default sent to the successful bidder, terminate the contract in whole or in part, if the successful Bidder fails to deliver any or all of the goods or fails to perform any other contractual obligation(s) within the time period specified in the contract, or within any extension thereof granted by the Institute.
- b. In the event of the Institute terminates the contract in whole or in part, the Institute may procure goods and/or services similar to those cancelled, with such terms and conditions and in such manner as it deems fit and the successful bidder shall be liable to the Institute for the extra expenditure, if any, incurred by the Institute for arranging such procurement.
- c. Unless otherwise instructed by the Institute, the successful bidder shall continue to perform the contract to the extent not terminated.
- d. Termination for insolvency: If the successful bidder becomes bankrupt or otherwise insolvent, the Institute reserves the right to terminate the contract at any time, by serving written notice to the successful bidder without any compensation, whatsoever, to the successful Bidder, subject to further condition that such termination will not prejudice or affect the rights and remedies which have accrued and / or will accrue thereafter to the Institute.
- e. Termination for convenience: - The Institute reserves the right to terminate the contract, in whole or in part for its (Institute) convenience, by serving written notice on the successful bidder at any time during the currency of the contract. The notice shall specify that the termination is for the convenience of the Institute. The notice shall also indicate interalia, the extent to which the successful bidder's performance under the contract is terminated, and the date with effect from which such termination will become effective.

**21. Fall Clause:**

The prices charged for the equipment supplies under the contract by successful bidder shall in no event exceed the lowest price at which the successful bidder sells the equipments of

identical description to any other persons during the period of contract. If any time, during the contract, the bidder reduces the sales price chargeable under the contract, he shall forth with notify such reduction to the Institute and the price payable under the contract of the equipments supplied after the date of coming into force of such reduction or sale shall stand correspondingly reduced.

22. **Applicable Law & Jurisdiction of Courts**

- a. The contract shall be governed by and interpreted in accordance with the laws of India for the time being in force.
- b. All disputes arising out of this tender will be subject to the jurisdiction of courts of law in Patna (Bihar, India).

**Director,  
IGIMS - Patna**

**CHAPTER:**

**Schedule of the Requirement.**

**SCHEDULE OF THE REQUIREMENT**

<b>SI No</b>	<b>Name of the Department</b>	<b>Name of the equipment</b>
<b>Group</b>	<b>Name of Department</b>	<b>Name of Machine Equipments</b>
<b>A</b>		<b>As mentioned in the NIT</b>

**ANNEXURES**  
**Annexure - I (a)**

**PRICE SCHEDULED FOR DOMESTIC GOODS OR GOODS OF FOREIGN ORIGIN  
LOCATED WITHIN INDIA.**

1	2	3	4	5							6
				<b>Price per unit (Rs.)</b>							
Scheduled	Brief description of goods  Make: Model:	Country of origin	Qty. nos.	Ex-factory/ex-warehouse /ex-showroom/off-the shelf	Excise duty( if any) % and value.	Sales tax/vat( if any) % and value.	Packaging and forwarding charge	Inland transportation , insurance for a period including 3 months delivery, loading/unloading and incidental cost till consignee site.	Incidental services ( including installation and commissioning, supervision, demonstration and training) at the consignee site.	Unit price ( at consignee site basis(g)	Total unit price ( At Consignee Site) Basis Rs. 4x5(g)

Total quoted price in Rs. ....

In Words: .....

**Note:**

1. If there is a discrepancy between the unit price and total price THE UNIT PRICE shall prevail.
2. The charges for Annual CMC after warrantee shall be quoted separately as per price scheduled.

Place:

Name:

Date:

Business Address; -

Signature of Bidder;-

Seal of the Bidder;-

**Annexure: I (b)**

**PRICE SCHEDULED FOR GOODS TO BE IMPORTED FROM ABROAD**

1	2	3	4	5					6
				Price per unit ( CURRENCY)					
sche dule d	Brief descrip tion of goods  Make: Model:	Country of origin	Qty. nos.	FOB price at port/ Airport of loading	Carriage & Insurance ( port of loading to port of entry) and other incidental cost .	Incidental Services ( Including Installation & Commissioning, supervision, Demonstration And Training) at the consignee's site. ( C )	Extended Insurance ( Local transportation and storage) from port of entry to the consignee site for a period including 3 month beyond date of delivery .	Unit Price on CIP Named port of Destination + Extended Insurance (Local Transportati on and storage)	Total Price on CIP Named Port of Destination + Insurance ( Local Transportati on and storage)
				(a)	(b)	(C)	(d)	(e_)	4x5(e)

To be paid in Indian Currency (Rs) : .....

Total Tender Price in Foreign Currency:.....

In Words;-.....

**Note:-**

1. If there is a discrepancy between the unit price and total price THE UNIT PRICE shall prevail.
2. The charges for Annual CMC after warrantee shall be quoted separately as per price scheduled.
3. The Bidder will be fully responsible for the safe arrival of the goods at the named port of entry in goods condition as per terms of CIP as per INCOTERMS, if applicable

Indian Agent;-

Indian agency commission:        % of FOB

Name:

Signature of Bidder;-

Business address;-

Signature of Bidder

Seal of the Bidder;-

Place;-

Date



**Annexure – II**

**COMPREHINSIVE ANNUAL MAINTENANCE CONTRACT PRICES SCHEDULE**

S. No.	Item Description	1 <sup>st</sup> Yr.	2 <sup>nd</sup> Yr.	3 <sup>rd</sup> Yr.	4 <sup>th</sup> Yr.	5 <sup>th</sup> Yr.	6 <sup>th</sup> Yr.	7 <sup>th</sup> Yr.	Total Comprehensive Annual Maintenance Contract over a period of seven years after expiry of warranty period of three years from the date of successful installation. (a + b + c + d + e + f + g + h + i)
a	b	c	d	e	f	g	h	i	j
1.	Name of the Equipment:  Make:  Model:  Qty.:								
2.	Name of the Equipment:  Make:  Model:  Qty.:								

**Scope of Contract (details as mentioned in the Clause No. – 13 of “Instruction to Bidder” & Clauses No.: 3, 4 and 5 of “Condition of Contract”):**

- a) The rate of Comprehensive Annual Maintenance Contract as mentioned above should cover the Complete System. Complete System should include the basic unit and allied supporting components like UPS, Stabilizer, Computer System, Printer, De-ionizer, Dehumidifier etc to be supplied by the bidder along with basic unit.
- b) **Preventive maintenance visit:** Four Maintenance visits at regular interval for usual maintenance & supervision failing which 25% of the contract amount per visit would be deducted as penalty.
- c) **Break down maintenance visit:** As & when required
- d) **Response Time:** within 48 Hours.
- e) Uptime Guarantee: 95% of 365 days
- f) The above-mentioned charges should includes labour charges for maintenance and breakdown visits per year, spares, accessories and all type of consumables required for the maintenance of the supplied items. If any spares / consumables /accessories etc. are not covered under above-mentioned charges; it should be clearly mentioned with frequency of replacement and with rate. The validity of rate of such items should also be mentioned clearly. What will be the rate of escalation on the quoted rate after expiry of the validity of rate of such item must be mentioned.
- g) Payment of Comprehensive Annual Maintenance Contract would be made on half yearly basis after completion of work and satisfactory working report. In no case, advance payment is to be considered.

Seal and Signature of the bidder

ANNEXURE – III

**MANUFACTURER’S AUTHORISATION FORM**

(To be submitted by authorized dealers/representatives/importers)

No.

Dated:

To  
The Director  
Indira Gandhi Institute of Medical Sciences,  
Sheikhpura,  
Patna – 800 014 (Bihar, India)

Dear Sir,

Tender No :  
Equipment Name :

1. We ..... (name of the OEM) are the original manufacturers of the above equipment having registered office at ..... (full address with telephone number/fax number & email ID and website), having factories at \_\_\_\_\_ and \_\_\_\_\_ , do hereby authorize M/s. \_\_\_\_\_ (Name and address of bidder) to submit tenders, and subsequently negotiate and sign the contract with you against the above tender no..
2. No company or firm or individual other than M/s. \_\_\_\_\_ are authorized to bid, negotiate and conclude the contract in regard to this business against this specific tender.
3. We also hereby undertake to provide full guarantee/warranty /Comprehensive Annual Maintenance Contract as agreed by the bidder in the event the bidder is changed as the dealers or the bidder fails to provide satisfactory after sales and service during such period of Comprehensive Warranty / Comprehensive Annual Maintenance Contract and to supply all the spares/ accessories / consumables etc. during the said period.
4. We also hereby declare that we have the capacity to manufacture and supply, install and commission the quantity of the equipments tendered within the stipulated time.

