BIDDING DOCUMENT

TENDER NOTICE No.: 0 2/ 2017 - 2018 / Biomedical Equipt./ IGIMS / Store

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

TENDER NOTICE No.02 /2017 – 2018/ Biomedical Equpt./ 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.

INDEX

IMPORTANT DATES

Last date for Purchase of Bidding Document	Can be downloaded from Institute website
Last date for submission of Technical bid.(Hard copy)	30/05/2017 up to 16:00 hrs. by registered/speed post/ Courier only
Date of opening of technical bid	31/05/2017 at 3:00 P.M. in conference hall IGIMS, Patna.
Date of demonstration of equipment	To be informed to the qualified bidders qualifying after opening of technical bids.

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

Sr. 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 SUBMIITED 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.**

Sl. No.	Terms & Conditions as per Bidding Document	Page No.	Remarks
1.	**Status of Bidder:** • Manufacturer or Authorized Agent of the Manufacturer • Whether Public Undertaking, Public Ltd., Private Ltd. Company or Proprietary Firm/partnership firm • (Please attach Notary certified **MANUFACTURER'S AUTHORISATION FORM as per FORMAT placed at Annexure – III)**		
2.	**Power of Attorney as per Annexure - V** 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.	**Notary certified User List** (List of Govt. /Semi Govt., Reputed Pvt. Hospital) where quoted model of the items has been supplied and installed.		
8.	**Notary certified Supply** order copy (Minimum 3nos. or more) issued by Govt./Semi Govt.//Reputed Pvt. Institutions/organization for the quoted items. (same model)		
9.	**Notary certified Performance certificate** of the same supplied machine/ or higher version of same make (of quoted make and Model) issued by **Head of the deptt. or Institution** 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.	**Quality Assurance Certificate** like ISI, ISO-9002, IP/BP, CE, FDA (US) or any other (please specify) .As per bidding document		
16.	**Bid Security** amount deposited is enclosed or not. If yes, please mention the details.		
17.	**Original Technical Catalogue** 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, 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 during warranty /CAMC)		
19.	Certificate, to the effect that bidder has quoted its rate for Comprehensive Annual Maintenance Contract inclusive of labour, spares, , accessories etc. on per year basis for a further period of seven years after expiry of warranty period of three years in the **price bid**. (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 **after sales / services** as mentioned in the bidding document.(Clause No-13 of " Instruction to Bidder " & clause no- 3, 4 and 5 of Condition of contract.)		
21.	**Compliance Statement** 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.	**Compliance Statement** with relation to the terms & conditions as mentioned in the document.		
23.	**PAN and copies of Income Tax Returns** 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

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

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

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.	Mentioned Page no.
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.	
	(a) The manufacturer should have completed 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. (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.	
03	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.	
04	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.)	
05	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 T0 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 dep't. of all the quoted and approved items.

4. The "Bidding Document" along with terms and conditions, technical specification can be obtained from the office of the Store Officer, IGIMS, Patna on payment of Rs. 2000/-(Rs. Two thousand only) Non –refundable for each Group either by cash or demand draft favouring Director , IGIMS, Patna payable at Patna.

5. The "Bidding Document" can also be downloaded from institute website www.igims. Org.. In case, downloaded bidding document is used ,Bidder(s) have to submit the cost of the Tender Document along with 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 separate D D for the same in a separate 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 29/05/2017 up-to 12:00 hrs.

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

Earnest Money - 2% of the cost of Equipment 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 favouring 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 latest 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 30th 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, 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.

9. 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.

10. For Imported Goods, Indian Agency Commission must be declared in financial bid.

11. 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 dep't. 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 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.

12. <u>Installation & site plan</u>:-

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?

13. <u>After Sales Service Conditions</u>:

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. <u>Guarantee/Warranty Terms</u>:

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) for a period mentioned in this document in the first instance. During this period, the successful Bidder shall replace all defective parts / accessories 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 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;- <u>The offered warranty includes:</u>

- 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, 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. <u>Comprehensive Annual Maintenance Contract</u>:

- 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.

14. <u>Time Limits prescribed</u>

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.

15. 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.

16. 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.

17. Supplier will submit undertaking for ensuring uninterrupted supply of spares during the total life span of the equipments.

18. Indian agency commission and Installation charge if any will be paid in Indian rupees after successful installation and demonstration of the equipments.

19. Principal's Invoice of the quoted items must be submitted with the quotations.

20. Proof of the official Indian agent certificate of the firm must be attached. (Notary Certified Photocopy)

21. 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).

22. 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.

23. 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.

24. Bidder might be required to demonstrate the system at the discretion of the institute.

25. 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.

26. **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 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 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 Year = 365 days
95% of 365 days = 347 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, PCB, consumables 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 biding 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, consumables 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 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, PCB, all type of consumables 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 biding 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.

06. Delivery period/Liquidated Damage: -

Goods should be delivered within two 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. 1st extension for a month or a part thereof @ 2% per month of C.I.F. value.
ii. 2nd 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 2nd 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 10% 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. <u>Installation & site plan</u>:

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. <u>Responsibility:-</u>

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

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CHAPTER:

Schedule of the Requirement.

SCHEDULE OF THE REQUIREMENT

Sr. No.	Name of the Department	Name of the equipment
Group		
A	RIO	**As mentioned in the NIT**
B	Paediatric Surgery	**As mentioned in the NIT**
C	Anaesthesia	**As mentioned in the NIT**
D	G.I. Surgery/Urology	**As mentioned in the NIT**
E	Cardiology	**As mentioned in the NIT**
F	Trauma & Emergency	**As mentioned in the NIT**
G	Neurosurgery	**As mentioned in the NIT**
H	Transplant Immunology Lab.	**As mentioned in the NIT**

ANNEXURES

Annexure - I (a)

PRICE SCHEDULED FOR DOMESTIC GOODS OR GOODS OF FOREIGN ORIGIN

LOCATED WITHIN INDIA.

1	2	3	4	5							6
				Price per unit (Rs.)							
Scheduled	Brief description of goods Make: Model:	Country of origin	Qty. nos.	Ex-factory/ex-warehouse /ex-showroom/off-the shelf (a)	Excise duty(if any) % and value. (b)	Sales tax/ vat/octroi (if any % and value. (C)	Packing and forwarding charge (d)	Inland transportation , insurance for a period including 3 months delivery, loading/ unloading and incidental cost till consignee site. (e)	Incidental services (including installation and commissioning, supervision, demonstration and training) at the consignee site. (f)	Unit price (at consignee site basis(g) a + b + c + d+ e + f	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)					
Scheduled	Brief description of goods Make: Model:	Country of origin	Qty. nos.	FOB price at port/ Airport of lading (a)	Carriage & Insurance (port of loading to port of entry) and other incidental cost . (b)	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 . (d)	Unit Price on CIP Named port of Destination + Extended Insurance (Local Transportation and storage) (e_)	Total Price on CIP Named Port of Destination + Insurance (Local Transportation and storage) 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	1st Yr.	2nd Yr.	3rd Yr.	4th Yr.	5th Yr.	6th Yr.	7th 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 if 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) **ResponseTime:**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/warrantee /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 scope.

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 : _____

SPECIFICTION AND ALLIED TECHNICAL DETAILS

Group- A - RIO Dept.

(a) High End Operating Microscope

a) This should be a high-end system with which High resolution view of anterior Segment (Wide angle and high Magnification view) is possible facilitating cataract surgery and recording of the same.
b) Main Microscope with motorized zoom: Motorized: 4.2 x – 21 x (0.42-2.1) with automatic reset.
c) Focusing: Motorized with 55 mm travel and automatic reset.
d) XY Coupling: Motorized with 60 mm movement range and automatic reset Base: 33"X 31"X 10"with 5 dual locking casters.
e) Illumination: Halogen
f) Pupillary distance: 50 mm -75 mm.
g) Maintains a consistently stable, high quality red reflex regardless of pupil size centration lens tilt or patient eye movement.
h) Greater depth of focus with an approximately 60 mm longer focal length that maintains equivalent working destine
i) XY Communication system: At- a- glance to unique parameters, such as XY and focus position full color.
j) Fully Programmable wireless/ wired foot pedal control.
k) XY Position: Allows constant confirmation of positioning within the XY field.
l) Focus position: Enables awareness of excursion point.
m) True magnification: Useful for evaluating procedures and gaining feedback.
n) Assistant scope coaxial
o) Allows 180° swivel for positioning convenience.
p) Objective: wd =165 mm or wd=175 or wd=190 or wd=200 mm.
q) Binocular Tube: 0° -200° or more inclinable: f=170 mm
r) Floor stand: Spring-adjusted articulation arm, Horizontal reach: Arm=47"End of optics=50"Vertical reach: 28" Rotational angle: 320°
s) Speed adjustable for focus zoom & XY
t) Video adapter with c-mount, fine focus, iris and XY adjustment with HD System, camera
u) 36" LED TV Monitor for Display.
v) Reset of focus Zoom XY position with a single push of a button
w) Biom with lenses with inverter
x) USB functionality for video and still image capture.
y) Video Recorder and other accessories needed for recording of high resolution video of surgeries through the microscope
z) 2 sets of Autoclavable Silicone cover for all the adjustment knobs of the microscope
aa) Should operate from 110-240 V: 50 – 60Hz
bb) All equipment should have safety certificate form a competent authority CE/ FDA (US) / STQC CB certificate / STQC S certificate of valid detailed electrical and functional safety test report from ERTL. Copy of the certificate / test report shall be produced along with the technical bid.
cc) KVA online UPS with 30 min back up needed.(Suitable UPS as per need of Machine)

(b) Field Analyser

a) Stimulus:
b) Gold Man Stimulus Size
c) White on White
d) Blue on White
e) Blue on Yellow
f) Fixation Control:
g) Video Eye Monitoring
h) Heijl-Krakau Fixation Method
i) Gaze Traking
j) Head Tracking
k) Lens Tracking
l) Remote Video Eye Monitor Area of Field tested
m) 90 Degree
n) Test Strategies:
o) SITA 10-2,24-2,30-2, Macula
p) Full Threshold
q) FAST PAC
r) Screening C-40,C-64,C-76

s) Analysis Software:
t) Single Field Analysis
u) Multiple Field Analysis
v) For Blue on Yellow
w) Glaucoma Progression Analysis Software
x) Printer: Full Page color Ink Jet
y) Data Storage of Adequate capacity on HD
z) Forum Compatible
aa) Touch Screen
bb) Keyboard
cc) Motorized Chinrest

