BIDDING DOCUMENT

TENDER NOTICE No.: 05/ 2015 - 2016 / Biomedical Equipt./ IGIMS / Store

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

TENDER NOTICE No 05 /2015 – 2016/ Biomedical Equ / IGIMS / Store 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)	24/7/2015 up to 11.00 A.M. by registered/speed post/ Courier only
Date of opening of technical bid	24/7/2015 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)

Sl. No. OF TENDER: _____

FILE NO. : Tender No.: _____

Tender form issued in favour of:

_____

_____

Dear Sir,

1. I/We hereby submit our tender for the
   _____
   _____

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

(EMD AND COST OF BIDDING DOCUMENTS MUST BE 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 (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)		
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, consumables etc., (Please mention the name of the item / items with price, which are not supplied by the bidder free of cost with frequency of replacement)		
19.	Certificate, to the effect that bidder has quoted its rate for Comprehensive Annual Maintenance Contract inclusive of labour, spares, consumables, accessories etc. on per year basis for a further period of seven years after expiry of warranty period of three years in the **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.	
03	(a) The manufacturer should have completed at least 05(Five) nos. installations of the quoted items in Govt. /Pvt. Institutions /Hospitals in India. The installations mentioned by the manufacturer in their offer must be functional and performance certificate for the same issued by the user concerned also be attached with the offer. (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.	
04	The Bidder should be public undertaking /Autonomous Body /Public Ltd./Pvt. Ltd. Company or proprietary firm /Partnership Firm and should be in medical equipment business since last five years in India. The Bidders having manufacturing facility in their name in India for the majority of the items offered by them shall be given preference.	
05	The Bidder (manufacturer or their authorized agent) should have had average annual financial turnover of Rs. 50 Lakh during the last three years ending s 31st March 2015.	
06	Bidders who have the capability to attend repairs of these equipment within the time mentioned in this bidding document and who are willing to provide stand by equipment or replace the faulty equipment if the repair/down time extends beyond 72 hours from the time of reporting of the fault within the next 48 hours (total down time should not exceed 5 days in one instance). The bidders who have the capability to ensure the uptime mentioned in this document (Documentary proof shall be submitted on the after sales facilities and expertise of the bidder.)	
07	Bidders are not offering the equipment of a firm /company that has been blacklisted by Indira Gandhi Institute of Medical Sciences – Patna or blacklisted/debarred by any other State / Central Government's organization.	

Note:

- Notwithstanding anything stated above, the Institute reserves the right to assess the Bidder's capability and capacity to perform the contract satisfactorily before deciding on award of contract, should circumstances warrant such an assessment in the overall interest of the purchaser.
- The Institute reserves the right to ask for a free demonstration of the quoted equipment at a pre determined place acceptable to the purchaser of technical acceptability as per the tender specification, before the opening of the price tender.

INSTRUCTION TO BIDDER

GENERAL INSTRUCTIONS 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

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

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

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

4. 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 alongwith the completed documents in the form of demand draft in favour of Director , IGIMS, Patna, payable at patna towards cost of the " Tender documents" Bidder is required to attach seprate D D for the same in a seprate envelop super scribed with " cost of bidding document" if the cost of tender document is not submitted by the bidder, his offer shall be outright rejected .
6. Last date for purchase of bidding document is ……..

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

Earnest Money2% 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 favoring Director, I.G.I.M.S. – Patna (payable at Patna). No interest is payable on EMD/ Bid security.

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

c. EMD of the unsuccessful bidders will be returned to them at the earliest after expiry of final bid validity and latest on or before the 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, Fixed deposit etc will not be accepted as EMD.

g. Public Sector Units within the State or State micro, small and medium enterprises registered with Govt. are exempted from remittance of EMD subject to submission of valid documents.

h. The EMD shall be in one of the following forms:

i. A demand draft in favour of Director, I.G.I.M.S. – Patna (payable at Patna);

OR

ii A Bank Guarantee issued by a nationalized/ scheduled bank locted in India, in the form prisecrived 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 deptt. or Institution** after a minimum period of six months of installation.

c. Prerequisite (if any) for installation of the Machine if any to be provided by the Institute.

d. If the manufacturing company and/or its Indian agent (for Foreign manufactured) have authorized some agency for participation in this tender for a limited period than in that case they (Manufacturer / Indian agent) shall have to submit an undertaking duly notarized by Public notary that if their tender is selected they shall be solely responsible for compliance of all the terms and conditions mentioned in the bilateral agreement for purchase and subsequent supply order even if their authorized agent is changed. Any tender offer without such certificate duly certified by public notary shall be rejected in technical scrutiny itself.

e. Bidder must submit a compliance checklist along with the technical bid itself.

f. (Any tender offer without submission of above mentioned document (i.e. a to e) shall be rejected during technical scrutiny**.)**

g. If any new System/ Latest model machine is a launched in the market and seller has not installed such quoted models they should submit an undertaking that he has not installed such models previously (Notarized by Public Notary). . They may submit supply order / performance certificate of previous model, which was recently installed by them.

12. Installation & site plan:-

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

a. Total power consumption along with break up of main System and Accessories.
b. Whether the System needs uninterrupted power supply where ever applicable.
c. Maximum tolerated transfer time in case of interruption of power supply.
d. Whether the System needs any humidity control device.
e. Whether the System needs any separate power line/isolation Transformer.
f. Does the System need the electrical shielding?
g. Does it require special civil works for installation?
h. Whether Air conditioner is an essential requirement for the system.
i. Does it require any special civil works for Installation?