(Name)  
for and on behalf of M/s. \_\_\_\_\_

Date: \_\_\_\_\_ (Name of manufacturers)

Place:

**Note: This letter of authority should be on the letterhead of the manufacturing concern and should be signed by a person competent and having the power of attorney to bind the manufacturer.**

**ANNEXURE – IV**  
**BANK GUARANTEE FORM**

To The Director  
Indira Gandhi Institute of Medical Sciences,  
Sheikhpura,  
Patna – 800 014 (Bihar, India)

WHEREAS \_\_\_\_\_ (Name and address of the supplier) (Hereinafter called “the supplier”) has undertaken, in pursuance of tender no \_\_\_\_\_ dated \_\_\_\_\_ (herein after called “the contract”) to supply The Director, Indira Gandhi Institute of Medical Sciences, (address) with ..... (description of goods and supplies).

AND WHEREAS it has been stipulated by you in the said tender/bid that the supplier shall furnish you with a bank guarantee by a scheduled commercial bank recognized by you for the sum specified therein as security for compliance with its obligations in accordance with the bid scopet;

AND WHEREAS we have agreed to give the supplier such a bank guarantee;

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

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

We undertake to pay you any money so demanded notwithstanding any dispute or disputes raised by the supplier(s) in any suit or proceeding pending before any Court or tribunal relating thereto our liability under these presents being absolute and unequivocal.

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

No action, event, or condition that by any applicable law should operate to discharge us from liability, hereunder shall have any effect and we hereby waive any right we may have to apply such law, so that in all respects our liability hereunder shall be irrevocable and except as stated herein, unconditional in all respects.

This guarantee will not be discharged due to the change in the constitution of the Bank or the Supplier(s).

We, \_\_\_\_\_ (indicate the name of bank) lastly undertake not to revoke this guarantee during its currency except with the previous consent, in writing, of The Director, Indira Gandhi Institute of Medical Sciences, Patna (Bihar). This Guarantee will remain in force up to (Date). Unless a claim or a demand in writing is made against the bank in terms of this guarantee on or before the expiry of (Date) all your rights in the said guarantee shall be forfeited and we shall be relieved and discharged from all the liability there under irrespective of whether the original guarantee is received by us or not.

(Signature with date of the authorized officer of the Bank) .....  
Name and designation of the officer

.....

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

**ANNEXURE - V**

**POWER OF ATTORNEY**

**(On a Stamp Paper of relevant value)**

I/ We.....(name and address of the registered office) do hereby constitute, appoint and authorise Sri/Smt ----- (name and address) who is presently employed with us and holding the position of ..... as our attorney, to act and sign on my/our behalf to participate in the tender no..... for ..... (Equipment name).

I/ We hereby also undertake that I/we will be responsible for all action of Sri/Smt..... undertaken by him/her during the tender process and thereafter on award of the contract. His / her signature is attested below

Dated this the \_\_\_ day of 201\_ For \_\_\_\_\_

(Name, Designation and Address)

Accepted

\_\_\_\_\_  
(Signature) (Name, Title and Address of the Attorney)

Date : \_\_\_\_\_

## GROUP A (ENT)

### a. Specification of Modular Operation Theatre

S. No.	Technical Details	Qty.	Unit
1.	<p><b>WALL &amp; CEILING PANEL</b></p> <p>The Pre-fabricated operating room will be free standing structure, construction from composite, free standing insulated wall panels.</p> <p>The room wall panel will have two independent surfaces with a minimum opening in between. The inner surfaces walls will be constructed with 0.80mm thick Stainless Steel SS 304 with proper support. These panels will be produced in a double band laminator in which continuously moving belts of 0.80mm thickness are firmly bonded together by the sprayed in insulating foam, which hardens during this process.</p> <p>The wall panels design and construction will allow for the installation and support of all equipment and the provision of opening required for the installation, without affecting rigidity and strength.</p> <p>All the four corners will have return air duct outlets, the grill of which will be made of MS steel, duly powder coated with colour choice to suit the hospital.</p> <p>The surface will be highly scratch resistant, impact resistant, abrasion resistant and long lasting.</p> <p>The core between two panels will consist of polyurethane foam, which has been injected under high pressure, with a minimum density of 40kg/m. The wall will be modular in construction, consisting of 1180mm,875mm,570mm and 265mm wide panels, together with corner panels 200x200mm to achieve the desired false ceiling height. The thickness of the complete panel, including the core will be a minimum of 50mm.</p> <p>The Modular panels are installed upon floor using a:U” channel. Each pre-fabricated operating Room may optionally include sloping ceiling panel at an angle of 45 degree from the straight wall panel edge. These options reduces the overall volume of the room, decreasing the running costs for air-conditioning and ventilation, while at the same time maintaining the necessary height at the centre of the room for the installation of ceiling mounted equipments.</p> <p>The inner surface of the operating theater will be seamless, free from visible joints and shape edge,. All internal corners and panels joints will be filled with proper Epoxy filler, sanded flush or ready to use on site, ready to receive the sterlise plastic finish. All panels will be invisible when the plastic coating is applied.</p> <p>The wall panels will be mounted on the existing wall structure using the necessary steel frame work. The wall panels will be easily removable for catering to serve related needs.</p> <p>Storage cabinets to store drugs and other anaesthesia / surgical accessories etc. to be provided. – Preferably two nos. in each O.T.</p>	2	Set
2.	<p><b>ANTIBACTERIAL PAINT</b></p> <p>Filling of all Joints and Cavities with Metallic Epoxy filler and sanded flush to provide a joint less finish and then sprayed with a water based liquid plastic aseptic and self - sterilizing wall coating system to a d.f.t of 300 microns with primer. Paint is a superior quality, special acrylic based emulsion paint with an advanced HCT formula that can withstand hairline cracks normally associated with internal cement plastered walls. Paint is lab tested as having a stretch</p>	2	Set

	tolerance of between 0.1 mm to 1 mm. It has excellent flow properties and washability. This paint has very good opacity and leveling thereby creating a high-class finish, also offers resistance against Bacterial and fungal growth on interior walls and is approved by Ministry of Health.		
3.	<p><b>ANTISTATIC FLOORING including self levelling, copper taping and connection to the earthing.</b></p> <p>Conductive, vinyl floor covering in accordance with EN 1081 (<math>104 \leq R_t \leq 106</math>) and is available in 2m roll widths. The 2 mm homogeneous material incorporates carbon encapsulated granules throughout its full thickness and has a conductive backing to ensure optimal and constant conductive properties throughout its full life expectancy.</p> <p>The product has excellent resistance to static and rolling loads and is classified 34-43 in accordance to EN 649.</p> <p><b>DESCRIPTION</b></p> <p>Total thickness : 2mm (EN428)  Weight: 3440 g/m<sup>2</sup> (EN430)  Width/Length of sheet (EN426)</p> <p><b>CLASSIFICATION</b></p> <p>Norm / Product specification (EN649)  European classification : 34-43 class (EN685)  K rating: K5  Fire rating: Bfl-s1 (EN13501-1)  <math>5 \times 10^4 \leq R_t \leq 106</math> (EN1081)  Electrical resistance: <math>R_t \leq 108\Omega</math> (IEC 61340-4-1)  <math>2.5 \times 10^4 \leq R_t \leq 106</math> (ANSI / ESD 7.1)  &lt; 2 kV (EN 1815)  Static electrical propensity  Slip resistance wet: &lt; 20*V(IEC 61340-4-5)</p> <p><b>PERFORMANCE</b></p> <p>Wear resistance: <math>\leq 4.0\text{mm}^3</math>(EN660.2)  Wear group : p group (EN649)  Dimensional stability: Tile <math>\leq 0.25\%</math> (EN434)  Residual indentation: 0.03mm (EN433)  Thermal conductivity: 0.25W/(m.K) (EN12 524)  Colour fastness: <math>\geq 6</math> (EN 20 105-B02)  Chemical resistance: Good (EN423)  Anti-bacterial &amp; fungicidal: OK</p> <p><b>CE MARKING</b></p> <p><b>Installation</b></p> <p>The material must be allowed to acclimatise 24 hours before installation in a room temperature of between 18-24°C. All seams must be heat welded using weld rod.</p> <p><b>Maintenance</b></p> <p>Maintenance will be carried out regularly to retain the appearance and durability of the floor. The floor covering will be maintained with regular sweeping and damp mopping using a neutral cleanser, or machine scrubbing with an appropriate pad. Further maintenance instructions are available upon request. Rubber leaves indelible stains on vinyl flooring: do not use mats with rubber backing and replace tubular furniture feet with those made of PVC or polyamide.</p> <p><b>Controlling Discharges</b></p>	2	Set