(c) <u>ETO Sterilizer</u>

- Interior made of 304 stainless steel, mirrors sterilization, anti-corrosion.
- Equipped with a thermal barrier layer.
- Double protective doors, insulation, sealing and leak proof
- Sterliasation process automatic control, LCD/Digital Panel Display.
- Anti-leak vacuum pumping system.
- Automatic Humidification System
- Automatic Heating System
- Auto Exhaust System should be sound proof.
- Efficiency and prevent environmental pollution discharge residual heating air purification system.
- Audio Visual Alarm system for temperature, pressure and leakage.
- Exhaust pipeline to be above the top floor of the building, copper pipeline.
- Temperature accuracy: ±1ºC
- Vacuum Pressure: -7~70KPA
- Composition of Gases (90% Ethylene Oxide and 10% Carbon Dioxide or 100% Ethylene Oxide)
- Operating Temperature to be settable at 35 degree Celsius and 55 degree Celsius.
- User Interface: Software , Automatic (Stages to be displayed or recordable for printing)
- Physical Characteristics:
  Dimension(metric): Max:450MMX450MMX1200MM
  Weight(LBS,KG): NA
  Configuration: NA
  Noise(IN DBA): Noise free System
  Heat Dissipation: Should maintain nominal temperature and the heat should be disbursed through an cooling Mechanism.
  Mobility, Portability: Portable
- Energy Source:
  Power requirements Recharging Unit:
  Input Voltage-220V-240V AC, 50HZ Single-Phase
  Battery Operated: Yes
  Tolerance(To Variations, Shutdowns):NA
  Protection: Should have overcharging cut-off with visual symbol
  Power consumption: Can be operated on UPS

Group-B- Pediatric Surgery-

Technical Specifications of Paediatric Laparoscopic set with Accessories-

Camera

Digital image processing including dynamic aperture and automatic shutter regulation Output format 16:9 according to camera senor , Full HD output 1920X1080 pixel 4 profiles adapted for special indications Digital electronic zoom (2X) in excellent quality ,2 remote pout puts 3.5 mm BF isolation of applied part on control unit Automatic request for white balance after each start up sequence core integration for central control via touch screen or voice commands Camera head .

Monitor

24" High Definition (HD) Medical imaging system for Minimally Invasive Surgical (MIS) and interventional procedures . It consists of Multi Modality Image viewing .
Inputs:- Syn No Green Optional fibre optic (for PACS, MRI, CT imaging)

Telescopes

*PANOVIEW PLUS TELESCOPE diam 5.3 mm deg distortion free autoclavable working length 300 mm.
*PANOVIEW PLUS telescope diam . 5.3 mm , 30 degr distortion free autoclavable working length 300 mm
*PANOVIEW – Telescope 0 Diameter 10 mm, distortion free
*PANOVIEW Telescope 0 Diameter 5mm Distortion Free. *PANOVIEW – Telescope 30 Diameter 10mm, distortion free
*PANOVIEW – Telescope 30 mm Diameter 5mm distortion free

Hand instruments

*Veres cannula 120mm working length including
*Trocar sleeve with magnetic –ball valve plastic with retaining thread straight distal tip, capacity 305 mm working length 60mm.
*Trocar pyramidal tip capacity 3.5 mm working length 60mm
* Trocar sleeve with magnetic ball valve metal sleeve standard straight distal tip working length 100 mm capacity 3.5mmt
*Trocar pyramidal tip capacity 3.5 mm working length 100 mm.
*Trocar sleeve with magnetic –ball- valve without in sufflation tap metal sleeve standard straight tip capacity 5.5 mm. working length 60 mm.
*Trocar pyramidal tip 60mm working length .
* Trocar sleeve without insufflation tap capacity 5.5 mm Metal sleeve standard straight distal tip WL 100mm. *Trocar with pyramidal tip capacity 10 mm working length 100mm
*Tricar pyramidal tip for ART trocar sleeves diam 10mm working length 100mm *Trocar pyramidal tip for ART trocar sleeves diam . 10 mm working length 100mm * Instrument sleeve3 and extractor 12,5/10f.0 mm working length 170 mm.
*Insulated reducing sleeve 5,5/3,5 mm working length 160 mm.
*Scissors " Metzenbaum" moduler curved left both jaws opening insulated 3,5 mm WL 310 mm : consisting of jaw insert with insulated sheath tube and irrigation tab comfort handle without locking mechanism rotatable. *Scissors modular 5mm curved left both blades opening " Metzenbaum" WL 310 mm comprising jaw sheat tube isolated handle without locking mechanism swiveling .
Micro scissors Metzenbaum curved left double jaw action monopolar Diameter 5 mm WL 310 mm cpl consisting of Handle sheath tube insert .
*Hook scissors modular single jaw action insulated 3,5 mm WL 310 mm consisting of jaw insert with insulated sheath tube and irri gation tab comfort handle without locking mechanism .
*Dissector cpl consisting of insert with sheath tube diameter 3,5 mm WL 240mm.
*Grasp & dissect forceps "Mixter " angled fine pyramidal shaped teeth double jaw action monopolar Diameter 5mm WL 310 mm cpl consisting of Handle sheath tube insert.
*Grasping coag forceps Dolphin both jaws opening monopolar comprising: comfort handle sheath tubing inner path .

*Grasping / dissecting forceps modular curved left both jaws opening " Maryland Dissector " 3,5mm WL 240 mm
*Atraumatic grasp forceps for fine structures double jaw action monopolar diameter 5mm WL 310 mm cpl consisting of : Handle sheath tube insert .
*Grasping and Dissecting forceps modular , 5mm single jaw action WI 310 mm comprising jaw insert sheathg tube isolated handle with locking mechanism swiveling.

tube isolated handle with locking mechanism swiveling .

*Modular atraumartic grasping forceps insulated both jaws opening diam 3,5mm working 240 mm consisting of jaw insert with i8nsulated sheath tube and cleaning channel axially aligned handle with locking mechanism rotatable.

*Atrium grasping forceps " Babcock" large distal grasping surface with fine horizontal serrations double jaw action monopolar diameter 5mm WL 310 mm cpl consisting of Handle sheath tube insert

*Grasping forceps "Babcock" modular both jaws opening 3,5 WL 240 mm WL 240 insulated consisting of jaw insert with insulated sheath tube and irrigation tap comfort handle with locking mechanism rotatable . *Grasping forceps atraumatic clamp "Debakey " axial grooves with fine horizontal serrations double jaw action (without HF) diameter 5mm , WL 310 mm springy branches cpl consisting of Handle sheath tube insert .

HOOK ELECTRODE

-Hook electrode diameter 5mm working length 340 mm -Spatula electrode diameter 5mm WL 340 mm

-Modular needle holder straight with carbide insert . -Needle holder straight 300 mm NL d =5 mm

-Suction tube graduated with Luer connector 3 mm , 330 mm WL , d= 5mm -Suction irrigation tube with central opening 290 mm WL, d=5 mm

-Coagulation suction tube with Luer connector capacity 3mm , 315 mm WL d =5mm -Clip applicator 340 mm NL, d=10mm

-Bipolar forceps 5 mm WL 300 mm with fenestrated parallel paddle and spring handle sliding sleeve and outer tube .

-Bipolar coag forceps diameter 5 mm with spring handle comprising 8393.726,8393.923, 8393.925.

LED Light sources with universal light cable socket inclusive 180W xenon short arc lamp and power cable , colour temperature approx 6000K continuous manual light control form 2-100% classification CF power supply 100- 240V-, 50/.60 Hz dimensions wxhxd, 330X100X380 mm. -Fibre light cable 3mm long fibre bundle diam 4,5 mm

-Lapro-Co2 Insufflations up 20L/Min including Insufflations tube , diameter 5mm 2.5m long hygienic filter , strle pack 0f 10 power cable 3m long.

-Suction irrigation tube with central and lateral opening, 290 mm WL,d =5mm

Digital Recording System

-Mobile video trolley including at least 4 shelves 4 anti – static castor wheels, camera -Head holder, infusion bottle holder ,Co2 cylinder holder, integrated cable ducts, Indian.

-Formalin chamber (Indigenous) ;- Bidder should also quote separately for the supply of F. C with cidex tray (Indigenous)

-Cidex tray tray

-Bidder is required to quote rate of each accessories separately.

-The unit shall be capable of being stored continuously in ambient temperature of 0-50degree c and relative humidity of 15-90 %

-The unit shall be capable of all type of laparoscope procedure. -All accessories should be from parent company.

-Such accessories should be quoted separately. -The instruments must be USFDA approved.

(2):-Specification of O T Table-.

Sl No	Name of the items		
	Electro-Hydraullic Operating Table.		
	Made of rust proof and acid proff Stainless steel.		
	Modular or Multisectional Table Top with exchangeable Suctions.		
	Should have all the functional movements provided by reliable electrohydraulic system,Like vertical movement ,Lateral tilts,Head and front end raising etc.		
	Should be C-Arm comaptible		
	Designed to support the patient during all surgical procedure and operation related to Genral surgery,Neurosurgery, urology, G.I. Surgery, orthopaedic Surgery and cardiothoracic surgery.		
	Should be European CE and USA FDA Certified		

3- PADIATRIC /NEONATEL RIGID BRONCHOSCOPE-

1. Digital three chip Endovision Camera : One (Compatible with Telescopes of Bronchoscope, Oesophagascope and Cystoscope)

Color system PAL/NTSC, power supply : 100-240VAC, 50/60 Hz compatible with Pal. NTSC, automatic white balance with control or base unit and also on camera.

Integrated zoom lens for manual and automatic control for exposure of fog. Compatible with VHS and comp and DVI. Minimum sensitivity 3 lux. Instrument coupling for all rigid endoscope. Long camera cable 300cm. Two pre set function keys on camera for control of camera function, Printer, computer, VCR and other Peripherals.

Consisting of:

Main cord, with per focal zoom lens, camera head, camera control unit (CCU), BNC/S Video connecting cable, length 180cms, 2 connecting cables for connecting video printer or recorder, DV cable, lenth 500cm 6 to 4 pin, keyboard.
Xenon/ Halogen Light source with fibreoptic cable

2. **Medical Grade Color Monitor 19" (Fully flat screen) :** one special 19" monitor (TFT) medical grade, PAL/NTSC & SECAM color system. For Bronchoscope, Oesophagoscopy and cystoscopy.
3. **TELESCOPE**

A. Strainght forward telescope 0 degree, diameter 2.9 mm, length 36cm, autoclavable, fiber optic light transmission incorporate (One)
B. Straight forward telescope 0 degree, diameter 2.9mm, length 30cm, autoclavable fiber optic light transmission incorporated (one)
C. Straight forward telescope 0 degree, diameter 2.7mm, length 18cm autoclavable fiber optic light transmission incorporated (one)

4. **BRONCHOSCOPE SHEATH**

Should have attachment (Channels) for anaesthesia (Ventilation) and instruments and optical prism light.