13. After Sales Service Conditions:

a. The Institute is in the pursuit of ensuring excellent after sales service for every user in respect of the equipments supplied under this contract. The after sales services terms and conditions will be strictly enforced and those Bidders who are willing to support the Institute in its endeavor to provide trouble free operation/performance of the equipments for the prescribed period need only participate in the tender.

b. The after sales service shall be performed during the warranty period and also during the Comprehensive Maintenance Period (CMC)/ Annual Maintenance Contract, if awarded. The detailed terms and conditions for after sales service are mentioned hereunder.

c. Guarantee/Warranty Terms:

i. The successful Bidder has to warrant that the Goods supplied under this Contract are new, unused, of the most recent or current models and incorporate all recent improvements in design and materials unless provided otherwise in the Contract.

ii. The successful Bidder further have to warrant that the Goods supplied under this Contract shall have no defect arising from design, materials or workmanship (except when the design and/or material is required by the Tender Inviting Authority's specifications) or from any act or omission of the successful Bidder, that may develop under normal use of the supplied goods.

iii. All the equipments including the accessories supplied as per the technical specification as mentioned in the bidding document should carry comprehensive warranty (including all spares, accessories and consumables) for a period mentioned in this document in the first instance. During this period, the successful Bidder shall replace all defective parts / accessories / consumables and attend to all repairs/break downs and undertake stipulated number of preventive maintenance visits to every user installation site. The cost of spare parts for all replacements has to be borne by the successful Bidder

during the period of comprehensive warranty. The items which are not covered under warranty should be clearly mentioned along with rate of the items . If any spares / accessories / consumables etc. are not replaced by the bidder during warranty period, bidder should mention it clearly with name of the items with frequency of replacement and its rate

iv. On expiration of the comprehensive warranty period, the successful Bidder shall be willing to provide after sales support for an additional period prescribed in this document.

v. The prospective Bidder, who are not manufacturers, shall submit an undertaking from the Original Equipment Manufacturers (OEM) that they are willing to provide spare parts for the period of warranty as mentioned and also during the additional CMC/AMC period, if awarded. The OEM shall also assure continuity of service to their product, in the event of change in dealership or the Bidders – their existing dealers - couldn't provide service during the warranty / CAMC period. The undertaking from OEM is an essential document forming part of the Technical Bid, without which the tenders will be rejected summarily in the first round itself.

vi. After sales service centre in Patna (Bihar) preferably or at least in East India should be available as part of the pre-qualification and the Bidder shall provide proof of their capability to undertake such maintenance/repair within the stipulated time.

vii. The successful Bidder shall provide preventive maintenance as per the frequency mentioned in this document during the warranty period. The Bidder shall attend any number of break down/repair calls as and when informed by the institute authority.

viii. Upon receipt of such notice for repair/breakdown from the institute, the successful Bidder shall, within the period as specified in this document, and with all reasonable speed, repair or replace the defective goods or parts thereof, without cost to the Tender Inviting Authority.

ix. If the successful Bidder, having been notified, fails to rectify the defect(s) within the period specified mentioned in this document, the Tender Inviting Authority may proceed to take such remedial action as may be deemed necessary, at the successful Bidder's risk and cost and without prejudice to any other rights which the Tender Inviting Authority may have against the successful Bidder under the contract.

x. Failure to attend the repairs in time or failure to attend the stipulated preventive maintenance visit or failure to replace the defective equipments or to provide stand by equipment if the fault/down time exceeds the stipulated period or to ensure the stipulated up-time in an year shall lead to forfeiture of the performance security and/or may lead to blacklisting/debarring of the defaulting Bidder.

xi. The equipment which requires quality assurance test shall be done at free of cost immediately after installation, during the comprehensive warranty period, during the CMC/AMC period, by the demand of User and also when major spares are replaced.

xii. Any mandatory approval required for installation shall be obtained by the successful Bidder in liaison with the respective authorities.

xiii. The Bidder shall submit the parameters which require calibration and the frequency of calibration required.

xiv. The Bidder shall undertake on-site calibration of the equipment every year as part of the after sales service during the period of comprehensive warranty, CMC/AMC or on demand from the user.

xv. The Bidders shall also have to submit whether periodic replacements of consumable items are required for proper functioning of their quoted machine/Equipment? If yes they should submit the list of such consumables along with price list and frequency of replacement per year, if the same is not replaced free of cost during warranty / guarantee period.

xvi. An undertaking of the principal regarding continuity of after sales and services (CAMC) @ the agreement rate even in case of changes of Indian agent during the life span of the equipment, must be enclosed in the technical bid. Further, it will be the responsibility of the manufacturer Indian agent to get counter signature on the agreement to be executed with them by the principal.

Xvii;- The offered warranty includes:

- Visits to the user institutions at frequencies prescribed as part of preventive maintenance.
- Testing & calibration as per technical/service/operation manual of the manufacturer or as per the period specified or as per the demand of the user.
- Quality Assurance tests (if applicable).
- The cost of labour for all repairs/ and all spares required for replacement during repairs all kinds of accessories, Probes, all types of sensors and transducers, Electrodes, Detectors, battery, battery for UPS, other vaccumatic parts etc wherever applicable and also the accessories and other devices supplied along with the equipments like stabilizer, UPS, AC, Computer, Compressor, Monitor, etc, which forms part of the equipment system, without which it cannot perform satisfactorily.
- The exclusion of warranty of any vital equipment parts will be compared with offers of other Bidders during evaluation of the bids and this may be taken into consideration in deciding the successful Bidder on the basis of expert advice.
- The Bidder shall provide up-time warranty of complete equipment as mentioned in this document, the uptime being calculated on 24 (hrs) X 7 (days) basis failing Warranty period will be extended for every additional day of down time equal to one week.
- All software updates, if any required, should be provided free of cost during Warranty period.

d. <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 like UPS, Computer System, Printer, De-ionizer, Dehumidifier etc to be supplied by the bidder along with basic unit.

b. During warranty period of three years, bidder shall provide at least **four maintenance visits per year** at regular interval for usual maintenance and supervision. If bidder fails to provide these maintenance visits at regular interval, a proportionate deduction in the form of penalty on pro-rata basis will be recovered from the bidder from the Bank Guarantee amount. In case the Bank Guarantee is not adequate, Institute shall have right to recover the losses / penalty from other sources as well.

c. Bidder shall also attend all breakdown calls within 48 hours of the receipt of the information from institute through fax/e-mail/mobile/sms etc.

d. During warranty period, **bidder** shall maintain and keep **95% uptime** per year of the "**Complete System**" as per calculation given below:-.