<ul style="list-style-type: none"> <li>• Floor coverings guarantee the lasting elimination of electrostatic charges, while taking into account the safety of people.</li> </ul> <p><b>Low Accumulation of Charges</b></p> <ul style="list-style-type: none"> <li>• Floor coverings guarantee a low accumulation of electrostatic charges to people and equipment.</li> </ul> <p><b>Mechanical resistance</b></p> <ul style="list-style-type: none"> <li>• The homogeneous and compacted surface provides an enduring resistance to static and dynamic loads.</li> </ul> <p><b>Chemical resistance</b></p> <ul style="list-style-type: none"> <li>• Floor coverings display excellent resistance to chemical products such as detergents, acids and alkaline products.</li> </ul> <p><b>Minimum gas emission</b></p> <ul style="list-style-type: none"> <li>• Low VOC emissions.</li> </ul> <p><b>Decontamination</b></p> <ul style="list-style-type: none"> <li>• Floor coverings are rated as "good" in compliance with ISO 8690 the nuclear decontamination standard.</li> </ul> <p><b>Fully hygienic</b></p> <ul style="list-style-type: none"> <li>• Fungi static and bacterio static treatment throughout total thickness of flooring.</li> <li>• Floor covering is non-absorbent, impervious and non-porous.</li> <li>• Can be hot welded and installed with a coved skirting for easy cleaning.</li> </ul> <p><b>Access flooring with laminar flow</b></p> <ul style="list-style-type: none"> <li>• Roll are especially well suited to "high-tech" applications and are designed to be compatible with access flooring in clean rooms with laminar flow.</li> </ul> <p><b>Low risk of particulate contamination</b></p> <ul style="list-style-type: none"> <li>• The roll meets the high requirements of particulate contamination set by electronic industry due to the low release of carbon particles.</li> </ul> <p><b>Static electricity</b></p> <p>Static electricity is everywhere. At its most spectacular, we see thunderbolts and lightning but it is also generated by friction and by the separation of two differing materials where one is not a conductor. This produces a build-up of electric charge on the surface of each of the materials with one becoming positively and, the other negatively charged. The electrostatic charges naturally seek to balance themselves out. Electro Static Discharge (ESD) occurs as soon as contact is made with a conductive element. Static electricity is harmless to humans however, it can pose a serious threat to sensitive equipment. Vulnerable electronic equipment can be subject to reduction insensitivity and even complete failure in the event of an uncontrolled build up and discharge of electro static energy.</p> <p>Typical areas for concern include health-care environments such as operating theatres and intensive care wards, the electronics industry and industrial clean rooms.</p> <p><b>ESD risks</b></p> <p>In technical areas and industrial premises, electrostatic discharges lead to a number of problems, the most frequent among them being:</p> <ul style="list-style-type: none"> <li>• <b>Degradation of sensitive electronic components</b> leading to a loss of performance which is sometimes impossible to detect during routine quality control</li> <li>• <b>Deterioration of production conditions:</b> The disruption of sensitive electronic equipment, build-up of dust, reduction in line output, etc. In particular circumstances, the close packing of components can have a marked increase in the sensitivity of products and a charge of as little as 10 volts may be sufficient to increase risk.</li> </ul>		
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	<ul style="list-style-type: none"> <li>• <b>Risk to human safety</b></li> </ul> <p>In the electronic industry, it is believed that 30-50% of faults found in components is due to uncontrolled Electro Static Discharge (ESD).</p> <p><b>Controlling ESD</b></p> <p>To reduce the risk from static electricity, various solutions can be effective including: earthing points for people and equipment, static control packaging, ionization, etc., all having the intention of:</p> <ul style="list-style-type: none"> <li>• <b>Limiting charges</b></li> <li>• <b>Controlling discharges.</b></li> </ul>		
4.	<p><b>LAMINAR AIR FLOW SYSTEM complete with all required ducting and return air grills.</b></p> <p>The Plan-air ceiling ventilation system will dilute the bacteria generated by the operating team and patient in the theatre and to create an Air flow system pattern that carries contaminated air away from the operating table &amp; entering surgical wounds. It will be designed such that filtered, sterile air flows through the operating zone without an admixture of indoor air. The germs and aerosols released by occupants are displaced into adjacent room zone and removed with the exhaust air.</p> <p>Planair Ceiling constructed out of 1.6 mm thick extruded aluminium sheet of size 2400 x 2400 mm having 6 nos. of HEPA filters. The HEPA filters having dust spot efficiency of 99.99% 0.3 micron. Diffuser will be made out of perforated SS304 sheet. The main components that the Laminar flow will be having is a rectangular air outlet housing with air outlet frame and air discharge element on the underside and two housings on the top side each with a built in HEPA filter. The air discharge element will be a fine-meshed fabric for laminar displacement flow. The air discharge element will be split with a feed through for the surgical light. The element will be removable or can be folded downwards for easy accessibility to the housing interior for cleaning and disinfection. It will be also easily accessible to the HEPA filters which can be easily replaced when required to do so.</p> <p>The complete Laminar Flow system will be Pre-manufactured and pre-assembled unit, modular in design, having connection box and filter frame. The construction will consist of four units' modular in design with filter frames and variable connection hoods for the supply air, the air discharge element will be made of fine-mesh laminar fabric (polyester) with a surrounding stainless steel frame.</p> <p>The Laminar air distribution element will be divided into four parts with a minimum number of bars, individually foldable, covered with monofilament polymide from one side, fixed without screws. It will have connection for differential pressure measurement.</p>	2	Set
5.	<p><b>ANESTHESIA PENDANT SINGLE ARM- NON MOTORISED</b></p> <p>Pendant should be designed to provide high degree of versatility that can enhance workplace efficient to support clinical processes in operation theatre. The pendant should be specially designed to enhance the workflow in the busy OT environment providing medical gas &amp; electrical services and facilitating equipment management for the anesthetist. Pendant should be single arm non-motorized system, which allows supply system to be positioned at precisely where it is most convenient for the anesthetist. When not in use the pendants should be moved away from the OT table.</p> <p>The pendant should have the following features:</p> <ul style="list-style-type: none"> <li>• The Pendant should have single movable arms.</li> <li>• It should provide a convenient overhead supply of services including medical gas and electrical outlets/sockets thus eliminating the majority of trailing hoses</li> </ul>	2	No.



	<p>and cables.</p> <ul style="list-style-type: none"> <li>• With lateral movement.</li> <li>• should rotate through an arc of over 330°.</li> <li>• It should have easy maneuverability.</li> <li>• Minimum rotation of the pendant unit should be 330°.and minimum rotation of head unit should be 330°.</li> <li>• should have minimum load bearing capacity 100kg.</li> <li>• should have minimum 7 gas outlet points with integral check valve in first fix connections must be mounted in the underside of the pendant head and gas specific, color coded which should allow to attach hose to rotate without transmitting twisting forces to the pendant.</li> <li>• Electrical sockets should be provided on the sides of the pendant head.</li> <li>• Oxygen Outlets – 2nos,</li> <li>• N2O-2nos.</li> <li>• Vacuum Outlets – 2nos.</li> </ul> <p>The medical gas outlet terminals units installed in booms or moveable pendants should be attached to their respective flexible gas hose by a gas specific non-interchangeable screw thread (NIST) fitting to BS EN 739:1998. • Electrical Sockets – minimum 8 nos. (6 Nos. 5 A and 2 Nos. 15 A)</p>		
6.	<p><b>SURGICAL PENDANT SINGLE ARM- NON MOTORISED</b></p> <p>Pendant should be designed to provide high degree of versatility that can enhance workplace efficient to support clinical processes in operation theatre. The pendant should be specially designed to enhance the workflow in the busy OT environment providing all medical gas &amp; electrical services and facilitating equipment management for the surgeon. Pendant should be single moveable arm non-motorized system, which allows supply system to be positioned at precisely where it is most convenient for the surgeon. When not in use the pendants should be moved away from the OT table.</p> <p>The pendant should have the following features:</p> <ul style="list-style-type: none"> <li>• The Pendant should have single movable arms.</li> <li>• It should provide a convenient overhead supply of services including medical gas and electrical outlets/sockets thus eliminating the majority of trailing hoses and cables.</li> <li>• With lateral movement.</li> <li>• should rotate through an arc of over 330o.</li> <li>• It should have easy maneuverability.</li> <li>• Minimum rotation of the pendant unit should be 330o.and minimum rotation of head unit should be 330o.</li> <li>• Should have minimum load bearing capacity 100kg.</li> <li>• The pendant head should have a motorized vertical travel movement.</li> <li>• should have minimum 6 gas outlet points with integral check valve in first fix connections must be mounted in the underside of the pendant head and gas specific, color coded which should allow to attach hose to rotate without transmitting twisting forces to the pendant.</li> <li>• Electrical sockets should be provided on the sides of the pendant head.</li> <li>• Oxygen Outlets – 2nos,</li> <li>• Air (4 bar) Outlets – 1no.</li> <li>• Surgical Air (7 bar) Outlets – 1no.</li> <li>• Vacuum Outlets – 2nos</li> </ul> <p>The medical gas outlet terminals units installed in booms or moveable pendants should be attached to their respective flexible gas hose by a gas specific non-interchangeable screw thread (NIST) fitting to BS EN 739:1998. Electrical Sockets – minimum 8 nos. (6 Nos. 5 A and 2 Nos. 15 A).</p>	2	No.