A. Bronchoscope sheath, size 6, outer diameter 8.2mm, inner diameter 7.5mm, length : 30cm (one)
B. Bronchoscope sheath, size 5, outer diameter 7.8mm, inner diameter 7.1mm, length : 30cm (one)
C. Bronchoscope sheath, size 4.5, outer diameter 7.3mm, inner diameter 6.6mm, length : 30cm (one)
D. Bronchoscope sheath, size 4, outer diameter 6.7mm, inner diameter 6mm, length : 30cm (one)
E. Bronchoscope sheath, size 3.7 outer diameter 6.4mm, inner diameter 5.7mm, length : 30cm (one)
F. Bronchoscope sheath, size 3.5 outer diameter 6.4mm, inner diameter 5.7mm, length : 30cm (one)
G. Bronchoscope sheath, size 4.0 outer diameter 6.7mm, inner diameter 6.4mm, length : 26cm (one)
H. Bronchoscope sheath, size 3.7 outer diameter 6.4mm, inner diameter 6.4mm, length : 26cm (one)
I. Bronchoscope sheath, size 3.5 outer diameter 5.7mm, inner diameter 5.0mm, length : 26cm (one)
J. Bronchoscope sheath, size 3.0 outer diameter 5.0mm, inner diameter 4.3mm, length : 26cm (one)
K. Bronchoscope sheath, size 3.5 outer diameter 5.7mm, inner diameter 5.0mm, length : 18.5cm (one)
L. Bronchoscope sheath, size 3.0 outer diameter 5.0mm, inner diameter 4.3mm, length : 18.5cm (one)
M. Bronchoscope sheath, size 2.5 outer diameter 4.2mm, inner diameter 3.5mm, length : 18.5cm (one)

5. **Optical forceps (compatible with above mentioned telescopes and bronchoscope sheaths)**

Optical alligator forceps, 2x2 teeth, with spring action handle for controlled removal of flat foreign bodies (such as coins) : (two)

A. Optical forceps, with spring action handle for controlled removal of soft foreign bodies (such as peanuts): (two)
B. Optical alligator forceps, with forced controlled handle, for removal of hard foreign bodies (two)

6. **Forceps (one each)**

A. Forceps alligator, grasping, double action jaw, sheath diameter 1.5mm, working length : 35 cm
B. Forceps alligator, grasping, double action jaw, sheath diameter 1.5mm, working length : 35 cm, pointed serrated for coins and foreign bodies.
C. Forceps alligator, grasping, double action jaw, sheath diameter 1.5mm, working length : 35 cm, pointed of peanuts and soft foreign bodies.

D. Biopsy Forceps 35cm.

7. **Sponge Holder:-** (Spring handle working length 35cm (one)

8. **Right Suction tube with Rubber Tip** (one each)

A. Rigid Suction tubs, straight length 35cm, diameter : 3mm
B. Rigid Suction tubs, straight length 25cm, diameter : 3mm

9. Foreign body basket with right handle, working length 35cm.
10. Telescope bridge for fixed position between telescope and bronchoscope. Compatible with above mentioned telescopes and bronchoscope sheaths (three)
11. Prismatic light deflection with connection for fiber optic light cable autoclave (Two)
12. Glass Window Plug (Two)
13. Rubber Telescope Guide for use with telescopes or optical forceps (Two)
14. FLUVOG Adaptor with sliding glass window plug, sealing cap, notched lens and keyhole opening, moveable (two)
15. Injection canula only. Leur lock outer diameter – 3.5mm, for use bronchoscope tubes (for positive pressure assisted ventilation (Two)

Injection canula only Leur lock outer diameter – 2.7mm, for use with bronchoscope tubes
(for

positivepressure assisted ventilation (Two)
(a) Bridge to attach 36 cm telescope to 30 cm Bronchoscope.

16. Instrument guide for suction catheter (Two)
17. Adaptor from bronchoscope to any type of pediatric respiration equipment (Two)
18. Sealing plig for ventilation attachment of bronchoscope (Two)
19. Adjustable magnifier, swing – away type autoclave (one)
20. Fiber optic light cable size 3.5mm, length 180cm (Two)
21. Cold light source with twin bulb **Halogen Technology** 150 watt working on 220V AC. Led technology
22. Cold light source with twin bulb 2 ENON Technology working on 220V AC.

23 each accessories should be from parent company & price should be quoted separately. The

24.Instruments must be US FDA approved

Group- C: (Anaesthesia)

(a):**Multiparameter Monitor- no.**

MULTI PARAMETER MONITOR	• Patient monitor system should be of modular type and capable of monitoring adult, pediatric neonatal patients. • Monitor should have 15" or more independent flat panel display. • Touch screen user interface. • Module rack / housing should be independent and shall be able to be placed near to the patientt. • Should be capable of 8 traces display. • Monitor must be capable of simultaneously monitoring the following parameters which should be present as standard: ECG, NIBP, SpO2, invasive pressures (4), temperatures (2), and Capnography. • Should be compatible with Cardiac output, EEG, and BIS. • ECG should have capability for 3, 5 and / or 10 lead monitoring and should have built in arrhythmia monitoring on all leads. • Inbuilt ST segment analysis and arrhythmia detection for all the leads should be possible. • Haemodynamic and drug dose calculations should be available. • Arrhythmia should be grouped based on classifications – and should show no of arrhythmias occurred. • Respiration should be available with Cardio Vascular Artifact filter. • OCRG should be available for monitoring neonates. • ICP monitoring should be possible. • 24 hours trend data should be displayed. • All monitors including central station should have similar user interface for easy usage among all clinicians. • Monitor shall provide the capability to interact with alarms at remote bedsides. • Monitor shall provide the capability to receive and display real-time waveforms, trended data and alarm status from other bedside or telemetry units on the patient monitoring network. • Monitor shall provide the capability enter patient information at the bedside or central monitor. • On-screen keyboard for entering this data is preferable. Should have USB ports to connect mouse, key board, bar code scanner. • Alarm limit status (ON/OFF) must be indicated on-screen for each parameter and actual parameter alarm settings must be displayed on-screen when alarms are on. • Position of the displayed waveforms must be user configurable. • Waveform color changing should be user configurable. • Monitor shall permit the optional ability to receive and display information from other patient devices such as ventilators, infusion pumps and other standalone devices. • All modules should be compatible with all monitors quoted. • Bed to bed communication between the monitors should be possible with out a central station. • Networking to central station should be possible. • Patient monitoring network shall use standard TCP/IP protocol and be capable of residing on hospital's network infra-structure. • Should be compatible with HIS and should be HL7 compliant. • Monitor should have capability to accommodate remote viewing of real time waveforms through internet. • Patient monitoring network shall be able to support up to 1,000 monitoring nodes. • Should be supplied with necessary accessories for adult, pediatric and neonatal accessories. • **Should have US FDA certifications**. **Accessories and spares**

	Accessories and spares 1. ECG / respiration: 5 lead ECG cable and lead wire set and 10 lead ECG cable and lead wire set per monitor 2. NIBP: Adult: 2 sizes and Pediatric 2 sizes and neonatal, 1 size per monitor 3. SPo2 Sensor: Adult sensor with cable, pediatric sensor with cable and neonatal sensor with cable per monitor 4. IBP: Include 10 nos of disposable pressure transducer with bracket and interface cable per monitor 5. Temperature: Skin and nasopharyngeal probes per monitor. **Central Monitoring Station for Multi Para Monitor** • System should have minimum 16 beds capability. • Central station should have 17"/or more color display. • Should have drug dose and hemodynamic calculations. • It should have possible to view information such as vital signs, alarm status, arrhythmia analysis, trended parameters, patient data etc for any selected bed from the central station. • Should have separate computer keyboard and 4 channel thermal array recorder. • Should have default alarm limits and customizable parameter settings. • Central station should have full bed review capability. • Central station should be able to be configured as a bedside monitor if required. • Should have 24 hours trends. • **All system should have US FDA certifications**. • Should be supplied with a On-line suitable UPS to cover all monitors & central monitor

(B) FLEXIBLE INTUBATION VIDEO ENDOSCOPE (ADULT SIZE + PED SIZE) non fiber

SPECIFICATION OF FLEXIBLE INTUBATION VIDEO ENDOSCOPE (ADULT SIZE + PED SIZE) non fibre

- Flexible Intubation Endoscope with CMOS chip on tip for digitally transferring the image to the screen. There should be NO Optical Fibre bundles/non fibre optics. Intubation Endoscope should display Full Frame 4/3 or 16/9 Imaging and not the circular image.
- For adult outer diameter of scope should be ranging 4.8- 5.5mm with working length of 65cm or more. Up and down tip deflection should be same ranging 120-160 degrees. Working channel should be 2.0 -2.3mm and it should take ETT from 5.5 sizes onwards.
- For Pediatric outer diameter of scope should be ranging 3.0- 4.1 mm with working length of 65cm or more. Up and down tip deflection should be same ranging 120-160 degrees. Working channel should be 1.4 -1.6mm and it should take ETT from 3.5 sizes onwards.
- Flexible Intubation scope should display good quality picture by connecting it with 7inch or more TFT monitor/integrated LED light source
    - TFT monitor/Screen should have feature control buttons on the screen with HDMI output for connecting to a big screen.
    - Automatic/ manual white balance facility should be available
    - Monitor should run on battery, when fully charged should work for more than 60 minutes
    - Monitor should be upgradable

- Documentation of Video & still images should be possible with operating buttons on the scope to be recorded on SD card and USB pen drive present in the monitor
- It should be light weight, high resolution & potable flexible scope
- Airway Guide (cum Bite block) for Oral intubation should be provided with the set.