1 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 like UPS, Stabilizer, Computer System, Printer, De-ionizer, Dehumidifier etc 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 whohave submitted and quoted the price, name of the Bankers abroad; intimation about country of origin and 10 copies of Performa invoice of the

ordered item. Indian Agency commission will be paid in Indian currency only to Indian agent, if any. No extra charges will be paid for installation/demonstration and training to personnel.

08. **Validity of Price:-**

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

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

10. **Packing & Marking:-**

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

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

12. Insurance: -

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

13. Installation & site plan:

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

a. Total power consumption along with break up of main System and Accessories.
b. Whether the System needs uninterrupted power supply.
c. Maximum tolerated transfer time in case of interruption of power supply.
d. Whether the System needs any humidity control device.
e. Whether the System needs any separate power line/isolation Transformer.
f. Does the System need the electrical shielding?
g. Whether Air Conditioner is required for the System.
h. Does it require special civil works for installation?

14. The bidder should also quote for supply of "Un-Interrupted Power Supply" (UPS) with a battery back up of at least 30 minutes, **"**Constant Voltage Transformer (CVT)" of reputed manufacturer of required capacity along with Spike Suppressor or "Servo Voltage Stabilizer" as per requirement of the System. Bidder may quote the prices for all the above items (UPS/CVT/SERVO VOLTAGE

STABILIZER) and the decision will be taken during technical evaluation of the item whether UPS is suitable or CVT / Servo Voltage Stabilizer will serve the purpose.

15. Responsibility:-

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

16. The bidder is required to provide list of persons (along with their permanent and correspondence address) owing more than 1% share ownership in the company/firm (both principle and Indian Agent).

17. The bidder is required to submit compliance sheet, which should reflect details of clause-by-clause compliance of technical specifications as well as general terms & conditions failing which their offer shall be rejected.

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

19. Penalties for non-performance

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

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

20. **Termination of Contract**

a. Termination for default:- The Institute, without prejudice to any other contractual rights and remedies available to it (the Institute), may, by written notice of default sent to the successful bidder, terminate the contract in whole or in part, if the successful Bidder fails to deliver any or all of the goods or fails to perform any other contractual obligation(s) within the time period specified in the contract, or within any extension thereof granted by the Institute.

b. In the event of the Institute terminates the contract in whole or in part, the Institute may procure goods and/or services similar to those cancelled, with such terms and conditions and in such manner as it deems fit and the successful bidder shall be liable to the Institute for the extra expenditure, if any, incurred by the Institute for arranging such procurement.

c. Unless otherwise instructed by the Institute, the successful bidder shall continue to perform the contract to the extent not terminated.

d. Termination for insolvency: If the successful bidder becomes bankrupt or otherwise insolvent, the Institute reserves the right to terminate the contract at any time, by serving written notice to the successful bidder without any compensation, whatsoever, to the successful Bidder, subject to further condition that such termination will

not prejudice or affect the rights and remedies which have accrued and / or will accrue thereafter to the Institute.

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

21. **Fall Clause**:

The prices charged for the equipment supplies under the contract by successful bidder shall in no event exceed the lowest price at which the successful bidder sells the equipments of identical description to any other persons during the period of contract. If any time, during the contract, the bidder reduces the sales price chargeable under the contract, he shall forth with notify such reduction to the Institute and the price payable under the contract of the equipments supplied after the date of coming into force of such reduction or sale shall stand correspondingly reduced.

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

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

b. All disputes arising out of this tender will be subject to the jurisdiction of courts of law in Patna (Bihar, India).

Director,
IGIMS - Patna
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CHAPTER:

Schedule of the Requirement.

SCHEDULE OF THE REQUIREMENT

Sl No	Name of the Department	Name of the equipment
Group	Name of Department	Name of Machine Equipments
A		**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(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)					
schedule d	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 to be supplied by the bidder along with basic unit.

b) **Preventive maintenance visit:** Four Maintenance visits at regular interval for usual maintenance & supervision failing which 25% of the contract amount per visit would be deducted as penalty.

c) **Break down maintenance visit:** As & when required

d) **Response Time:** within 48 Hours.

e) Uptime Guarantee: 95% of 365 days

f) The above-mentioned charges should includes labour charges for maintenance and breakdown visits per year, spares, accessories and all type of consumables required for the maintenance of the supplied items. If any spares / consumables /accessories etc. are not covered under above-mentioned charges; it should be clearly mentioned with frequency of replacement and with rate. The validity of rate of such items should also be mentioned clearly. What will be the rate of escalation on the quoted rate after expiry of the validity of rate of such item must be mentioned.

g) Payment of Comprehensive Annual Maintenance Contract would be made on half yearly basis after completion of work and satisfactory working report. In no case, advance payment is to be considered.

Seal and Signature of the bidder

ANNEXURE – III

MANUFACTURER'S AUTHORISATION FORM

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

No.