<b>7.</b>	<b>OPERATING ROOM CONTROL PANEL</b> Membrane type operation control panel should have following facility: a Should be mounted flush in the theater wall with distribution board complete b with all accessories. c 1 number day time digital clock. 1 number elapsed time digital clock d 1 number hands free telephone. Medical gas alarm should indicate high, normal and low gas pressure for each e gas service present in the operating room. Temperature and humidity display only Peripheral light controller.	<b>2</b>	<b>No.</b>
<b>8.</b>	<b>PRESSURE RELIEF DAMPER</b> a Pressure relief dampers will be provided in each room (SS) to prevent contamination of air from clean and dirty areas. Suitably sized air pressure relief damper will be strategically placed, enabling differential room pressure to be maintained and ensure that when doors are opened between clean and dirty areas. Cascade pressure stabilizers will be a range of multi bladed units specifically designed to prevent contamination of air from clean and dirty areas also control room air pressures in critical areas, such as operating theatre suites.	<b>2</b>	<b>No.</b>
b	Each stabilizer will compromise of carbon steel housing with up to four Grade 304 Stainless steel blades, which pivot upon sealed for life bearing assemblies. The body will be epoxy powder coated as per standard BS colors. First class electrolyzed steel plate will be used for body and with high grade SS304 stainless steel for blades.		
c	Counter- weight balancing system will be provided in the PRD to maintain positive pressure inside the operation room. Air pressure stabilizers will have a capability of controlling differential pressure to close tolerance.		
d	These stabilizers will be accurate to a range of 1 Pascal over their working range of -35Pa.		
e	Suitably sized air pressure relief damper will be strategically placed, enabling differential room pressure to be maintained and ensure that when doors are opened between clean and dirty areas		
f	The PRD will remain closed at pressure below the set pressure and will open fully at pressure and will open fully at pressure only fractionally above the threshold pressure.		
<b>9.</b>	<b>X-RAY VIEW BOX</b>	<b>2</b>	<b>No.</b>
a	The theatre will be equipped with a twin plate X-Ray Viewing Screen, recessed in the wall and designed to provide a high level of control luminance, without flicker, from a unit that is easy to clean and maintain. Twin Plate X-ray viewing LCD Screen, designed to provide a high level of control luminance without flicker.		
b	The X-Ray viewing screen illumination will be by LED lamps, controlled by dimming ballast.		
c	The front panel diffuser is of a glare free type, sealed flush with the inside face of the operating theatre wall.		
d	The LED lamps will provide a uniform level of illumination across the entire front panel.		
e	Access for maintenance and lamp changing is from the front of the panel.		
f	All internal wiring is terminated in connectors with screw and clamp spring connections.		
g	Individual fuses or miniature circuit breakers protect all internal circuits.		

h	All internal wiring is of high temperature resistance and secured by propriety cable clips.		
i	It is flush mounted and sealed into theatre wall by means of a sterile jointing system.		
J	Twin Plate X-ray viewing LCD Screen, designed to provide a high level of control luminance without flicker.		
<b>10.</b>	<b>WRITING BOARD</b>	<b>2</b>	<b>No.</b>
a	A list/Writing Board is provided in each operating theatre. Writing Board of size 840 x 640 mm comprises of a flush mounted, 1.50 mm thick, white laminate board, bonded to a 10 mm high density fibreboard sheet for additional rigidity.		
b	The unit can be opened to create a wall mounted writing surface within the operating room.		
c	An additional storage unit is located under the writing unit for the placement of a computer CPU and peripheral items.		
d	The white board is constructed from 1.6mm thick, white laminate board.		
<b>11.</b>	<b>PERIPHERAL LIGHTS</b>	<b>2</b>	<b>Set</b>
	Recess mounted IP54 Protocol, non-hygroscopic peripheral lights having compact fluorescent lamp, dimmable.		
<b>12.</b>	<b>SURGICAL SCRUB SINK: TWO BAY</b> Existing surgical scrub sink will be designed for use in OT complex providing Surgeons with a convenient sink for pre – OT scrub up where high hygienic standards are to be maintained. . Hands free operation will include infra red sensors with built-in range of adjustment. Thermostatic mixing, valve control will be located behind the access panel and maintain constant water temperature. User defined setting of 1 to 3 min are available. This timing will be adjustable to meet individual application requirements. Provided with infrared sensors, thermostatic control taps with fail safe temperature controls. Foot operated switch will be there. The scrub will have 1/2 or 3 tap outlets. S.S. 304, 2 Bay with sensor and foot: 2-Bay scrub sink, with infrared photo sensor, digital timer with valve and 2 nos. solenoid valves along with manual option made for stainless steel grade 304 polished finish. <b>Existing scrub station to be upgraded with above stated accessories only.</b>	<b>2</b>	<b>No.</b>
<b>13.</b>	<b>AUTOMATIC HERMETICALLY SEALED SLIDING DOOR</b> This should be a hermetically sealed, single sliding door of 2.1 (H)X 1.5 m(W) The controller should be capable of being operated by elbow switches/foot switches as well as touch less sensor. The track should be of stainless steel/Aluminum and the running surface for the top rollers should be suitably angled to reduce resistance to movement The door leaf should be hung by means of hard plastic rollers of high quality with double bearing at the top. Rollers should be provided under the stainless steel/Aluminium track to enable smooth and noiseless movement. Opening and closing of the door should be microprocessor controlled electromechanical movement. The door material should be of HPL Color should match the interior and care should be taken to make the leaf strong and light weight. One should be able to open and close the door effortlessly incase of failure of automatic mechanism. Door opening handle should be strong and sturdy. Material should be of SS (gloss finish). Should be provided with high quality cylindrical lock. Door leaf should have high quality synthetic rubber gasket with long life to ensure hermetic sealing (to maintain air pressure differential). Air tightness	<b>2</b>	<b>No.</b>

	<p>99.99% at a pressure of 100Pa.</p> <p>The finished floor on either side of the door should be perfectly level (maximum permissible difference +1mm).</p> <p>The overall thickness of the finished door should be 40-60mm. The inner part of the door should be filled with CFC free polyurethane foam thickness of 48mm or nearby. (Sealed airtight to prevent further ingress of any microbial organism).</p> <p>The door and controls should comply with IEE regulation. All motors used should be DC brushless motors with essential isolation from mains.</p> <p>Door should be with vision window 300 mm x 300 mm with double glazed panels and hermetically sealed.</p> <p>Door movement should have minimum noise.</p> <p>The starting time after receiving the signal should be adjustable between 0.5 to 20 seconds.</p> <p>Test certificate for hermetically sealed door frame (factory test certificate) should be enclosed with the pre dispatch documents.</p>		
<b>14.</b>	<b>SINGLE FLAP SWING DOOR</b>	<b>2</b>	<b>No.</b>
	<p>Door Leaf thickness: 44mm</p> <p>Door Leaf with 4mm thick HPL Laminates</p> <p>PU Insulated Core</p> <p>Dead Lock (Std), Mortise Lever Handle (Optional)</p> <p>Anodized Aluminum Alloy Door Profiles</p> <p>Wall frame 80mm x 60mm</p> <p>Wall fame Al 6063 Anodized ,2.5 mm thick, GI reinforced</p> <p>Locking Cylinder: Euro Norm, outside key and inside emergency release / outside &amp; inside key</p> <p>Pull Handle: Dia 22 x 250 mm c/c, both sides.</p> <p>Hinges : Ball Bearing Hinges, 4 per door leaf.</p> <p>Flush View Port- 300x300mm (standard), option maximum size 300 x 600</p> <p>Door Closure (on active leaf)</p> <p>Concealed Flush Bolt on Passive Leaf.</p> <p>Concealed Drop Seal</p> <p>No Organic Material (No Decay, No Contamination)</p>		
<b>15.</b>	<b>DUAL DOOR AUTOMATED PASS BOX SYSTEM</b>	<b>2</b>	<b>No.</b>
	<p>Pass Box (600' X 600' X 600mm' Deep) made out of SS 304 for disposal of dirty linen /waste. Each pass box will be equipped with two doors and the door will be operated electronically. The pass box will be designed in such a way that only one door will be opened at one time. The UV light will be so installed that it is kept on while both the doors are closed, this UV light has to be automatically turned off in case of opening of either of the doors. There shall be indicators on both sides of the OT so that door open/close status can be monitored from the both ends. Each pass box will be equipped with two doors and the door will be operated electronically. There shall be indicators on both sides of the OT such that door open / close status can be monitored from both ends.</p>		
<b>16.</b>	<b>DISTRIBUTION BOX</b>	<b>2</b>	<b>No.</b>
	<p>All high voltage equipment will be installed in a separate enclosure. The cabinet will house the operating lamp transformers, mains failure relays, MCB's electrical distribution equipment &amp; circuit protection equipment for all circuits within the operating theatre. All internal wiring will terminate in connectors with screw &amp; clamp spring connections of the clip- on type mounted, on a DIN rail &amp; labeled with clear proprietary labels. Individual fees or miniature circuit breakers will protect all internal circuits.</p>		
<b>17.</b>	<b>ELECTRICAL SYSTEM</b>	<b>2</b>	<b>Set</b>
	<p>Laying conduits, Switch Boxes, Switches and switch plates, Power and Light Electric Multi-plug Sockets, including Wiring, Earthing all the lighting controls,</p>		