- ET TUBE HOLDER has to be a part standard accessory and 5 piece should be provided
- Set should include- Suction Adaptors (Disposable), Cleaning brush & Leakage tester as standard accessories
- Container for sterilization and storage of scope should be provided
- One imported Trolley to hang Scope as well monitor should be provided
- Ten reusable suction caps to be also provided
- Equipment should be European CE/ US FDA approved

- Suitable for following applications-
  - Bronchoscopy
  - Endotracheal Intubation
  - Foreign body removal
  - Bronchial Lavage
  - Inspection of the Airways
  - Dilatation Tracheotomy

-biopsy forceps, grasping forceps should be provided with alligator jaw
-Trolley from same manufacturer
-USFDA or CE European approved
Warranty 3yrs and CAMC 7yrs
Rate of consumable should be quoted separately & fix for minimum 3years in Indian rupees
Note: All equipment's /accessories should be reusable /Autoclavable/ chemical sterilization

(c)Video laryngoscope

Laryngoscope required with video illumination to visualize and document the operational area on screen. It should consist of following features:

- Required is Macintosh blade with Metal finish size 2, 3 and 4 with integrated camera chip and LED light illumination for obtaining more than 50000 Lux of brightness.
- One miller size 0 & 1 blade should present in the set.
- Screen size 7-10 inch for display with feature control buttons on the screen with HDMI output for connecting to a big screen.
- It should be a chip based video laryngoscope and not a prism based device
- Monitor should have a facility to connect flexible scope and video-laryngoscope blade
- Automatic as well as manual white balance facility should be available
- Integrated video as well as still picture recording should be possible on data card and USB drive with JPEG and MPEG4 format which can be easily transferred to the computer/laptop. Monitor should have two ports for SD card and USB drive. Video and still picture can be retrieved on the screen. It should be an upgradable system
- Safety bag for screen to be provided with the facility to operate monitor from the bag.
- Unit should run on both a/c and battery with battery life more than 60 minutes
- Movable stand should be provided to hang the screen
- Accessories like protection cap, tray for cleaning and sterilization of blades (at least two blades at a time) should be provided
- Sterrad and Steris should be permissible for disinfection of blades
- Blades and connection cable should be fully immersible in disinfecting solution
- Equipment should be European CE/ US FDA approved

  -All accessories/ equipment's should be of same manufacturer and USFDA/CE approved.
  -all equipment's should be reusable, can be autoclave/ ETO and chemical sterlised
  -warranty of 3 years
  -CAMC of 7 years
  - Rate of consumable should be quoted separately and fix for minimum 3 years in Indian rupees.

Optional:

- one special blade for difficult intubation with device for introduction of suction catheter for size 16-18 Fr., angle of view should be approx. 80 degree
- Special shaped adult and pediatric Magill forceps for foreign body removal and for assisting nasal intubation should be provided.

(d):NIV Ventilator(BIPAP)

SL No.		
Make		
Model		
Should be USFDA/CE/IEC APPROVED		
Non invasive ventilator with advanced technology constant speed blower valve technology		
Mode of operations available	a: Spontaneous (S)	
	b: Timed (T)	
	C: CPAP	
	D: Spontaneous/Timed(s)/T)	
	E: Assisted Pressure control ventilation.(APVC)	
Should have the following pressure ranges		
	a: IPAP Pressure	4 to 30 cm H2o or more
	b: EPAP PRESSURE	4to 20 cm H20 or more
	C: Rise Time	25-600ms
	d: Inspiratory Time setting	0.2-0.6 sec.
	e: Respiratory rate	2-50bpm
	F: Target tidal volume	100-2000ml/50-1000ml
Should able to display Patient date like:		
	a) Delivered Pressure	
	b) VT	
	C) Leak	
	D) Min Ventilation	
	E) Set. Mode	
	F) Resp. Mode	
	G) Graph for pressure & flow	
Should have advanced technology for triggering and cycling throughout changing breathing pattern & Leak		
Unit offered should have the latest constant speed blower with valve technology to ensure better patient-machine synchronization		
Should be supported with inbuilt expiratory sensor at patient end and patient circuit with sensor tubing should be supplied with the machine		
Should have alarm for:		
	A) High Pressure	
	B) Apnea	
	C) Low minute Ventilation	
	D) Low VTe	
	E) High Leak	
	F) Power off	
Input Power	100 VAC -230 VAC at 50-60 HZ	Battery backup 2hrs
Machine should be supplied		

with following accessories:		
	A) Reusable Patient Circuit (Autoclavable) with Sensor Tube	
	B) Silicon Reusable (Autoclavable) 2 small size Full face masks, 2 medium size full face masks, 2 large size full face mask and 2 medium size nasal masks.	
	c) Power cord	
	d) User Manual	
	e) Trolley for NIV Machine	
Filter should be washable and reusable		
Machine should be covered under 3 year warranty & CAMC 7 yrs		
List of consumables if any with price frozen for 5 years should be quoted separately		
Bidder should point wise compliance statement		
Should have minimum cost, please quote cost of		
	A) Consumables	
	B) CAMC	
Bidder should user satisfactory reports for at least two institute/ Hospital of repute		

Group-D: GI Surgery & Urology Department

1.Technical SPECIFICATION Of FIBEROTIC CHOLEDOCHOSCOPE WITH LIGHT SOURCES

1. 4.5mm diameter, 1.7mm channel, 188cm length
2. 4.9mm diameter, 2.2mm channel, 38cm length
3. Box for keeping the instruments

Note: - Tenderer should quote rate of each items separately. Institute shall procure the items required only from the approved tenderer.

2.Technical Specification of. Harmonic with ACE, with Complete set: -

1. **Ultrasonic generator** with 55.5 KHz frequency functional for both Laparoscopic and Open surgery & compatible with 5mm and 10mm blades.
2. **5mm ACE** Lap and open shear for cutting and hemostasis.
3. **Wave** technology shear for open colorectal surgery & abdominal hysterectomy etc.
4. **Focus technology shear with Blue hand piece** for open procedures like Breast, Thyroid & head & neck surgery etc.
5. **Hand piece** with in- built transducer & silicon cable for all shears & blades of Harmonic.
6. CF isolated generator confirming to safety standard IEC601.1 class, electromagnetic compatibility, UL 2601-1 & defibrillator protection.
7. **Footswitch & cable** with max & min pedals**.**
8. **Cart** to House the equipment**.**
   a. Frequency – 50/60Hz. Current Consumption -: 3 Amp & relative humidity 10-90% non-condensing.
9. System should have a universal connector to connect ultrasonic energy and advanced RF energy instruments.
10. System should have automatic instruments reorganization. System should be CE approved.
11. System should have a touch screen display for fast and setup, operation and on-screen diagnostics.
12. System should have a high resolution display with wide viewing angles.
13. System should have the ability for software updates via UBS memory stick.
14. System should be a single generator that provides ultrasonic energy and Advanced RF energy technology for soft tissue dissection and vessel sealing.
15. System should have a potential equalization terminal for compatibility with other medical system requiring such connection.
16. System should conform to the following international standards EN (IEC) 60601-1 EN (IEC) 60601-1-2, EN(IEC) 60601-2-2, EN (IEC) 60601-1-8
17. System should provide class 1 protection against electric shock.
18. System should have a single footswitch for operating ultrasonic energy or advanced RF energy instruments
19. System should have an ability to select hand switch or footswitch activation or both or ultrasonic and advanced RF energy instruments and the ability to change selection during use
20. System should have 6 international language options with English language as default
21. System should not have minimal lateral thermal spread more than 1 mm
22. System should have standby mode to ensure safety'
23. System should come equipped with system diagnostics and troubleshooting guide to pin point any problems in the systems.
24. System should have onscreen warning display system for generator overheating generator software upgrade hand piece errors and instrument errors
25. System should be power ultrasonic energy instruments with 55.5 KHz frequency and have the ability to power ultrasonic energy instruments in the frequency range of 30-80 KHz in future.
26. The hand piece for the system should come with an inbuilt transducer.
27. System should be compatible for open surgery and for laparoscopic surgery.
28. System should be compatible with both 5mm and 10mm instrument.
29. System should have at least 5 power setting levels with power level display for ultrasonic energy instruments.
30. System should be able to power energy instruments with microprocessor controlled bipolar electrosurgical radiofrequency technology with a quasi-sinusoidal forced

impedance output.

31. System should be equipped with smart advanced RF energy technology to measure the tissue impedance and control the power delivery
32. System should be equipped with advanced RF energy techno logy that can simultaneously seal and transect vessels up to and including 7mm large tissue pedicles and vascular bundles.
33. System should be equipped with advanced RF energy technology that provides temperature controlled energy delivery which should maintain tissue temperature approximately at 100 degrees Celsius.
34. System should have advanced RF energy hand instruments with a unique electrode configuration to minimize the lateral thermal spread.
35. System should have advance RF energy hand instruments with technology to deliver high compression uniformly across seal area.
36. System should have RF energy hand instruments that provide tissue/vessel seal strength to withstand bursting pressure of 7 times the systolic pressure.
37. All hand probes for open lap procedures should be able to simultaneously cut and coagulate tissues.
38. System should be able to power advanced RF energy hand instruments of 5mm shaft diameter for both open & laparoscopic procedures with round tip (5mm tip width) in the following shaft lengths (14cm.25cm 35cm &45cm) and should be both hand &foot activated.
39. System should be able to power ultrasonic energy hand instrument of 5mm shaft diameter for both open & laparoscopic procedures with the following specifications open surgery instruments.
    a) 9cm shaft curved tapered tip for precise dissection seal 5mm vessels as well as lymphatic with 16mm active blade &240- degree activation triggers support multiple hand positions.
    b) 17cm shaft curved tapered tip for precise dissection seals s5mm vessels as well as lymphatic with 16mm active blade & 240-degree activation triggers support multiple hand positions.
    c) 5mm hand activated curved coagulating shears capable of sealing blood vessels up to 5mm in diameter 23cm shaft length ergonomic handle.
    d) Curved blade having telescoping shaft (10cm-14cm) with integrated hand activation control buttons.
    e) Dissecting hook having telescoping (10cm-14cm) with integrated hand activation control buttons.

40. LAPAROSCOPIC SURGERY INSTRUMENTS
    a) 5mm lap hand activated curved coagulating shears capable of sealing blood vessels up to 5mm in diameter 36cm and 45 cm shaft length ergonomic handle.
    b) 5mm lap dissecting hook 32cm long

SYSTEM SHOULD COMPRISE OF THE FOLLOWING HARDWARE

- Generator Footswitch Cable Accessories.
- Hand piece (Transducer Hand piece (Blue) Generator Cart
- Adaptors for ultrasonic and advanced RF energy instruments RF Energy instruments.
- Hand probes (one each of 5mm shaft diameter for both open laparoscopic procedures with round tip (5mm tip width) in the following shaft lengths (14cm 25 cm &35 cm and should be both hand & foot activated both open and lap devices should be able to simultaneously cut and coagulate tissues.
- ULTRASONIC ENERGY INSTRUMENTS
    - 9 cm shaft & 17cm shaft curved tapered tip for precise dissection seal 5mm vessels as well as lymphatic with 16mm active blade &240-degree activation triggers support multiple hand position one pc each
    - 5mm hand activated curved coagulating shears capable of sealing blood vessels upto 5mm in diameter with 232 cm, 36cm shaft length ergonomic handle one pc each
    - 5mm lap dissecting hook 32 cm long – one pc

Group-E(Cardiology)

Cardiac Cath Lab.

a:**Cardiac Cath Lab. (MECHANISED SINGLE PLANE SYSTEM) - Qty.01**

State of the art single plane cardiovascular system with flat panel detector technology digital imaging system for diagnostic procedures and interventional cardiovascular procedures, valvuloplasty , vascular Angiography, pediatric interventional cardiology and online DSA. The system must include all package for Cardiac applications. The system should be of latest generation and options for future upgradations if required later on (should be future ready).