Dated:

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

Dear Sir,

Tender No :
Equipment Name :

1. We …… (name of the OEM) are the original manufacturers of the above equipment having registered office at …….. (full address with telephone number/fax number & email ID and website), having factories at _____ and _____ , do hereby authorize M/s._____ (Name and address of bidder) to submit tenders, and subsequently negotiate and sign the contract with you against the above tender no..

2. No company or firm or individual other than M/s._____ are authorized to bid, negotiate and conclude the contract in regard to this business against this specific tender.

3. We also hereby undertake to provide full guarantee/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 scopet;

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

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

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

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

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

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

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

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

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

ANNEXURE - V

POWER OF ATTORNEY

(On a Stamp Paper of relevant value)

I/ We……(name and address of the registered office) do herebyconstitute,appointandauthoriseSri/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)

(1)AUTO REFREACTOMETER WITH KERATOMETER(Qty-02)

TECHNICAL SPECIFICATION OF THE AUTO REFREACTOMETER WITH KERATOMETER

Objective Refractometer Mode

Sphere Range - 25D to + 22 D
(0.12D / 0.25D steps)

Cylinder Range 0 to +10 D
(0.12D / 0.25D steps)

Axis Range 0˚ to 180˚ (in 1˚ to 5˚ steps)

Minimum Measurable Pupil Diameter
ø 2.0 mm

Corneal Curvature Mode

Corneal Curvature Radius 5.00 to 10.00 mm
(0.01 mm step)

Corneal Refraction 67.50 D to 33.75 D
(0.12 / 0.25 D steps)

Refraction Index 1.3375

Corneal Astigmatism 0D to +10 D
(0.12D / 0.25 D steps)

Corneal Astigmatism Axial Angle 0˚ to 180˚
(in 1˚ to steps)

Others

PD Measurement
20 mm to 85 mm (0.5 mm step)

Input / Output
USB (input) / RS 232 C (output) / LAN (output)

Other Specifications

Dimensions
317 mm (W) X 521) X 447 - 477 mm (H)

Weight 15 Kg

Power Supply 100 - 240 V AC, 50 - 60 Hz, 30 - 70 VA

LCD Touchscreen Panel

Connectable to LAN

One Touch Lock

Easy - to - Load Printer

OPTIONAL

MOTORIZED INSTRUMENT TABLE

(2) SLIT LAMP WITH OBSERVERSCOPE(Qty-02)

SLIT LAMP WITH OBSERVERSCOPE
MICROSCOPE UNIT TYPE GALILEO TYPE MAGNIFICATION DRUM, 5 STEP MAGNIFICATION MAGNIFICATION STEPS 6 / 10 / 16 / 25 / 40 OVERALL MAGNIFICATION (ACTUAL VISION FIELD)6.37 (ø 35.1 mm)9.94 (ø 22.5 mm 15.87 (ø 14.1 mm)25.37 (ø 8.8 mm)39.62 (ø 5.6 mm) EYEPIECE LENSMAGNIFICATION12.5 X DIPOTER ADJUSTMENT RANGE -5D TO +5D BINOCULAR TUBES PD ADJUSTMENT: 55 TO 78 mm ILLUMINATION UNIT ILLUMINATION FIELD SLIT WIDTH 0 TO 14 mm CAN BE ALTERED GRADUALLY (14 mm = CIRCLE) SLIT LENGTH 14 mm TO 1 mm, CAN BE ALTERED GRADUALLY (14 mm = CIRCLE) APERTURE DIAMETER ø 14, 10, 5, 2, 1, 0.2 mm SLIT DIRECTION VERTICAL TO HORIZONTAL, CAN BE ALTERED GRADUALLY INCLINATION: 5˚/ 10˚/ 15˚ / 20˚ SIDE SWING FILTER BLUE FILTER, RED - FREE FILTER, AMBER FILTER UV CUT FILTER (NORMAL USE), ILLUMINATION LAMP HALOGEN TYPE/LED BASE UNIT FORWARD BACKWARD MOVEMENT 90 mm RIGHT LEFT MOVEMENT 100 mm VERTICAL MOVEMENT 30 mm AMOUNT OF MOVEMENT IN ALL DIRECTION 12 mm CHINREST UNIT AMOUNT OF VERTICAL MOVEMENT OF CHINREST 80 mm FIXATION TARGET ** FIXATION TARGET WITH DIOPTOR ADJUSTMENT LUMINOUS FIXATION TARGET FIXATION LAMP LED (RED) DIMENSIONS With motorized table POWER SUPPLY 100 - 240 V AC, 50 - 60 Hz, 110 VA OBSERVATION TUBE

(3) APPLANATION TONOMETER FDA APPROVED

APPLANATION TONOMETER FDA APPROVED
1. Should be Applanation type. 2. Should be based on Goldmann Tonometry principle. 3. Should have a measuring range from 0 to 78 mmHg in steps of 2 mmHg. 4. Should have an accuracy of ±0.5mmHg 5. Should be supplied with calibration Bar, Prism and tonome ter mount base to fix with optics. 6. Should be compatible with all models of slit lamps. 7.Should supply 1 no spare prism. 8.Controls should be visible and clearly defined. 9.Labels and markings should be clear and visible.