	pendants and other equipment fixtures and fittings complete as per approved design.		
<b>18.</b>	<p><b>LED OT LIGHT</b> Ceiling mounted Dual Dome LED OT lights (imported and as per EN standard) should have following features:</p> <ul style="list-style-type: none"> <li>a 160000 lux</li> <li>b Each dome dimming multiple steps</li> <li>c Focus</li> <li>d Light field dia – 180-320mm</li> <li>e Colour temp – 4000k.</li> <li>f Colour rendering index Ra&gt;93</li> <li>g Safety glass</li> <li>h Light emitting surface</li> <li>i Satin finish cover glass</li> </ul>	<b>2</b>	<b>Set</b>
<b>19.</b>	<p><b>CAMERA with Medical Grade Monitor minimum 19”</b> Description: Integrated In-Light Camera System should be integrated at the centre of one of the domes of this lighting system/ third arm in order to capture images &amp; video sequences of the open cases. Such a autofocus – Lockable camera should have the following specifications: Signal to Noise Ratio (S/N Ratio) : &gt;50 dB</p> <ul style="list-style-type: none"> <li>a CCD/CMOS : 1/3” or 1/2.8”</li> <li>b Optical Zoom : 10X</li> <li>c Digital Zoom : 12-15X</li> <li>d Video Output : HD, DVI, S-Video &amp; Composite Video</li> <li>e White Balance &amp; Gain : Automatic/Manual</li> </ul>	<b>1</b>	<b>No.</b>
<b>20.</b>	<p><b>MEDICAL COPPER PIPELINE &amp; FITTINGS INSIDE OPERATION THEATRES</b></p> <p><b>Medical Grade Copper Pipe:</b> The medical grade copper pipes will be, Phosphorous deoxidized, non arsenic, degreased seamless round tubes (Grade: CW024QA) conforming to BS EN 13348:2001 +A1/ ASTM: B 819-00.</p> <p><b>Copper Fittings:</b> All copper fittings will be manufactured from same grade of copper.</p> <p><b>Brazing Rod:</b> Copper to copper joints, brazing will be done by 5% silver, copper phosphorous brazing alloy which will be used without flux. Copper to brass joints: 43% silver brazing rods with flux will be used, Nitrogen gas flushing will be done to avoid oxidization and removal of brazing deposits inside the pipeline during brazing. Supports: To avoid weight of the pipe on the joints supports (saddles made of LDPE/ PVC material) of slotted angle and thread rod hanged with the help of fasteners will be provided at a distance of every 4-6 feet as prescribed by HTM-2022.</p>	<b>2</b>	<b>Set</b>
<b>21.</b>	<b>HVAC SYSTEM FOR MODULAR OT</b>	<b>2</b>	<b>Set</b>
<b>1</b>	<b>CONDENSING UNITS</b>		
<b>1a</b>	<b>Compressor:</b>		
	The compressor shall be screw, scroll / reciprocating type, hermitic, in accordance with ARI 520, direct driven with capacity control arrangement. The		

	compressor casing shall be of cast iron and designed for 450 psig or higher. The compressor shall incorporate rolling element bearing to support rotating assembly. The rotor shall be higher steel alloy.		
	Refrigerant circuit components shall include flexible pipe connectors, hot gas muffler, high side pressure switch, liquid line shut-off valves, suction and discharge shut-off valves, filter drier, moisture - indicating sight glass, electronic or thermostatic expansion valve (EXV), heavy duty pressure gauge with cocks to monitor suction, discharge and oil pressure and complete operating of refrigerant and compressor oil.		
<b>1b</b>	<b>Motor:</b>		
	Compressor motor shall be Hermetic / semi-hermetic direct drive, squirrel cage, two pole, induction type, refrigerant cooled motor suitable for 415 V/50Hz. 3 Phase supply. Hot gas motor cooling is not acceptable.		
<b>1c</b>	<b>Condenser:</b>		
	Condenser shall be Air Cooled type. Tubing shall be copper, Aluminium fins high efficiency type. Tubes shall be nominal 19mm. Outer diameter and thickness shall not be less than 22 g. and rolled into tube sheets and shall be individually replaceable and also tubes shall be coated with corrosion resistant coating.		
	Condenser fans shall be direct coupled to motor and protected against overloading and with minimum 1.15 service factor.		
	1. AHU of 3500 CFM with 6 RD coil DX Type nicotra blower ABB/ Crompton motor mixing box Al. damper in or out 25mm thick panel fresh air damper ST P125 with heating coil.		
	2. 2 Nos. condensing unit (one stand by) with 8.5 TR -22 Refrigerant floor mount		
	3. AHU and Condensing unit starter panel with volt meter, empire meter related LP/HP controller thermostat sensor on/off light with power coated		
	5. 9 mm aluminum foil foam insulation with adhesive aluminum tape 5mm gasket silicone make paramount, supreme		
	6. Casual dryer 8.5 TR		
	7. Expansion valve		
	8. 1,1/8, and 5/8 ,18(g) copper piping with cell type insulation taping nitrogen testing vacuum and drefling R22 gas brazing. Accessories to be used for installation		
<b>2</b>	<b>AHU - AIR HANDLING UNIT (DOUBLE SKIN TYPE) including all ducting</b>		
<b>2a</b>	<b>Type:</b>		
	The air-handling units are of double skin construction, draw-thru type comprising of various sections such as Pre-filter section, coil section. Units must be able to work satisfactorily in exposed atmospheric conditions. The unit will have tubular heater of 3 KW range with SS Jacket construction.		
<b>2b</b>	<b>Casing:</b>		
	Double skinned panels are fabricated with anodized extruded aluminium extrusion frame work bolted together with sandwich panel having powder coated 0.70mm sheet for outer skin and plain GP 0.63 mm sheet for inner skin. 43 mm thick PUF insulation material is injected between the two panels (with U valve no greater than 0. 85W / m <sup>2</sup> / K).		
	The entire frame duly painted is mounted on sheet steel channel based. The panels are sealed to the framework by heavy-duty 'O' ring gaskets held captive in the framed extrusion. All panels are detachable or hinged. Hinges are made of die cast aluminum with stainless steel pivots, handles are made of hard nylon and be operational from both inside and outside of the unit. All fixing and gaskets shall be concealed.		