1.0 Single Plane Gantry system

1.1 The system should have slim design multidirectional C' arm gantry: ceiling suspended/ floor mounted providing full body coverage. Gantry movements should be rapid, motorized & collision proof. Manual override by the operator should be possible. There should be equivalent maneuverability for unobstructed resuscitation during cardiac arrest,while continuing to do fluro/cine at various angulations without any obstruction at head end.

1.2 It should be possible to pre-programme the gantry and table for multiple/several user defined examination positions. (at least 30).

1.3 Gantry should have fast speed for angulations and positioning. All movements should be motorised with minimum speed of 18deg/sec for all positions..

1.4 Head to toe coverage with Single plane without repositioning the patient should be available.

1.5 Motorised peripheral position for peripheral and vascular interventions should be available.

1.6 Facility for motorised positioning/rotation of ceiling pivot by+/- 90 deg for improved workflow. Patient access should be possible from both left and right side

2.0 Table

2.1 Table should be floor mounted long table with carbon fiber table top with easy patient transportation capability.

2.2 Table should have at least +/- 15 deg head up/down table tilt and table pivot/ rotation facility

2.3 It should support patient load of min 160 kg or more.

2.4 Table should have a Radial procedure compatibility arm/accessories as part of standard.

3.0 X-Ray Generator:

3.1 100 KW or more high frequency generator with latest technology compatible with high resolution imaging along with facility to automatically adjust the dose according to the size of the patient.

4.0 X-Ray Tube:

4.1 X-Ray tube should be with fine focal spot (small & large) with high cooling rate to ensure continuous operation, capable of pulsed fluoroscopy on both focal spots. The large focus power output 80 KW or more. The Pulsed Fluoroscopy should be offered with pulse rate of 3.75 frames /sec to 30 frames/sec.

4.2 The X-Ray tube should have Anode heat storage capacity of at least 2.4 MHU or more to run continuously for 6-8 hours without shutting off.

4.3 X-Ray tube must be capable of long fluro time of at least 2 min at one go as occurs in CTO cases or long interventional procedures without getting heated.

4.4: The system should have latest hardware and software to prevent unnecessary radiation.

5.0 Radiation protection:

5.1 The system should have integrated computer controlled (preferably automatic) X-Ray Beam filtering with copper filters of various sizes (0.2mm to 0.9mm)for soft radiation filteration in both fluoro and acquisition mode . Please list the special filters available

5.2 The system should have positioning of collimator blades without radiation.

5.3 The system should have monitoring and display of X-ray dose during the patient examination. It should be possible to create a DICOM based dose report of the patient.

5.4 The system must have all software/hardware package for radiation safety of operation and patient like CLEARITY IQ/ CARE & CLEAR OR ITS EQUIVALENT.

5.5 System should meet all National & International safety standards & comply with BARC & AERB guidelines.

6.0 Digital imaging System:

6.1 It should have flat panel detectors 30 cm X 30 cm to max of 30cmX 40cm.Optimal for both coronary and peripheral work.

6.2 Option for 3-4 zoom fields with smallest of atleast 6‖ or 15-16 cm in diagnol.

6.3 System should have acquisition and processing in 1024xl024 matrix up to 25/30 fps

6.4 System should have cine loop replay facility & Last image hold facility during fluoroscopy

6.5 System should have image storage capacity of at least 1,00,000 images in 1024 x 1024 matrix.

6.6 System should have capability of ECG display on the live image monitor and archive the ECG display along with angio images on CD, during the acquisition.

6.7 System should have on-line & off-line validated coronary analysis and ventricle analysis program. The software should have Auto calibration facility for stenosis measurement with geometrical and densitometry calculations. The analysis should be possible from table side in the examination room and from the control room and review station possibly.

6.8 The system should have table side control operation with touch screen for complete acquisition and post processing capabilities.

6.9 The system should have on-line DSA capabilities in 1024 x 1024 matrix with acquisition frame rate of 1 frame/sec to 7.5 frames/sec. 6.10 It should be possible to have digital rotational angiography and rotational DSA facility

6.11 The system should have facility for storage of fluoro loop scene of last fluro run (as long as the run). Unlimited and continuous forward fluoro storage facility with excellent quality of flouro images.

6.12 The system should have auto image transfer to PACS facility in background mode

6.13 The system should be quoted with 3D modeling/analysis of coronary arteries.

6.14 **The latest complete software and hardware for visualizing stent with extra high-resolution from table side control.**

6.15 It should be possible to do angle and distance measurements.

7.0 Monitors / Display :

7.1 The monitor display system in examination room should be ceiling suspended and it should be possible to position it on the left or right side of patient table. The monitor should be a single high resolution monitor of at least 56‖ and 8 megapixel resolution with PIP facility to display live and reference image from each plane, patient hemodynamic monitoring, 3D image and CT imaging or IVUS images.One medical grade back up monitor to be provided in console room and one in review station (outside the lab)

7.2 High resolution medical grade TFT/LCD monitors for live image of both planes in control room and monitor to display 3D image

8.0 Digital Archiving

8.1 System should have facility of image archiving on CD/DVD in 512X512 matrix.

8.2 Networking for auto Image transfer during procedure from cathlab in background mode without affecting the system operation into distant review stations.[2 in no].

8.3 All review station to have high end medical grade monitors.

9.0 3D Acquisition and Cross-Sectional Imaging:

9.1 The system should have cross-sectional CT like imaging based on rotational angiography /Pre Acquired CT data..

9.2 System should have software/hardware package for guidance of valve implantation in TAVI procedure from rotational angiography data

9.3 It should be possible to have 3D image reconstruction of vascular structure , Left atrium of heart and aortic arch from rotational subtraction angiography data. The cross-sectional & 3D images should have processing capabilities in the examination room and control room with dynamic 3D roadmaping

9.4 System should have facility of auto positioning of C Arm depending upon 3D image . It should be possible to differentiate between devices like stent and artery in 3D image .

9.5 System should have 3D fusion of cardiac CT data on live fluro for optimized performance in Chronic total occlusion (CTO)cases.

10.0 **CATHLAB RECORDING SYSTEM (Electro-Physiology and Hemodynamic Recorder)**

10.1 The following features should be available in the recorder • 12 Lead ECG Amplifier with floating input • At least 2 pressures with floating inputs • Time and amplitude measurement with electronic calipers • Laser Printer with minimum 16 MB memory with minimum 1200 dpi

10.2 The patient connection box should be easy to install at the patient table in the examination room

10.3 18" color wave form monitor with programmable layout and digital monitoring readout – Two No in control room should be offered

10.4 Display on large 56‖ display in exam room should be offered

11.0 UPS 12.1 System should be offered with suitable online full back up UPSwith at least 30 min. battery backup for complete Cath Lab including cine and fluoroscopy. Emergency lighting should also be on UPS

12.0 Integrated Electrophysiology system with radio frequency ablator

12.1 EP recording system-

1.Minimum 40 intracardiac channels

2. digital amplifier with minimum 32 bit A/D converter with 2 KHZ resolution

3. Review software (PC ready)

4. Should be FDA and CE approved.

5. Sparatemoitor for EP recording and review. Set up should not interfere with routine interventional work.

6.Should be upgradable to 3D mapping system.

7. EP stimulator should be standalone withminimum of 9 pre-programmed protocols and 10 user defined protocol.

8. RF ablator – latest generation system with minimum 130 watt output. Compatibility- thermistor and thermocouple. Should have facility of sequential ablation of upto 4 electrodes. Compatibility with irrigation pump.**Ablation catheters should also be included.**

ACCESSORIES to be supplied:

13.1 State of the art High Pressure Injector – One (table mounted)

13.2 Lead Glass 200 x 120 cm. (as per international radiation protection standard)

13.3 Good quality, light weight Lead Aprons skirt top types with hangers - 6nos and wrap around 12 nos. (as per FDA standard). Radiation protection CAPS- 6 nos.

13.4 Thyroid Guard - 12 nos. (as per international radiation protection system)

13.5 Ceiling suspended radiation protection - 1 no. (as per international radiation protection system)

13.6 Table mounted radiation protection - 1 no. (as per international radiation protection system)

13.7 Biphasic defibrillator cum multipara monitor with external pacing facility.

13.8 ACT machine 1 no with one set of cartridges.

13.9 Integrated two way communication system between control room and examination room. Light music system in the lab.

15.It should be CE & US FDA Approved

16. The bidders should quote their latest model and state of the art machine. Latest version and should specify the time of FDA approval of the Model.

(b) Integrated Optical Coherence Tomography (OCT)
With
Fractional Flow Reserve(FFR) System with real time online 3D imaging features

o The system should have an imaging engine that is based on the fiber optic technology.

o The system should have wireless FFR measurement capabilities.

o It should utilize catheter that emit near infra red light to produce high resolution real time images.

o Should have two monitors(17" and 19") plus remote video output for multiple sightlines.

o The system should have an integrated drive-motor and Optical Controller (DOC).

o Should have an isolation transformer.

o Should have a computer, a keyboard, and a mouse.

o CPU with high end DAS card for faster 3-D data acquisition speed

o 22*CD/DVD RW dual player DVD RAM drive for faster image management.

o DICOM compatibility

The system should allow the user to :

o Acquire, save and subsequently retrieve images for review. Real-time 3D image Re-construction of lumen and vessel

o Immediate and accurate lumen boundary detection and Lumen Profile Display

o Stent planning workflow with automated minimum lumen area and percent stenosis measurements

o Automatic lumen detection on every frame

o Profile of mean diameter or lumen area across pullback

o Automatic marking of MLA frame

o User-defined proximal and distal reference frames

o Automated display of reference frame area and diameters, distance between references, %AS and %DS

o Automated measurements mode for calculations for stent sizing

o Seamless integration of FFR and OCT with guided workflows for exceptional ease-of-use

o Should allow user for easy orientation on Angiography

o Allow to acquire and review images in L-Mode (lateral view).

o Overlay color maps to optimize contrast resolution.

o Enlarge a defined area of interest (zoom).

o Make measurement and calculations of % Diameter stenosis

o Add text annotations.

o Play back and edit images with a full range of playback and editing capabilities.

o Export still images and movies in raw OCT format or in standard AVI, TIFF, JPEG,BMP, or DICOM formats.

o Import OCT format images and review and edit them with full OCT review and edit capability.

o Perform basic file management functions.