(4) INSTRUMENT FOR ORTHOPTIC CLINIC

.**INSTRUMENT FOR ORTHOPTIC CLINIC**
. 1. Hess chart 2. Less screen 3. Euthoscope 4. Prism set(Bar/loose) 5. Maddox wing 6. Maddox rod 7. Titmus fly les 8. Allen preschool vision test card 9. Red/Green graph 10. RAF Near Point Rule

11. Diplopia Goggles

12. Wirt's / Titmus stereo test

13. Neutral density filter

14. Bagolini's striated lenses

15. Hallberg's clip-on lens holder

16. Translucent occluder of Spielmann

17. Hertels Exopthalmometer

18. Diploscope

19. Occluders

*20. Stycar Rolling Balls(*3.5 mm to 6 cm size)

21.Catford drum

(5) FIELD ANALYSER (Qty-01)

HUMPHREY FIELD ANALYSER

STIMULUS:

GOLD MAN STIMULUS SIZE

WHITE ON WHITE

BLUE ON WHITE

BLUE ON YELLOW

FIXATION CONTROL;

VIDEO EYE MONITORING

HEIJL-KRAKAU FIXATION METHOD

GAZE TRAKING

HEAD TRAKING

LENS TRAKING

REMOTE VIDEO EYEMONITOR AREA OF FIELD TESTED:

90 DEGREE

TEST STRATEGIES:

SITA 10-2,24-2,30-2,MACULA

FULL THRESHOLD

FAST PAC

SCREENING: C-40,C-64,C-76

ANALYSIS SOFT WARE:

SINGLE FIELD ANALYSIS

MULTIPLE FIELD ANALYSIS

FOR BLUE ON YELLOW

GLAUCOMA PROGRESSION ANALYSIS SOFTWAR

PRINTER: FULL PAGE COLOR INK JET

DATA STORAGE OF ADEQUATE CAPACITY ON HD

FORUM COMPATIBLE

TOUCH SCREEN

KEY BOARD

MOTORIZED CHINREST

(6) A-SCAN WITH PACHYMETER(Qty-01)

A-SCAN WITH PACHYMETER

A. TRANSDUCER PROBE
FREQUENCY:10MHz
FIXATION:INTERNAL LED
BAND WIDTHL >6MHz AT -6db
B. MEASURMENT MODE
AUTOMATIC
MANUAL/CALIBATATION
IMMERSION MODE
C.SOFTWARE MEMOTY: 10/EYE
D. USER MEMORY :
SURGEON 6 PROFILE
IOL STYLE 10/SURGEON
E. FORMULA FOR IOL CALULATION :
SRK-T/11
HOLLADAY
BINKHROST
HOFFER
MODE FOR POST LASIK/RK PATIENT
F.STANDARD ACCESSORIES:
SOLID TIP TRANSDUCET WITH
FIXATION LIGHT / TEST EYE

G. PACHYMETER

(8)HAND HELD AUTOKERATOMETER

HAND HELD AUTOKERATOMETER
LCD should shows centering and focusing indicators and allows easy operation. AI mode The AI mode automatically detects the most appropriate value and completes measurement. 90° correction The 90° correction function facilitates measurement of a patient in lying position by correcting the astigmatic axis by 90°. Auto shot Automatically starts measurement when it is in the right position according to centering and focusing indicators. Carrying case with portable stand (optional accessory)

(9)PERKINS HAND HELD TONOMETER(Qty.01)

PERKINS HAND HELD TONOMETER
Hand held applination tonometers. Based on Goldmann principles and utilising the original Goldmann disposable prisms, The illumination system provides superior fluorescein, greatly enhancing the familiar "semi-circles" which are vital to attaining accurate results. Accessories: lightweight, compact carrying case, Goldmann Prism and battery operated handle taking four AA size batteries. Rechargeable handle and recharging unit and Tonosafe disposable prisms.

(10) VIDEO INDIRECT OPHTHALMOSCOPE-Qty-01)

VIDEO INDIRECT OPHTHALMOSCOPE
.**Fully integrated camera system.** • **Compact.** Lightweight design • **Water-proof camera head.** Can be placed in disinfectant solution (but cannot be autoclaved). • **100% dustproof system.** No maintenance required. • **Optics specially-developed.** Maximum brightness. • **High-resolution A-Cam camera.** CCD CAM • **Image sensor.** 1/2" CCD, color. • **Focus adjustable for any working distance.** From 250 to 800mm. • **Automatic white balance.** • **Automatic light metering at the center of the image.** Reduction in reflections. • **Automatic light boost.** Boost function for examinations with low lighting. • **Brilliant image with an S-VHS monitor.** • **FBAS (composite) and Y/C (SVHS) outputs.** Extensive compatibility and high image quality. • **Optional PAL / NTSC format.** • **Connecting cable.** 3m. • **Processor should connect to various output devices, such as: VCR's, digital printers, PC's with image capture software**

(11) DYNAMIC PASCAL TONOMETER(Qty-01)

.**DYNAMIC PASCAL TONOMETER**
1. DCT-Sensor tip: no application but relaxation 2.Constant apposition force of only 1g 3. LCD display shows: IOP (True IOP), OPA (ocular pulse amplitude) and Q (measurement quality index) 4.Easy handling with one knob 5. Wireless printer 6.Sterile sensorcaps 7. Slit lamp adapter kit 8. Swingarm 9. DataWizard software 10. Rechargeable battery kit

Grop-B-Pathology

1:-SLIDE CABINET CAPACITIY 1,00,000 SLIDES: VERTICAL MANNER

- For keeping 75X75mm slide in vertical position one after other of steel attractive spray finish
- Cabinet having 240-480X75mm drawer and teasing slides in vertical position
- Drawer should move smoothly in a slot and completely removal for easy lifting
- Cabinet should accommodate maximum number of slides for optimum space utilization with lock and key.