<b>2c</b>	<b>Motor and drive:</b>		
	Fan motors are highly efficient and work on 440 ± 10% volts, 50 cycles, three phase with explosion proof type with class F installation, with IP 55 protection. Motors are easily designed for quiet operation and motor speed does not exceed 1440 rpm. Drive to fan is provided through belt-drive arrangement. Belts are of the oil-resistant type.		
<b>2d</b>	<b>Fan:</b>		
	Fans are of centrifugal type, conforming to AMCA 210 and are double width, double inlet with forward-inclined airfoil blades, specially designed and suitable for the required operating pressure. Fan casing are made from galvanized steel sheet. Fan shaft is grounded C 40 carbon steel and supported in self-aligning plumber block operating less than 75% of first critical speed, grease lubricated bearings.		
<b>2e</b>	<b>Cooling Units:</b>		
	DX coils have 12.5 to 15mm dia tubes minimum 24G thick with sine wave aluminium fins firmly bonded to copper tubes assembled in zinc coated steel frame. Face and surface areas are such as to ensure rated capacity from each unit and such that the air velocity across the coil does not exceed 150 meters per minutes. Each coil is factory tested at 21-kg/M <sup>2</sup> air pressures under water. Tube is Hydraulically / mechanically expanded for minimum thermal contact resistant with fins. Fin spacing is 4-5 fins per cm.		
<b>2f</b>	<b>Filters:</b>		
	Each unit is provided with a factory assembled section containing washable synthetic type air filters having anodized aluminium frame. The media is supported with HDP mesh. Filter banks are easily accessible and designed for easy withdrawal and renewal of filter cells. Filter banks face velocities do not exceed 100 m/minutes. Differential pressure switch is to be fixed across the filter as part of AHU's system.		
<b>3</b>	<b>Ducting:</b>		
	The duct supply system will be free of construction debris. Ducting shall be made of Aluminium with curves & bends where indicated for easy flow of and ensured to be air tight by applying silicon sealant after fabrication. Hangers shall be provided to ducts & shall be suspended by means of G.I. coated rods & these shall not be more than 2.5mtrs apart. Thermal insulation with 9mm XPE for supply & return air ducts. Joints will be lapped with Nitrile rubber tape for better insulation.		
<b>22.</b>	<b>ANAESTHESIA WORKSTATION</b>	<b>2</b>	<b>No.</b>
	<ol style="list-style-type: none"> <li>1. Technical Specifications: <ol style="list-style-type: none"> <li>1. Should be completely integrated system, with all components like Anesthesia machine, Ventilator, Circle absorber, Vaporiser.</li> <li>2. Should have provision for delivery of oxygen, nitrous oxide and medical air with pressure gauges.</li> <li>3. Should have independent attachments for connecting central gas supply and pin indexed cylinders.</li> <li>4. Should have analog display of cylinder and pipeline gas pressures</li> <li>5. Should have provision to attach one cylinders for Oxygen and one for Nitrous Oxide</li> <li>6. Oxygen and Nitrous oxide should be linked to ensure a minimum of 25% oxygen delivery at all times to avoid delivery of hypoxic mixture.</li> <li>7. Should have back bar with ISO pin type to attach vaporiser easily.</li> <li>8. Should have top shelf and a table top to keep drugs and equipments.</li> <li>9. The machine should possess battery back up for ventilator.</li> </ol> </li> </ol>		

	<p>10. Castor wheel should be durable and moisture resistant.</p> <p>11. Unlockable oxygen flush to deliver oxygen flow of approximately 40l/min.</p> <p>12. Should have two deep drawers.</p> <p>2. Standard Circle Absorber System</p> <ol style="list-style-type: none"> <li>1. Should have adjustable pressure limiting valve, breathing circuit pressure measuring device.</li> <li>2. Should have bag / vent selecting valve integrated onto the absorber and should automatically turn on the ventilator when positioned to vent mode.</li> <li>3. Should be suitable to use low flow techniques.</li> <li>4. Should have facility to attach oxygen sensor.</li> <li>5. Should have fully autoclavable Co2 absorbent canisters and bellows.</li> </ol> <p>3. Vaporiser</p> <ol style="list-style-type: none"> <li>1. Temperature, pressure and flow compensated.</li> <li>2. Should provide keyed filler based Isoflurane and Sevoflurane vaporisers.</li> <li>3. Should be easy to mount and dismount from the back bar.</li> <li>4. Should have ISO pin type (Selectatec) back bar mount.</li> <li>5. Should have facility for measuring concentration with volume.</li> </ol> <p>4. Ventilator</p> <ol style="list-style-type: none"> <li>1. Should be integrated with the anesthesia system, with bag in bottle ascending type bellows.</li> <li>2. Minimum screen size should be 8 inches</li> <li>3. Should have tidal volume range from 20ml to 1500 ml, I:E – 4:1 to 1:8</li> <li>4. Should be able to set TV, RR and I:E ratio.</li> <li>5. Shall have the following modes: VCV, PCV, SIMV, SIPPV</li> <li>6. Ventilator should monitor and display integrated Oxygen monitoring, Inspired and expired volumes, PAW, Pressure waveform, Flow waveform, PT, VT, FT and spirometry loops</li> <li>7. Ventilator should provide all user alarms.</li> </ol> <p>Multi Para Monitor:</p> <p>Should have the facility for measurement of EtCO<sub>2</sub>, ECG, Heart Rate, IBP, NIBP, Temp., Spo<sub>2</sub> etc. with at least two sets of all accessories (Adult, Paediatric &amp; Neonatal – Two Sets Each).</p> <p>Rate of the accessories should be quoted and should be fixed for the first five years from the date of installation.</p> <p>System should be European CE and US FDA certified.</p>		
23.	<p><b>FULLY AUTOMATIC ETO STERILZER with Sealing Machine</b></p> <p>Volume: Should be approx. 50 – 55 Ltrs.</p> <p>Ethylene Trioxide Gas Sterilizer uses ethylene trioxide as a biocide to destroy bacteria, viruses, fungus and other unwanted organism. Ethylene oxide is used in sterilization of items that are heat and moisture sensitive such as anesthetic tubing and other plastic disposable materials etc.</p>	1	No.



	<p>The Chamber will be made of SS 316 for corrosion and gas resistant. The inner surface is smoothly finished to minimize gas deposit.</p> <p>Mode of heating - The Chamber will be heated with Strip air heater / Hot water circulated through the lumpid coil of SS 304 around the chamber to maintain the chamber temp. at 40 – 75oC.</p> <p>Insulation of shell - 50 mm thick Resin bonded fibre glass covered with SS 304 outer cover</p> <p>The single Door will be made of SS 316, hinged type with quick release locking arrangement with suitable safety interlocking so that the process cannot start unless the door is properly closed and cannot be opened during the process.</p> <p>Paneling will be made of SS 304, Box type design, HMI-PLC will be located within the panel.</p> <p>Vacuum pump - Diaphragm/Water ring type vacuum pump provided to achieve high level of air removal for high sterility and efficient residual gas removal during aeration process from the chamber and gas strap to separate and evacuate the gas. Inbuilt Gas catalytic converter for the exhausted ETO gas.</p> <p>Sterilization process - Fully automatic models. Two nos. sterilization cycles with inbuilt leak test and aeration will be provided, which will be completed automatically.</p> <p>Stand will be made of SS 304</p> <p><b><u>Documentation</u></b> Thermal Printer/Dot-matrix printer which will print date, batch/ load number, program type elected and program parameters which includes one point pressure and one point temperature print out.</p> <p><b><u>Programs:</u></b> The Following programs with variable parameters are provided to take care of user’s requirement. Fully automatic operation. Negative Pressure Cycle (100% ETO Cartridge)</p> <p><b><u>Cycle description:</u></b> 1) Vacuuming of chamber to set value 2) Leak hold period 3) Cartridge punching /gas purging depending on the cycle selected. 4) Sterilization hold period for set time. 5) Exhaust and aeration for no. of aeration pulses set.</p> <p>ACCESSORIES : 1no. Wire basket will be provided along with the unit. Packing materials for sealing machine should also be quoted.</p>		
24.	<p><b>PATIENT LIQUID WASTE DISPOSAL SYSTEM</b></p> <p>The system should be able to increase the efficiency of the operation theatre by reducing the delays caused in removing the infected body fluids from the operation theatre.</p> <p>It must be a fully automated surgical waste management system that should be</p>	1	No.

	<p>able to dispose unlimited amount of body fluid. It must be a closed system wherein there is no direct human contact with the body fluids. It should have continuous suction without interruption. The system should have self-cleaning mode with the requisite disinfection fluid. It should ensure that no transport of infected liquid waste out of the operation theatre through the suction jars or any other means except directly through this system.</p> <p>It should be fixed on the wall to enable easy cleaning of the floor. It must be connected to the waste drain directly to avoid any surface / basin to be used to dispose the liquid infected waste. The surface of the machine must be easily disinfectable.</p> <p>It must have a built-in color touch screen to control and monitor operations. It should have feature to calculate the volume of the liquid being sucked out. It should be possible to pre-fix the required volume that needs to be sucked out.</p> <p>It should have a patient procedure filter with a tissue trap. It should have the provision to attach up to four suction lines. It must have a chamber to visualize the collected fluid.</p> <p>It should be compliant with UL / IEC / EN 60601-1 and 60601-1-2, CAN / CSA C22.2 No. 601.1-M90: Class-I equipment, Type B applied part. The system must be ISO 13485 certified and must be US FDA and European CE certified.</p>		
25.	<p><b>ELECTRO SURGICAL UNIT</b></p> <p><b>Monopolar:</b></p> <ol style="list-style-type: none"> <li>Cut: Pure cut and three blends for different hemostasis A special cut mode for smooth cutting of fatty tissues Maximum power rating: 300W</li> <li>Coagulation: At least three modes i.e. Soft/Dessicate, Force/Fulgurate and Spray Maximum power rating: 120W</li> </ol> <p><b>Bipolar:</b></p> <ol style="list-style-type: none"> <li>Both cut as well as coagulation</li> <li>For coagulation, Auto-start and Auto-stop should be possible</li> </ol> <p><b>Safety features:</b></p> <ol style="list-style-type: none"> <li>Patient plate contact monitoring using split patient plate</li> <li>Floating output</li> <li>HF leakage monitoring and alarm system</li> <li>Timer that avoids power delivery by mistake for a long time</li> <li>The footswitch should be explosion proof</li> </ol> <p><b>Advanced Features:</b></p> <ol style="list-style-type: none"> <li>Uses tissue sensing technology for maintaining consistent cut and coagulation quality</li> <li>Power control and mode control for monopolar through handswitch</li> <li>Pulsed or Interrupted Cut for cutting polyps</li> <li>Cooling by convection</li> </ol> <p><b>Usability Features:</b></p> <ol style="list-style-type: none"> <li>Programmable with at least 10 programs</li> <li>Self-diagnostic: On power-on, the system should check for common errors like "handswitch is short" and store them in memory.</li> <li>Power fail memory: All current settings at the time of power-fail should be restored when switched on.</li> </ol> <p><b>Technical:</b></p> <ol style="list-style-type: none"> <li>Frequency of HF output should be anywhere between 240kHz and 470 kHz</li> <li>Power accuracy: +/-15% or 5W, whichever is higher</li> </ol>	1	No.