The imaging Parameters of the system should be:

o Maximum frame rate: Up to 180 fps

o Longer pullback of up to 75 mm and up to 540 frames

o Faster pullback speed up to 36 mm/sec

o Allows user to do high resolution imaging for online real time 3-D re-construction

o # of lines per frame: 500

o Scan diameter:10 mm

o Axial Resolution: 15 microns

The OCT machine should have option for angiocoregistration.

(c) External Pulse Generator

1	**Must have constant current Driven output from 0.1mA to 15 mA**
2	**Must have pacing continuation after battery removal for at least 30 seconds.**
3	**Must be able to pacing in following modes; AAI ,AOO,VVI,VOO**
4	**Must have sensitivity Atrial ventricle 0.8-20mV.**
5	**Must have basic pacing rate between 30-200ppm**
6	**Must have Atrial overdrive pacing upto 800ppm**
7	**Must have minimum battery life of 250 Hours.**
8	**Should be provided with extension pacing cable and facility to connect. The temporary pacing lead direct to machine and through extention cable**
9	**Must have easy to find and replace AA batteries (9volt Alkaline leak proof compatible)**
10	**Should have local service facility.**
11	**Must submit user list and performance report in the last 3 years from major hospital should be enclosed.**
12	**User manual in English**
13	**Service manual in English**
14	**Must be European CE certified and US FDA approved**
15	**Lead displacement Alarm-Audi ble signal if lead impedance <100 ohm or 3000 ohm.**
16	**Low battery status signal Read light preferable**
17	**High Rate –One time audible signal if > 180PPM**
18	**Facility to fix the machine with flexible band and facility to hang the machine also.**

(d)TECHNICAL SPECIFICATIONS for IVUS

IVUS

System Technical Specifications

1 The system should be the latest generation of Intra-vascular ultrasound for 360° image evaluation of coronary lumen

2 Should be a Windows based system capable of accepting phased array and/ or mechanical transducer technology

3 Should be DICOM-3 compatible

4 Should have DICOM storage to CD-R and hospitable network compatible Compatibility with 20 MHz and 45 MHz catheters for coronary procedures

5 Should be accompanied with Flat Panel LCD ≥ 19" high quality monitor with keyboard, trackball and mouse or with touch pad

6 Data entry should be possible by keyboard and/or touch screen

Hard disk storage space should be sufficient to store at least 20 clinical case studies MINIMUM 30 GB ,WITH OPTION OF REMOVABLE STORAGE.

7 Should have ECG input on screen

8 Multiple image screen format

9 Availability of automatic and manual measurement of all essential parameters like diameter and areas.

Multi-screen format for comparison with prior measurements

10 Should have digital video loop storage with still frames (JPEG) with full editcapabilities including offline editing.

11 Digital Video loop storage: upto 8 minutes with still frames (Jpeg) with full editing capabilities including offline editing
12 Should have automatic border detection, both lumen and vessel
13 Should have on-line 2D longitudinal display and measurements (seen as longitudinal cut section of the artery) as well as cross-sectional imaging
14 Should be capable of incorporating coronary angiographic system (i.e. Co-registration)
15 Should be capable of fully integrating within the Cath-lab systems
16 Should have advanced features like Virtual Histology; Chromaflo or equivalent etc.
17 Should be capable of being upgraded to advanced features such as FFR in future, within the same system
18 Input power: 200 – 240 VAC; and 50/60 Hz
19 Clear visualization of blood flow, improved detection of blood flow; dissections, stent apposition etc.
Color distinctions for plaque composition or colored tissue map.
Should have up gradable software and network connectivity
Compatibility with Coronary, Peripheral and Intra Cardiac Catheters.
20. Accessories:
Printer color (01 No.)
CD/DVD Writer Built-in
IVUS catheters - 5 Nos. 0.014 guide wire compatible
Reusable pull-back device
22 Training of the departmental staff on-site will be required
23 System should be US FDA approved
NOTE; IF IVUS AND FFR IS COMBINED IN ONE SYSTEM, IT SHOULD BE OFFERED.

(e) Cardiac Biomarker Instruments

- Should have a portable unit and should have battery back up
- Should be able to measure quantitatively - Trop I, BNP, NT Pro BNP, CK MB, Myoglobin and D dimer
- Should have a minimum memory capacity of 500 test results with date and time
- Should have a minimum sample volume of ≤ 300µl
- Should have an operating temperature ranging from 18 – 30 degree Celsius
- Should be with built in thermal printer.
- Should be an US FDA and CE Mark system
- Should use Fluorescence Immunoassay Technology
- Should be connected with all HIS and LIS software
- Should be able to perform tests in quantitative manner in less than 20 minutes

Should have built in QC check in facility for the Instrument

(f)Cell Counter(Fully automated 5 part differential haematology analyser)

· Automated hematology analyzer should include 24 parameters including histogram for

RBC, WBC and platelet.

· Should have impedance principle for counting and photometer for hemoglobin.

· It should read at least 60 samples per hour or more.

· Should have dual channel measurement.

· Double dilution chamber

· Sample volume less than 200 micro litres in whole blood and pre –dilute mode.

· It should have various types of discrete mode and real time random access analysis to save reagent consumption and analysis time.

· Sampling needle should have automatic wash from inside and outside.

· LCD / VGA Monitor with graphical user interface (GUI) for easy operation.

· Large illuminated colored VGA or LCD should display the result of all parameters and histogram together.

· Should have sample manual and capillary mode.

· Should have capacity to store at least 20000 numeric patient results and 5000 graphics.

· Should have inbuilt / External graphic printer.

· Should have RS232 serial and parallel port can be connected with LAN and laser printer.

· Should have a membrane keyboard for routine operations and maintenance with option to attach external key board for patient demographic entry at instrument operation.

· Should have three dimensional technology or Flow cytometry for differential analysis to maximize resolution, specificity and efficiency.

· Should have extended analysis time for cytopenic sample. .

· Should be able to integrate with optional automated slide maker and stainer.

· Should have zero routine maintenance with automatic electronic aperture cleaning and back flush after each sample.

· Instrument should accept all types of vacutainer tubes.

· The instrument should have option for auto sampler, bar code reader.

· Reagent cost per cycle including start up and shutdown if 200 & 500 samples are processed at a time should be submitted separately in the financial bid.

· There should be automatic storage of calibration data and extensive quality control programme with LJ plot for at least 8 control lots and at least 25 runs per lot.

Basic common necessities:

· Input Voltage 230 volts 50 Hz as per Indian standard.

· Service manual and technical data with all necessary passwords without any obligation.

· Instruction and operational manuals without any obligation.

· UPS preferably sine wave based with maintenance free batteries with duration two hours.

(g). Latest model ROTABLATOR console to be supplied along with.
ACCESSORIES:

1. Rota Burrs of different sizes- 20
2. Rotalink wire- 20
3. other consumables

should be CE & US FDA Approved

(h) Portable Ventilator- 2

1. Micro turbine controlled intensive care ventilator adult and paediatric
2. Should have invasive – non invasive ventilation
3. Ventilator should weight not more than 5kg (five kg)

Modes:

1. Should have the following modes-
    a. A . PCV (pressure controlled ventilation) / PACV (pressure assisted controlled ventilation)
    b. B. CV (controlled volume)/ acv (assisted controlled volume)
    c. C. SIMV (synchronous intermittent mandatory ventilation)
    d. D. PSV-S(pressure support ventilation) / PSV-ST (pressure support with a back up rate)
    e. E. CPAP (continuous positive pressure)
    f. F. Should have target tidal volume available with all dual pressure modes
    g. Parameter settings:
        A. Tidal volume : 50-2000ml
        B. Rate: 4-60bpm
        C. Inspiratory flow rate:0 to 200 1pm
        D. Peep: 0-20mbar
        E. Inspiration pressure: 4 to 60 mbar
        F. I/E ratio:1.0-3.0
        G. I/T ratio:25-50%
        H. FiO2 measurement upto 50%
        I. Should have inspiratory trigger
        J. Should have exhalation trigger
        K. Should have sigh
        L. Should have double limb ventilation
        M. Should have battery back up for at least 10 hours
        N. Should have availability to change the flow pattern in volume control (rectangle and decelerate)
        O. Ramp control for pressure modes
    h. Alarms
    i. Should have minimum & maximum inspired tidal volume alarm
        A. Should have minimum exhaled tidal volume leak maxi alarm
        B. Should have fr(frequency) maxi
        C. Should have min &maxi inspiratory time
    j. Monitoring & display
        A. Should have vent parameters: inspired positive airway pressure IPAP (inspired pressure)
    k. EPAP (positive exhalation pressure) inspired tidal volume, leak , breath rate ,
    l. FiO2,I/E, inspiratory time Should have alarms, graphics, alarm history, general configuration, preferences, curves
    m. configuration, maintenance menu and sub menu.
    n. C. Should have pressure volume loop, and flow volume loop

(i)Anaesthesia Workstation

Technical specifications:

Frame:

Anesthesia system should be high end three gas system with three gas Oxygen, Nitrous Oxide and Medical Air

double scale flow meter with high and low flow and minimal flow provisions.

System should be designed such that all components are integrated to minimise dead space.

Should have an independent Oxygen flow meter for Oxygen delivery and an integrated variable flow Suction unit.

Anaesthesia machine should have high grade reinforced fibre frame free from oxidation. It should have three drawers, one retractable writing table, and rigid top tray.

System should have at least three drawers and an additional writing surface that can be easily accessed.