1. SLIDE CABINET CAPACITIES 50,000 SLIDES –vertical manner

1. Slide Cabinet for safe and easy handling of 75x25mm slides and should not to disturb other compartments while taking out or putting in the slide
2. Should make of MS sheet, power coated paint outer finish with smoothly working doors fitted with handle.
3. Should have lock and key
4. Should be fitted with slotted aluminum carrier in four rows, each holding 50 slides i.e. each tray should hold 200 slides in horizontal position and is fitted with index and holder. Slide holding slotted rows are numbered 1 to 50 to identify the slides.

2. B LOCK CABINET CAPACITIES 40,000 BLOCKS

- Block cabinet capacity 40000 block made of Mild Steel duly powder coated.
- The internal drawers should made of MS duly powder coated channel drawer having 4 to 8 compartments with capacity of approx 125 blocks with embedding ring .
- Index card holder and handle provided on each drawer.
- Handle provided on front panel.
- With door & provided with lock & key
- Warranty-one year

4. Specification for Semi Motorized Microtome:

- The Microtome should be manual cutting with disposable blade holder with disposable blades
- (Both High & Low Profile can be fitted) with following specifications:
- **The Section thickness range FINE 0.5 - 100µm with following increments:**
- 0.5µm increment from 0.5 - 2µm
- 1µm increment from 2 - 10µm
- 2µm increment from 10 - 20µm
- 5µm increment from 20 - 30µm
- 10µm increment from 30 – 40µm
- 20µm increment from 40 – 100µm
- **Section thickness range TRIM: 5 up to 500 µm**
- From 5 … 10 µm in 5 µm- increments
- From 10 …100 µm in 10 µm- increments
- From 100…200 µm in 20 µm- increments
- From 200…500 µm in 50 µm- increments
- Specimen retraction during return travel should be 40µm
- Horizontal feed range should be 28 mm
- Vertical specimen stroke 72 mm
- Section counter 5-digit, with reset
- Section thickness sum 5-digit, with reset
- Remaining travel to front end position 5-digit
- Specimen size: when using a standard specimen clamp 55 x 50 mm
- Specimen orientation: x - and y – axes with 8°
- Availability of ROCK Mode
- Rotation: up to 360°
- Cutting drive: manual by means of hand-wheel
- Coarse feed: motorized, graduated and continuous
- Speed for coarse feed: 400, 800 or 1200µm/s
- Storage Temperature range: -20°C up to +50°C
- Operating conditions: +5°C up to +40°C for indoor use only.

- With suitable Voltage Stabiliser (ISI certified)

5. CENTRIFUGE :

• Bench tope high speed lab centrifuge with digital speedometer, timer in the range of 0-59 minutes and speed regulator maximum speed 5000 RPM.
• With 12x15ml angle rotor head.
• Complete with dust cover.
• Cord and plug to work on 220 volts 50Hz AC.

6. SPECIFICATIONS for CRYOSTAT

1. Motorized coarse feed with Manual cutting
2. Intuitive touch screen user interface.
3. Reliable stepper motor technology delivers reproducible section thickness.
4. Chamber temperature control down to -35 degrees Celsius to accommodate a wide range of specimens.
5. Automatic specimen retraction on return stroke protects specimen and reduces carry over artefacts.
6. 27 Cooled specimen positions including four fast freezing positions which cool down to -55 degrees C.
7. Body contoured armrests improve posture and comfort during periods of prolonged use.
8. Additional knee space to support comfortable seated operation.
9. Light-touch hand wheel requires minimal force to operate increasing comfort.
10. Mechanical hand wheel lock completely immobilizes the specimen head for operator safety.
11. Optional on-demand high intensity UV disinfection protects against surface contamination and exposure to biological pathogens.
12. Stainless-steel chamber and smooth surfaces allow for efficient cleaning of the chamber.
13. Minimal service downtime due to easy access modular components.
14. Built in alert system focuses user on any service needs
15. Section Thickness Range : 1 – 500 µm
16. Trimming Thickness Range : 5- 500 µm
17. Specimen retraction : 20 µm
18. Vertical Specimen stroke length : 64 mm or above
19. Horizontal Specimen movement : 28 mm
20. Specimen orientation: X-Y axis 8 deg and Z axis 360 deg
21. Chamber temperature should be – 35 deg C or less
22. Cryobar with Peltier cooling temperature should be – 55 deg C or less
23. Instrument should supply with high and low profile disposable blade holder, disposable blade, Specimen chucks, Brushes, Oil etc.

7: Microwave

1. Table top design
2. Temperature control: +/- 1ºC
3. Dimension: 21.5" x 24.5" x 19" (54.6 x 62.2x 48.2cm)
4. Weight: <40 kg
5. Power requirement :120v system
6. Warranty: 1year

17. Autoclave

1. **35-50 liter capacity**
2. **Capacity to function at standard recommended temperature (121 degree centigrade), pressure (15 lb/square inch & holding time (20 minutes) etc.**
3. **High tech radial lick locking mechanism for ultimate care of operation and safety**
4. **Double safety valve protection mechanism ensuring a long life of the equipment**
5. **Water indication gauge hydraulic testing for more than double the working pressure**
6. **High accuracy, efficiency and reliability**

8:Specification for Automated Tissue Processor

- Compact, bench-top carousel tissue processor
- Designed to process biological specimens from chemical fixation to paraffin infiltration.
- Unique design uses programmable gentle centrifugal force to augment normal vertical agitation process associated with carousel processors.
  - Immediate and delayed-start processing modes
  - Spin speed programmable from 0, 60 or 70rpm
  - Programmable immersion time in each station (from 1 minute to 99 hours and 59 minutes)
  - Basket capacity of 120 cassettes with optional second cassette basket and third paraffin bath: 220 cassettes
  - In-Built Battery back-up system in case of power failure
  - Reagent vessel tops and charcoal-enhanced ventilation help control processing vapors
  - Microprocessor unit can maintain up to 10 processing programs
  - Cassette baskets spin counterclockwise and clockwise within reagent container to improve processing
  - Reagent carryover is reduced through centrifugal spinning of basket above reagent vessel 1.8L reagent volume for each vessel