	<p>3. Internal power supply: SMPS  4. Designed to comply with IEC601  5. Operates for mains voltage range of 195V to 260V  <b>Accessories:</b>  1. Disposable patient plate 20 nos.  2. One monopolar Disposable handswitches  3. One bipolar autocleavable forcep with cable  4. 2+1 pedal footswitch  <b>Process compliance:</b>  The manufacturer should be ISO9001 and ISO13485 certified for these products.</p>		
<b>26.</b>	<p><b>CRASH CART</b>  SS 304 grade made top sheet with 2mm thickness should be used. SS 304 tubular frame should have five different colored removable bins mounted on top shelf and two polystyrene lockable storage units with three drawers each. Safe working load must be 40kgs.</p>	<b>2</b>	<b>No.</b>
<b>27.</b>	<p><b>INSTRUMENT TROLLEY</b>  SS 304 sheet should be at the top as well as bottom shelf for keeping the instrument being used. Castors of 125mm Dia. should be used for easy in movement. Overall Dimension must be 1232mm X 531mm X 915mm H. 10 Kg/shelf and 5 Kg for bowl and bucket.</p>	<b>2</b>	<b>No.</b>
<b>28.</b>	<p><b>REVOLVING STOOL</b>  Overall Sizes Diagonal Leg Dia 538 mm H470 min-655max. SS 202 made sheet with spin section of thickness 1mm &amp; should be non corrosive. All the legs should be provided with 4 nos of Nylon-6 bush. All metal components should be pre treated with zinc phosphating in 9 tank process and then powder coated with anti microbial epoxy polyester powder coating. Safe working load must be 135kg.</p>	<b>2</b>	<b>No.</b>
<b>39.</b>	<p><b>INSTRUMENT CABINET</b>  overall dimensions of 900mmWx 1990mmHx450mmD and should have transparent doors and sides with steel frame work. Transparent portion of this cupboard should be made of Acrylic of 4mm thick. This cabinet should have 5 adjustable acrylic shelves each of 6 mm thickness. Three way lock should be provided of 6 levers.</p>	<b>2</b>	<b>No.</b>
<b>30.</b>	<p><b>SHOE RACK</b></p>	<b>2</b>	<b>No.</b>
<b>31.</b>	<p><b>AIR CURTAINS</b></p>	<b>2</b>	<b>No.</b>
<b>32.</b>	<p><b>TRANSFER TROLLEY</b>  Emergency &amp; Recovery Trolley  Height adjustable on Foot operated indigenous Hydraulic Pump  Features  <ul style="list-style-type: none"> <li>• overall approx dimension : 1905mm (L)x 715mm(w)</li> <li>• Removable stretcher approx dimension: 1830mm (L) X 560mm(W)"</li> <li>• Height adjustment approx: 695mm to 945mm</li> <li>• Height adjustment on foot operated jerk free indigenous hydraulic pump</li> <li>• Two section X-ray permeable pre-laminated board top</li> <li>• Backrest adjustable on ratchet mechanism</li> </ul> Trendelenburg/ Reverse Trendelenburg positions on hand operated 2 nos. gas spring mechanism  <ul style="list-style-type: none"> <li>• Mounted on four high grade synthetic body casters 125mm dia wheel, two with brake and two without brake</li> <li>• Stainless steel sliding X-ray cassette holder, utility tray, oxygen cylinder cage, corner rubber buffers &amp; pushing handles covered with synthetic material</li> <li>• A pair of swing away type stainless steel railings</li> </ul> </p>	<b>2</b>	<b>No.</b>

	<ul style="list-style-type: none"> <li>• Telescopic stainless steel IV pole with four locations</li> <li>• Pre treated and epoxy powder coated finish</li> <li>• Supplied in semi knocked down condition</li> </ul>		
<b>33.</b>	<p><b>ANESTHETIC TROLLEY</b>  External Width: 650 mm External Height: 1.080 mm External Length: 830 mmm  Anaesthesia Trolley with Overbridge  anodized aluminium walls and angulars / powder coated walls / angulars  Moulded ABS plastic worktop with rimmed edges  Innovative push handles on three sides  Lateral extendable working surface in pearl-grey.  Overbridge with 3 horizontal accessory rails, equipped with:  - Syringe/needles dispenser on two rows - 9 tilt-out bins  - Plastic tray and Glove box holder  - IV holder  5 drawers Injection moulded PC/ABS with handle, label holder &amp; colour tag  2 accessory baskets  Central key-lock system  4 twin wheels Ø 125 mm, non marking, 2 brakes  Dim.: 830x650x1080 H mm / 1880 H mm</p>	<b>2</b>	<b>No.</b>
<b>34.</b>	<p><b>OPERATION THEATRE TABLE</b>  <b>1.</b> Electro Hydraulic /Electromechanical / Powered Operating Tables are tables for performing surgical procedures and it works with electrical power.  <b>2. Operational Requirements</b>  a. OT Table is required for general surgery and should have X-Ray translucent tops.  <b>3. Technical Specifications</b>  a. Five OR more section table top with divided foot section (split leg section)  b. Table top should permit x-ray penetration and fluoroscopy with full length X-ray cassette tunnel accessible from either end.  c. Should have a handset for various functions  d. There should be inbuilt standby control enabling full use of table in case of handset failure with manual/electric override  e. All table positioning, i.e., height, back section adjustment, lateral tilt, Cranial- caudal traversing or longitudinal movement, Trendelenburg and anti-Trendelenburg, should be operated through handset and standby control  f. The casings on the frame and centre supporting column should be made of hygienic stainless steel.  g. Mattress should be radiolucent and of PU make and suitable for fluoroscopy  h. Table should have mobile base with lockable castors  i. Should have built in electronic controlled kidney position with additional manual / electronic control by Kidney Bridge for better positioning if required  j. Zero level button  <b>4. Measurements:</b>  a. Height: 690-1080mm with 50 -80 mm mattress(+/-10% tolerance allowed)  b. Side tilt: minimum +/-20 degrees  c. Back section adjustment: - 40 degrees to 70 degrees  d. Foot section adjustment: - 90 to 0 degree, detachable</p>	<b>2</b>	<b>No.</b>

	<p>e. Trendelenburg: minimum 30 degree  f. Anti-Trendelenburg: minimum 25 degree  g. Width: 550 mm or less  h. Length: 2000 mm or better  i. Cranial and caudal traversing or longitudinal movement of minimum 200 mm  j. Weight – 200 Kg or more in all positions</p> <p><b>5. System Configuration Accessories, spares and consumables</b></p> <p>a. Padded arm rest with straps - pair with dampers – 1 set  b. Anaesthesia screen with clamps – 1 set  c. Side supports: pair with clamps – 1 set  d. Shoulder supports: pair with clamps – 1 set  e. Knee crutches: pair with dampers – 1 set  f. X-ray cassette tray with pushing rod – 1 set</p> <p><b>6. Environmental factors</b></p> <p>a. The unit shall be capable of being stored continuously in ambient temperature of 0 -50 deg C and relative humidity of 15-90%  b. The unit shall be capable of operating continuously in ambient temperature of 10 -40deg C and relative humidity of 15-90%</p> <p><b>7. Power Supply</b></p> <p>a. Power input: 220-240V/ 50 Hz AC single phase fitted with appropriate Indian plugs and sockets.  b. Inbuilt battery backup for 5 hrs or equivalent</p> <p><b>8. Standards &amp; Safety</b></p> <p>a. Should be US-FDA or European CE with 4 digit notified body number or Declaration of conformity for quoted model along with ISO 13485 or BIS certified for the quoted model  b. Manufacturer should be ISO certified for quality standards</p>		
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## **GROUP-B (Radiology)**

### **a. SPECIFICATIONS OF 80 KW HIGH FREQUENCY X-RAY MACHINE**

High frequency X-Ray machine suitable for general radiography & Fluoroscopy applications.