Drawers shall all have the ability to lock , and shall be easily removed for the purposes of cleaning

And sterilisation. Pipeline, cylinder and Airway pressures should all be displayed on colour coded gauges and be visible at all times during operation.
Should have provision to attach 2 cylinders 1 each for O2 and N2O.
Should have facility of delivering basal flow of oxygen on switching on the machine.
System should have a second user accessible port for extraction of Anesthetic gas when using a Nonrebreathing patient circuit. System should also provide the option of returning sample gas to the scavenging system with a dedicated port.
A single pneumatic/electric on/off switch should activate the gas flow and vaporization.
The unit should have a battery back up facility for the ventilator in the event of power loss and should operate for a minimum of one hour.
In the event of complete power loss and battery failure it shall still be possible to manually ventilate and deliver anaesthetic agent.
System ahould have easily accessible common gas outlet in the event of an emergency and for use of alternate breathing circuits.
Should have unlockable Oxygen flush to deliver oxygen flow of approximately 40l/min.
Should have built in safety features like O2 failure alarm, N2O cutoff, Low O2 pressure etc.,
Should have motion sensitive back lighting for vaporizer dial adjustment. Should also have mandatory
illumination of the writing table.
The frame should have integrated power outlets to supply a minimum of four external devices.
Should have locking of the front castors by a single central brake mechanism.
System should be designed to mounted on pendants.
Gas Flow
The unit shall have a mechanical hypoxic guard system to control the ratio of Oxygen and Nitrous oxide to
ensure a minimum of 25% of oxygen delivery at all times to avoid delivery of hypoxic mixture.
It shall be possible to deliver Air with only basal flow oxygen independent of the above mentioned hypoxic
control.
Gas flow shall be controlled mechanically to avoid errors during power failure and electronic malfunction.
Visual display of the gas flow shall be by physical means independent of electrical power.
Cascade or dual flow tubes should be available for all gases to allow suitable resolution and accurate control at
low total fresh gas flows.
Flow meters should have backlight and antiglare illumination.
The unit should have an independent measurement and display of fresh gas flow offering safety for low and
minimal flow anaesthesia.
A bag arm with height and positional adjustment shall be available as an option.
Vaporizers
The unit should accommodate two vaporizers for anesthetic agent delivery to allow easy selection of agent to
be used. A third vaporiser storage area shall be available as an option. Vaporiser should be selectatec type, tool free installation and vaporiser of our choice can be
mounted at will
with interlocking facility to allow operation of only one vaporiser at one time.
Vaporizers supplied with the unit shall be routine maintenance free for the life of the product.
Should provide Isoflurane and Sevoflurane key filled vaporisers.
Breathing System
All parts of the breathing system that are in contact with patient gas should be latex free and autoclavable.
Should not require tools when dismantled for cleaning and sterilization.
Should accept large and small volume absorber canisters.
The ventilator bellows shall be clearly visible and should ascend on expiration to provide a quick visual indicator
for system leaks.
Breathing system should have the option of C02 Absorber bypass control that will allow the absorber canisters
to be removed without introducing system leaks.
Should have bag / vent selecting valve integrated onto the absorber and should automatically turn on the
ventilator when positioned to vent mode.
Ventilator
Ventilator should be pneumatically driven, electronically controlled and should be ascending bellows

type.
Ventilator should automatically change drive gas should there be a gas depletion.
Ventilator shall have a large colour display with touch screen user interface.
Ventilator should have the following ventilation abilities, volume control, decelerating flow pressure control,
SIMV with pressure support and pressure support.
Ventilator should be capable of ventilating diverse range of patient groups from neonates to patients
With restrictive airways with tidal volume range between 20 ml to 1500 ml with single bellows system.
Assisted modes of breathing should be flow triggered.
Ventilator shall have an active proportional exhalation valve to prevent the potential of over delivery during
pressure modes of ventilation.
Ventilator should have a leak and compliance test that can be done independently of the full system check.
On switching on, the ventilator system should be able to and shall give the user a choice of doing a unit test or
bypassing in the case of an emergency.
Ventilator shall compensate for fresh gas flow and compliance of the entire circuit dynamically.
Measurement at the patient end of the circuit (sensor at the patient end) should be provided to compensate for
small leakages and compressible volume variability that occur during ventilation.
User should also have the option of setting a pre set compliance correction where similar circuits are used
constantly.
Should provide constant fresh gas flow into the breathing circuit during the inspiratory phase as mandatory.
Ventilator should have the ability to set and store a hospital default as well as individual user preferences for
easy selection of ventilation parameters and include screen layout, alarm preferences and ventilation

Group-G Trauma& Emergency

1. Technical Specification of ICU Ventilator

1) Advanced technology ventilator for use in ICU, suitable for ventilating all categories of
patients from pediatric to adults.

2) Microprocessor controlled system with individual selection of various ventilation parameters and PEEP.

3) System should have the facility for both Pressure trigging & Flow triggering.

4) It should have following modes of ventilation:
a) Volume control
b) Pressure control
c) Pressure regulated volume control with on demand flow (PRVC).
d) Pressure support with back up ventilation.
e) CPAP.
f) SIMV (Volume Control) + Pressure support.
g) SIMV (Pressure control) + Pressure support.
h) Should have facility for BiPAP with non-invasive ventilation with same breathing circuit.

5) The system should have the following parameters:

a) Tidal volume	20 ml to 2000 ml.
b) CMV frequency	5 to 100 breaths per minute.
c) SIMV frequency	1 to 40 breaths per minute.
d) Inspiratory time	10% to 80% of breath cycle time.
e) Pause time	5 to 30% of breath cycle time.
f) Pressure level	0-100 cm H2O.
g) PEEP	0-40 cm H2O.
h) Trigger	Flow trigger.
i) Inspiratory rise time	0-20% of breath cycle
j) I:E ratio	1:10-4:1

6) Should have the following audio-visual alarms:
a) Airway pressure
b) High continuous pressure
c) FiO2
d) Expired minute volume
e) Apnea
f) End expiratory pressure
g) Respiratory rate
h) Gas Failure
i) Battery

7) It should have separate user interface & ventilation unit for flexible positioning around the patient.

8) It should have External Compressor (US-FDA) from same manufacturer.

9) It should have in built battery backup for Approx 60 min or more.

10) Unit should be supplied with suitable heated humidifier (F &P) & two ultrasonic nebulizer (less than 3 microns particles) for effective uninterrupted nebulisation during mechanical ventilation.

11) Oxygen sensor should be covered during warranty period as well as during CMC period within the same quoted amount .

12) 10 inches or more of colour touch screen TFT user interface screen.
a) It should be possible to display at least 3 types of loops for each breath:
Volume- pressure
Flow- volume.
Flow- Pressure.
b) Screen should display following waveforms:
Flow time.
Pressure time.
Volume time.
c) Access through touch screen & main rotary dial.
d) Direct access to vital settings: PEEP, O2 concentration, respiratory rate & volume (or Pressure).
e) Can be rotated and tilted for maximum flexibility.
f) 24 hour trend display for up to 24 parameters.
g) Scroll/ Zoom functions

13) It should have the gas flow from 0 to 3 litres per second.

14) It should have 2 autoclavable interchangeable expiratory cassettes or valve for complete disinfection capability.

15) It should have facility for ventilation data transfer and network connection.

16) It should be user friendly and have study design.

17) It should be supplied with trolley made of non corrosive material and with air and O2 hose.

18) System should be US-FDA and CE (Conformité European) certified

19) System Configuration Accessories, spares and consumables
a) ventilator - 01
b) Adult and Pediatric autoclavable silicone breathing circuits – 02 each
c) Reusable Masks (Small, Medium, Large) with each machine. - 02 sets each
d) All Accessories for non invasive ventilation – 2 sets.
e) Disposable circuit – 10 Nos.
f) Medical Air Compressor. - 01
g) Oxygen sensor - 01
h) Humidifier -Servo controlled with digital monitoring of inspired gas temperature complete with heating wire – 02
i) Suitable online UPS with Approx 30 minutes backup.
j) If any quote Separately

20) **Warranty / after sale service: -**

1. Three year comprehensive onsite warranty of entire system (Spares and labour) including all accessories. This will be followed by 7 years CMC.
2. During warranty period as well as during Comprehensive Annual Maintenance Contract Period, firm will maintain the system with all spares, accessories. During warranty period, no additional amount is to be paid towards supply of any accessories. During Comprehensive Annual Maintenance Contract Period, it will be maintained within the quoted CAMC rate.

3. List of consumable with price should be quoted separately

4. Physical damages will not cover under warranty period as well as during CAMC period. To procure the accessories, in case of physical damages, bidders are required to quote unit price of each accessories

Group- G-Neurosurgery

(a) High End Operating Table For Neurosurgery (Electro Hydraulic Table with Sliding Top and Neuro attachment

1. Should be mobile modular operating table for Neurosurgery, electro hydraulically driven with back lit corded hand control with SFC padding of 80 mm
2. Electro hydraulic operation table should have adjustments controlled from outside intervention areas via corded hand control or optionally infra red remote control.
3. Should be capable of working on main power supply as well as battery back up. Battery back up should be for one week on single charge.
4. The table should be provided with an over ride control panel totally independent of the electronic system for adjustment of height up/down, Trendelenberg/ Reverse Trendelenberg, lateral tilts, Backrest up/ down, leg plates up and down during emergency situation.
5. It should be provided with two splash protected socket connections for simultaneous corded hand control device and foot control.
6. Column casing should be made up of Cr Nickel
7. The table should be provided with special Foam Core (SFC) mattress, evenly electrically discharging which evenly distributes patients weight and prevents development of pressure points during long duration of surgery.
8. The core part of the sandwich structure cushion should be covered by lying protection visco-elastic and two way stretch, covering for excellent pressure distribution and reduction in shearing force.
9. The mattress should be covered by electrically sealed joints so as to prevent ingress of liquid.
10. Radiolucent back plate without any barrier and integrated cassette channel.
11. The longitudinal shift should be of minimum 310 mm on head si8de.
12. The table top should be C –Arm compatible and X-Ray radiolucent from head end to coccyx, without having to move patients during surgery and be provided with guide rails under table tops for insertion of X-Ray cassettes.
13. The table should be provided with strong solid base with the least obstruction of the feet of operating surgeon as well as during use of Microscope and C-Arm. The table should be provided with four double swivevel cators for easy maneuverability of table.
14. The base column head should be made up of reinforced material which is resistant to impact, breakage and disinfectants
15. Base should be made of Cast iron and all other parts and accessories should be made up of stainless steel 304 grade except cushion, gas spring and hydraulic system, which should be made up of non rusting metals like Brass.
16. The maximum permissible patient weight should be 180 Kg.
17. The table top should be divided into five sections consisting of Head rest, Back extension plate, Back plate, Seat plate and Leg plate.