9: Specification of Fully Automated Hematology Analyzer, 6 Part Differential

1. The instrument should be fully automated fluorescence flow cytometry based 6-part differential haematology analyzer offering automatic start-up, shutdown and sample-analysis.
2. The instrument should have random access discrete analysis modes for CBC +NRBC, CBC+DIFFERENTIAL+NRBC., CBC +RET+NRBC, CBC +RET +DIFF+NRBC
3. The instrument should have minimum 35 PARAMETERS reported: WBC, RBC, HGB, HCT, MCV, MCH, MCHC,RDW-SD, RDW-
   V , PLT, NEUT %, LYMPH %, MONO%, EOS %, BASO %, NEUT #, LYMPH #, MONO #, EOS #, BASO #, PDW, MPV, PC T, PLCR, NRBC #, NRBC %, IG #, IG %, RETICULOCYTE%, RETICULOCYTE # ,LFR, MFR, HFR , IRF , RETHE ,PLTO, IPF % TWO HISTOGRAMS – RBC, PLT and TWO SCATTERGRAMS
4. The instrument should have throughput of more than 90 samples per hour in differential mode and not less than 75 samples in specialized modes.
5. The sample aspiration volume for the complete differential blood count should not be more than 100 µl.
6. The instrument should have the following analysis modes , Manual – open mode, Capillary mode and optional Sampler mode.
7. The instrument should have Hydrodynamic focusing / impedance method for RBC/PLT channel.
8. The instrument should have Cyanide free Sls-hb /colorimetric method for the hemoglobin measurement
9. The instrument should be equipped with Fluorescence based semiconductor laser flow cytometry technology for enumeration of differentials and reticulocytes
10. The instrument should report NRBC with every CBC count and report corrected WBC count
11. Instrument should have options for auto sampler & integrated barcode reader.
12. Instrument should have facility for up gradation with additional clinical parameters
13. Instrument should be equipped with automatic rerun / reflex modes
14. Analyzer should be able to report Ret He (haemoglobin equivalent in reticulocytes) – useful parameter to differentiate Iron deficiency and anemia of chronic disorders
15. Analyzer must be able to report immature platelets
16. The instrument should report differentials in body fluid samples
17. Analyzer must be equipped with leucopenic mode
18. The instrument should have COMPREHENSIVE INFORMATION PROCESSING SYSTEM with: User-friendly Windows XP/ 7 based software. 100000 sample data with histogram and scattergrams storage. 99 QC files each with 300 points for QC can be stored.
19. The instrument should have minimum maintenance with Semiconductor laser has lower power consumption, higher stability, and longer life thus cutting down on maintenance cost.

20. The instrument should be EXTENSIVE QC FEATURES : Minimum one file for X bar M. Delta checks available for cumulative review. Option for online QC also available.
21. It should have high linearity of over 4 lacs for WBC's ,over 40 lacs for Platelets and over 500 NRBC's / 100 WBC's
22. The company supplying the instrument should have a good track record and excellent service and distributor network all over Indiia

10: CYTOSPIN / CYTOCENTRIFUGE

The equipment should meet the following specifications:

1. The equipment should be a Bench-top centrifuge for cytology specimens
2. The equipment should be capable of thin-layer cell preparation for retrieving cells from various body fluids especially paucicellular fluids and preserving their morphology
3. Should be capable of processing up to 12 specimens at one time
4. Should be equipped with Biological safety cabinet for safety of the operator
5. Auto-lid lock during rotation with a special lidrelease mechanism should be available
6. Should be designed for easy disinfection and also have a wipe- clean control panel
7. Should be resistant to fluid spillage on the electronic components with capped disposable sample compartments/ chambers for elimination of aerosol
8. May have different sizes of disposable chambers Safety alarms during all stages of operation should be available
9. Microprocessor based controls and programming for time and speed with pull-out program card for fast retrieval
10. Should be compliant with international standards for electrical equipment requirements for laboratory use
11. 220 V, 50Hz Speed 100 to 4,000 rpm
12. Noise levels < 50 Db The equipment should be a automated slide preparation system that produces uniform thinlayer slides for both gynecologic and nongynaecological sample processing which should remove obscuring blood, mucus, debris and also thoroughly mix the sample
13. Processes about 80 samples per cycle with automatic chain-of-custody verification of patient samples

11: INCUBATOR

1. Should be operated on 230V, 50Hz single phase AC supply, and having temperature ranging from ambient to 60ºC
2. Should be double walled with stainless steel inner chamber having a minimum of two inner stainless steel shelves with holes and powder coated outer surface.
3. Inner chamber should be fabricated with ribs for adjusting shelves to convenient height.
4. Should have a minimum of chamber size of (L*B*H) of 450*450*450mm.
5. Should be provided with three side heating elements.
6. Should have air circulating fan (Which can be turn ON/OFF on demand) for uniform temperature on all shelves.
7. Should have double door with acrylic transparent door.
8. Should provide with a microprocessor based digital temperature controller with digital display.
9. Should have synthetic rubber gasket at the door.