#### **X-RAY GENERATOR:**

- High Frequency X-Ray Generator having frequency of 40 KHz or more should be provided.
- Power output of generator should be of 80 KW.
- KV Range should be:
  - Radiographic KV range:40 to 150 KV in 1 KV/Step
  - Fluoroscopic KV range:40 to 120 KV in 1 KV Step.
- mA output (Rad.): 1000mA.
- mA output (Flr.): up to 3mA.
- Exposure time (Rad.): 1msec to 5 sec
- mAs output (Rad.): 1 to 200mAs.

#### **CONTROL:**

Attractive and ergonomically designed control panel with total soft touch switches for various operations. having following functions & indications.

- Machine ON/OFF switch
- Digital display of KV and mAs.
- KV and mAs increase and decrease switches.
- Ready and x-ray on switch with indicators
- Bucky selection switch.
- Stand by and exposure release switch.
- Self diagnostic program with indicators for:-
  - Earth fault error
  - KV error,
  - Filament error
  - Tube Head thermal overload.
- X-Ray on indicator.
- Incoming voltage indicator.
- Anatomical programming up to 216 pre-programmed functions in which automatic selection of Technical Factors is done according to the Body part Selection.

A 2-Step hand switch with dual action for exposure release with retractable cord is provided for taking images from a safer distance.

#### **X-RAY TUBE:**

- Two Nos. Dual focus Rotating Anode X-Ray tube thermally protected.
- Anode heat storage capacity of tube should be more than 300 KHU.
- Two Pairs of H.V. Cable with 6 meter or more length.
- Two Nos. Collimators should be provided, One Manual for overcouch and one motorized for under couch operation.

### **TUBE STAND:**

- Floor to Ceiling Stand with Counter Balanced Tube Head (Rotatable  $\pm$  180 Degree), 360 Degree Rotatable; mounted on Floor Ceiling Rails for convenient movements is provided.

### **TABLE:**

- All Position Motorized Table having Motorized Bucky should be provided. The table should move from  
- 12degree Trendlenburg position to 90 degree vertical with Automatic stop at Horizontal, Vertical & Trendlenburg Position.
- Motorized Bucky consisting of Bucky grid of size 17 1/4" x 18 7/8" ratio 8:1, 85 Lines/inch. Spot Film Device (Semi Automatic) capable of doing all routine Spot Filming (4 on 1, 2 on 1, 1 on 1) for use with 8" x 10", 10" x 12", 14" x 14" cassettes should be provided. Grid Size 15" x 15", Ratio 6:1, 103 lines per inch.
- Table Accessories like Stray radiation lead rubber flap, Stainless steel cassette tray Compression band, handgrips, Footrest & footstep should be provided.

### **IITV SYSTEM:**

- 9" triple field Image Intensifier should be provided.
- 9" I.I mounted directly on SFD with Motorized Up/Down movement. Soft touch control panel on SFD should be provided to control fluoro KVP.
- High Resolution Compact CCD Camera should be provided. Pixels of camera should be 750(H) X 500(V) or more.
- **02 No. 17"** TFT / LCD Monitor along with a trolley.

**MEMORY SYSTEM** should include the following features:

Digital Image Processing-IQ System consists of the following functions:-

#### **Standard features detail**

- Dedicated PC based Image acquisition software with Image storage capacity of > 10,000 Frames. PC should be of 1Tb hard disc memory, 3.5 MHz processor and 8GB RAM.

- Operating Modes

- o Fluoroscopy

- o Boost Fluoro/ Cine

#### **Pre-Processing Features**

- Pulse fluoroscopy facility with Frame rate of 12fps for Fluoro & cine modes.
- Cine loops storage up to 630frames (Multiple cine Loops storage).
- Option entering for of Patient ID, Data type, operator & Location.
- Last Image Hold facility

- Frame averaging (recursive) for smoothing of images real time up to 256 frames
- Histogram view.
- 75 Temporary image storage for quick review.
- Circular blanking.

#### **Post processing features.**

- Image reversal-Left to Right & Top to Bottom
- Image rotation Clock wise & antic clock wise up to 3600 (In 150 steps)
- Window width (WW) & Window level (WL) adjustment for brightness & contrast.
- Image Zoom with pan
- Image Invert / Negative Image
- Image sharpening
- Tile/ mosaic/Thumbnail view for multiple image display i.e. 1x1, 2x2, 3x3, 4x4, 5x5, 6x6, 7x7, 8x8.
- Automatic storage of Cine loops.
- Quick Review of already stored images & Cine loops
- Frame by frame review of Cine loops
- Copy to 2nd monitor

#### **Text & Annotation**

- Addition of text markers
- Addition of pointer
- Removal option of all text from the image.

#### **Measurements Features**

- Length / Distance measurement
- Area measurement
- Angle measurement

#### **Connectivity & storage Features**

- Storage of Images on CD/DVD.
- LAN connectivity to transfer the image to another system.

**POWER REQUIREMENT:** The unit is operable on 3 Phase, 400Volts AC 50Hz.

Line Regulation  $\pm 10\%$ .



**OPTIONAL ACCESSORIES** : A Servo Voltage Stabilizer of suitable rating for complete Unit.

**Other Requirements:**

- The company should be ISO Certified.
- The unit should be approved by AERB and CE.
- Lead protection barrier in front of operating console
- Good quality floor mounting chest stand (stainless steel)
- Site Plan approval & certification from AERB.
- Online UPS for Computer system for 30 min backup.
- Uninstallation of existing machine in specified room
- Electric panel for X-ray machine

**b. SPECIFICATIONS OF 30 KW HIGH FREQUENCY X-RAY MACHINE**

High frequency X-Ray machine suitable for general radiography applications.

**X-RAY GENERATOR:**

- High Frequency X-Ray Generator having frequency of 40 KHz or more should be provided.
- Power output of generator should be 30 KW.
- Radiographic KV Range should be 40 to 125KV in 1KV per step.
- mA Output (Rad.): Up to 400mA
- Exposure time (Rad.): 1msec to 3sec
- mAs Range (Rad.): 1 to 200mAs.

**CONTROL PANEL:**

Attractive and ergonomically designed control panel with total soft touch switches for various operations. having following functions & indications.

- Machine ON/OFF switch
- Digital display of KV and mAs.
- KV and mAs increase and decrease switches.
- Ready and x-ray on switch with indicators
- Bucky selection switch.
- Stand by and exposure release switch.
- Self diagnostic program with indicators for:-
  - Earth fault error
  - KV error,
  - Filament error
  - Tube Head thermal overload.
- X-Ray on indicator.
- Incoming voltage indicator.
- Anatomical programming up to 216 pre-programmed functions in which automatic selection of Technical Factors is done according to the Body part Selection.
- A 2-Step hand switch with dual action for exposure release with retractable cord is provided for taking images from a safer distance.

**X-RAY TUBE:**

- One No. Dual focus Rotating Anode X-Ray tube thermally protected.
- Anode heat storage capacity of tube should be more than 130 KHU.
- One Pair of 8 meter H.V. Cable.
- One No. Collimator with auto shut off facility should be provided.

**HV TANK:**

A very compact H.V. Tank filled with high dielectric transformer oil should be provided. The H.V. Tank should contain H.V. transformer, Filament Transformers, H.V. Rectifiers & H.V. Cable receptacles.

**TUBE STAND:**

Floor to Ceiling Stand with Counter Balanced Tube Head (Rotatable  $\pm 180$  Degree), 360 Degree Rotatable; mounted on Floor Ceiling Rails for convenient movements should be provided.

**TABLE:**

**5 Position Manual tilt Table:**

- Hand tilt five position examination table, tilt from trendelenburg to vertical (-12, 0, 30, 60 & 90 Degree).
- It has a motorized bucky consisting of a grid having 85 lines/inch and 8:1 ratio.
- The size of the grid is 17 $\frac{1}{4}$ " X 18 $\frac{7}{8}$ ".
- It also has a stainless steel cassette tray, foot rest and grips.

**POWER REQUIREMENT:** The unit is operable on 3 Phase, 400Volts AC 50Hz.

Line Regulation  $\pm 10\%$ .

**Other Requirements:**

- The company should be ISO Certified.
- The unit should be approved by AERB.
- Site Plan and AERB certifications should be done by vendor.
- Two way communication system (console and machine room)
- One 6x3fit table
- Two revolving chair

**TURNKEY work:**

About 300sf

Floor and wall tiles. (wall tiles up to 7 fit)

False roof

Electricity wiring

Electricity panel

One Besine

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