18. It should necessarily be possible to shorten the table top in stages by back extension to 1300 mm, and further 265 mm when the leg plate is lowered. For operations on infants and adolescents.
19. The patient orientation should be possible on both sides of the table tops, which can be locked in memory in order to prevent any mishap during surgery.
20. The following adjustment must be electro-hydraulically operated via corded hand control or infra red remote control-
    - Height up and down(without padding 480mm-1000 mm
    - Trendlenburg /Reverse Trendelenburg: 45/ 20 degree
    - Lateral tilt (left/Right) 30 degree. Back section (up and down): 90/30 degree.
    - Leg section up and down 90/90 degree.)
    - '0' position(cancellation of Trendleburg/ Reverse trendlenburg position/ Lateral tilts/Back sections/ Leg section
21. Base locking the table via retractable castors
22. The following adjustments are manually operated
    Adjustment and Removal of Head rest
    Removal of Leg plate and Back plate extension
23. The following accessories should be supplied with table
    Arm board with pad and Clamp- Two Nos.
    Anesthesia screen- One No.
    Radial setting Clamp –one No
    Body strap one No.
24. Neurosurgery Accessories
    1. Connecting Bracket One No.
    2. Basic Unit – one No.
    3. Clamp adapter – One No.
    4. May Field skull clamp one No.
    5. Pin for adults – 4 Nos.
    6. Pin for Children – 4 Nos.
    7. Horse shoe shaped Head Rest – Two pcs. and adjustable One No
    8. Connecting Fixture – One No.
    9. Doro Head Clamp one No.
    10. Guide Roller for skeletal traction
    11. 10. Special pad for spinal surgery – 10 Pcs. and adjustable
    12. Prone position- Gel Head rest
    13. Heel Protectors =Two Nos.
    14. Bolsters – Two Nos.
    15. Accessories for sitting position- Cross bars one No. and Radial setting clamps Two Nos.
    16. Machine should be CE approved.

Item (b)

Item No.- 2

Zero pressure suction machine

SALIENT FEATURES: -

- Smallest digital system with integrated suction. No compromise on patient mobility and safety with full electronic monitoring which helps in reduction of treatment time.
- System: Diaphragm pump 2 canister sizes 2 tubing's
- Container Size: 0.8l/0.3l
- Tubing (material, length, diameter): PVC, single, double L: 1.5m
- Noise Level: 42.5dBA / 1L flow / 2.5kPa (internal meas.)
- Max. Flow: 5l/m
- Duration of battery: Min 4hrs Max 10 hrs
- Power:20W
- Classification: Class IIA
- Weight:1kg
- Size: 95 x 170 x 235 mm
- Monitoring Functions: Digital
- Internal memory of pump: Upto 4 weeks
- Data transfer to PC: Data Cable
- Integrated Alarm System

- Storage and sterilizing containers

Group-H- Transplant Immunology Lab

(a) Blood Irradiator

1	Self shielded-type Isotope (Cobalt -60) based Irradiator Type B (U) approved that designed as per ANSI N.433.
2	To irradiate units of blood components to prevent Graft versus Host Disease risk.
3	Maximum Co-60 sources capacity : 30 TBq (810 Ci)
4	Does rate at maximum capacity : 11 Gy/Min (in air)
5	9.5 Gy/Min (in water) Dose rate uniformity : Radial +25% or better
6	And axial - 25% or better Irradation volume : Sample Chamber - 300 liters.
7	Rotating Chamber - 2000 liters
8	Size of sample chamber : Sample Chamber > 17 cm (dia) x .20 cm (h)
9	Shielding material: lead & stainless steel weight of the unit: ~2600 kg approx..
10	Size of the unit :~112cm (L) x 95cm (W) x 270cm (H)
11	Power requirement : 220/230v, 50Hz, 15 Amps
12	Single phase, A.C. Supply. Timer range : 6 sec onward
13	Control system: should be able to be operated by 3 modes of operations: i) Auto Mode having features of indicating on the panel Dose, dose rate, real time & date etc. along with preset time & automatic cobalt-60 decay corrections. ii) Electrical mode: controlled by using electrical buttons with Timer which can be preset iii) Manual Mode usable in case of power failure of whenever required.
14	Cobalt-60 Source should be housed inside the source container/lead flask of the unit. Sources should be in from of pencils and Type approved by Atomic Energy Regulatory Board (AERB), India, welded, decontaminated tested for leakage and certified.
15	dosimetry: The instrument should be verified dose rate profile at extreme points of irradiation chamber along with its central dose rate to asses the maximum & minimum doses given to any sample/ product.
16	Power requirements: The unit should be able to operate with single phase, AC supply of 220/230 V, 50Hz.

17	Installation: The installation will have to be completed by the provider and cost of installation should be included in the cost of the unit.
18	Provider must train user's personnel in the operation & maintenance aspects of the unit during the period of installation. Provider will undertake replacement of sources and taking back old surces. Number of Installations in Central Government Institution in India should be provided.

(b) Apheresis Machine

1	Continuous Flow Technology with single and double needle.
2	Following protocols should be available
a	Leucodepleted Platelets + Plasma
b	Therapeutic Plasma Exchange
c	Peripheral Blood stem cell collection
d	Red cell phereis, plasma pheresis
3	Inbuilt process Leucoreduction
4	Extra corporeal Volume less than 200ml
5	Air Detector
6	Centrifuge leak detector, automatically detected before priming
7	Inlet and return pressure monitor
8	Facility for fluid replacement during procedure with sensor
9	Citrate control and monitoring facility
10	Platelet should be collected with plasma, no manual mixing needed
11	Inbuilt quality control
12	Programmable haematocrit and Plasma Volume
13	Should have inbuilt battery backup and also provide on-line UPS of suitable capacity with 3 hours backup
14	System should recover from exact point whenever paused
15	500ml ACD should be provided with plasma exchange/platelet pharesis kits
16	ACD drip monitoring with minimum ACD use
17	Input voltage 230VAC ± 10%
18	Sinmple kit installation
19	Haemolysis monitoring for plasma line
20	Yield of 3.3x10" even at pre-count of 2.65 lakhs per micro liter
21	Inbuilt Automatic cuff and pressure monitoring
22	Onsite training for the departments concerned.
23	20 nos. of platelatepjeresis kits / plasma exchange kits shall be decided in consultation with the user institution before supply. The kits supplied should have at least 18 months shelf life. In case if the kits are not used and nearing expiry, the kits shall be replaced with in the new kits with sufficient shelf life.
24	Consumables
a	platelet kit
b	plasma Exchange
c	RBC Kit
d	Stem cell collection kit

(c) Flowcytometer

1	System should be a bench-top flow-cytometer with two lasers (blue, red)and should have the option for upgrades to higher configuration in future.
2	All lasers and their excitation-optics should preferably be fixed aligned and each laser to have its unique pinhole.
3	System should have capability of detecting at least 6 parameters (4 of more fluorescence outputs and forward and side scatter)
4	System should be able to acquire at least 15000 events per second.
5	System should have digital acquisition system and digital signal processor of at least 18-bit or better processor.
6	System should accept 3.5/5.0 ml tubes and 96-well plates for sample acquisition
7	System should be provided with software capable of baseline settings of system performance, thereby ensuring automated instrument set-up for consistent results.
8	System should have the capability for compensation in real-time and also post-acquisition
9	System should be supplied with the latest version of acquisition and analysis software with install discs and any software upgrades should be provided free of cost during the warranty and CMC period.
10	Should also be supplied with the latest compatible high-end data acquisition workstation from the source/original manufacturer with high-resolution flat panel monitor (21 inch or higher) and original licensed software for data acquisition and analysis. The operating System and all other accessory software should be licensed and supplied with original installation CD/DVD/USB. Should be supplied a high-end colour laser printer.
11	Should be supplied with a branded 5 KVA Online UP|S wit at-least 120 minutes backup for the data acquisition unit.
12	To provide 250 assay kits for stem cell enumeration free of cost.
13	Should be supplied with a start-up kit including Calibration beads, flow check beads 1000 Litres of Sheath fluid sample acquisition tubes (1000 tubes), extensive on-site training for system and software and also training at company training centre for two personnel
14	System should be quoted with five years complete cover warranty and additional five years of comprehensive AMC
15	Company must have a direct presence in India with strong after-sales technical and service support and must ensure that all faults are rectified within 72 hrs.

(d) Ultra-cold- Freezer

1	Temperature range : -50 to -86˚C
2	Capacity : Non- CFC Refrigerant (600 Ltr. Capacity)
3	Compressor: Two 1 Hpcascade with automatic voltage compensator to monitor online voltage fluctuation and dynamically adjust the compressor voltage
4	Microprocessor based control/monitoring system with data logger with 72 hrs.
5	Battery back-up - Good quality gasket for perfect sealing for sample protection, to prevent temperature fluctuation and moisture accumulation.
6	Door lock and key
7	Low noise, power saving operation
8	Complete inventory to accommodate 2.0 ml vials and stem cell collection products
9	5 years warranty
10	230V 50 Hz

(e). **Vertical Laminar Safety Cabinet (Class II Type B) –No 4**

Technical Specification

1. Direction of Flow: Vertical
2. Working Size: W 1800 X D 600 X H 600 mm &
3. Overall Size: W 1900 X D 750 X H 2050 mm
4. System should have one HEPA filter with 99.999% efficiency for Particles>0.3µm
5. HEPA filter should have H14 according EN 1822
6. Exhaust HEPA Filter for 100% exhaust of air from workspace
7. Exhaust module of suitable capacity to discharge HEPA filtered air into the atmosphere
8. Exhaust module shall be connected to the Biosafety Cabinet through PVC pipe duct
9. System should have a prefilter for> 0.5 µm with 85% efficiency
10. Pre filter should have G4 Class according to EN779
11. System should have illumination level> 800 lux
12. Noise level should be <55 dBA
13. Working chamber should be made from AISI 304 stainless steel
14. External and internal structure should be made from 2.00 mm electrostatically painted steel.
15. System should have hour counter up to 100.00 Hours
16. System should have 0.4 m/sec. Flow velocity flow should be vertical
17. System should have 2100 meter cube / hour capacity, high quantity blower with double suction.
18. System should have 2 pieces covered and fuse protected
19. Power consumption not more than 440 Watt.
20. Comprehensive warranty for 3 years and provision of AMC for next 5 years
21. Spare parts required:
    a) Mini pleat filter – 1 No.
    b) Spare Mini pleater filter- 1 No.
    c) Magnehelic gauge for pressure measurements- 1 No.
    d) On- site calibration (HEPA filter Integrity Test (PAO/DOP Test, Air Velocity Test – inflow & down flow, Particle count test) immediately after installation.

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