12:l Hot air woven

1. **Temperature ambient up to 250° with least count 1°C.**
2. **Most economical with Latest German Technology & modern aesthetics.**
3. **Double metal sheet body with air pocket keep the machine cool.**
4. **Three fans for cooling body, door & Even temperature inside chamber respectively.**
5. **Digital temperature control with Display**
6. **Thermostat added to control the transfer of heat for fine temperature control.**
7. **Insulated glass door window to view the sample.**
8. **Perforated stainless steel removable two racks for keeping samples.**

9. **Air slider provision to eject the humidity formed inside the chamber**

13:. Laboratory Electronic Balance:

CAPACITY: 0.1 gm to 3000 gm.
Pan size: 174 x 143 mm.
ACC : 0.1 GM.
CALIBRATION: Automatic.
DISPLAY: Lcd With Back- Light.
POWER SUPPLY: Adaptor As Well As Rechargeable Battery.

21. pH meter

pH-range	-2.000 to 20.000
pH-resolution	It should be user-definable: At least 0.001
pH-relative accuracy	At least ± 0.002
mV-range	At least -2000.0 to 2000.0
mV-resolution	It should be user-definable: At least 0.1
mV-relative accuracy	At least ± 0.2
Temperature range ° C	MTC: -30.0 to 130.0 ; ATC: -5.0 to 130.0
Temperature accuracy ° C	At least ± 0.1
Display	TFT colour
Concentration range	At least 1.00E-9 to 9.99E+9
Conc. accuracy	At least +/- 0.5%

14:. pH meter

pH-range	-2.000 to 20.000
pH-resolution	It should be user-definable: At least 0.001
pH-relative accuracy	At least ± 0.002
mV-range	At least -2000.0 to 2000.0
mV-resolution	It should be user-definable: At least 0.1
mV-relative accuracy	At least ± 0.2
Temperature range ° C	MTC: -30.0 to 130.0 ; ATC: -5.0 to 130.0
Temperature accuracy ° C	At least ± 0.1
Display	TFT colour
Concentration range	At least 1.00E-9 to 9.99E+9
Conc. accuracy	At least +/- 0.5%

15:. Trinocular Microscope

Head	Trinocular, 30° inclined, 360° rotating.
Eyepiece	WF10X/20mm and with cross hair and micrometer
Bertrand lens	Swing-out type; center-able.
Polarizing attachment	0°-90° rotating analyzing filter. Tint plates included: 1° order red (lambda), lambda/4, quartz wedge.
Nosepiece	5-positions with centering mechanism for all objectives.
Objectives	Achromatic POL (strain-free): 4x/0.10, 10x/0.25, 25x/0.40, 40x/0.65, 63x/0.85
Magnifications	40x, 100x, 250x, 400x, 630x
Focusing system	Coaxial coarse and fine
Stage	160mm dia.; 360° rotating with stop knob and 0.1° vernier.
Condenser	1.25 N.A., with iris diaphragm, focus-able and center-able. With rotating polarizing filter.
Illumination	X-LED^3 illumination system with brightness control.
Warranty	Five (5) Years mechanical and optical parts Two (2) Years electrical

16 Autoclave

1: 35-50 liter capacity
2:Capacity to function at standard recommended temperature (121 degree centigrade), pressure (15 lb/square inch & holding time (20 minutes) etc.
3: High tech radial lick locking mechanism for ultimate care of operation and safety
4:Double safety valve protection mechanism ensuring a long life of the equipment
5:Water indication gauge hydraulic testing for more than double the working pressure
6:High accuracy, efficiency and reliability

17: Specification for Automated Semen analyser

1. Total Sperm Concentration (Count) Functional Sperm Concentration (Prog. Motile Sperm with Normal Morphology)
2. Motility Sperm Motility Index (PMSC X Average Velocity)
3. Progressive Motility ("a" and "b") Average Velocity of the Progressively Motile Sperm (Average path velocity–VAP)
4. Non-progressive Motility ("c") Total Sperm
5. Immotility ("d") Total Motile Sperm
6. Normal Morphology Total Progressively Motile Sperm
7. Motile Sperm concentration Total Functional Sperm Progressively Motile Sperm Concentration

18:Specification of Fully Automated ESR Analyzer

- System should be able to process lavender caped tubes 3-4 ml capacity.
- Through put should be 80 test/hr.
- It should able to perform ESR in EDTA blood also.
- System should able to read the ESR across the labels.
- It should be microprocessor based law dissipation RISC & BIT technology; one couple of optic electronic element (led& analogical sensor) or based on red cell aggregation by photo telemetry.
- Display should be liquid crystal screen, background lighting.
- Power supply of 110-230 VAC.
- Plate rotation speed 1 rotation every 1.5 second.
- It should have thermal printer.
- Accessories as per equipment check device 10,000 tests, 5,000 tests & 1000 tests.
- Firm should provide control thermal roll paper and check device.
- It should be USFDA/CE certified their own controls and IVD approved instrument.
- Thermal roll paper 2 nos.
- Firm should supply 10,000 tests check device with the equipment.
- Firm should mention rate per test (as per check device) in financial bid that shall be fixed for 3 years.
- Year CAMC after 2 years guarantee period.

Technical final will be after demonstration.

19:Specifications of Semi Automated Coagulation Analyzer

- It should be 4 channel Semi Automated Coagulation Analyser with Built in Printer.
- It should be based on Electro-magnetic change in viscocity/light scatter.
- Should have 4 detector Channel Allowing Random Analysis of Upto 4 different parameters in single or duplicate mode.
- Should have automatic sample & reagent mixing.
- Should have Led based light source

- It should be able to perform PT, APTT, Fibrinogen, Extrinsic factors(II,V, VII, X) and Intrinsic factors(VIII, IX, XI, XII) PC, PS, LA assay.
- It should be with four measuring channels and more than 12 incubation blocks
- Should have Built-in Graphical Printer & facility to interface with Computer USB Port.
- Should have Reagent Consumption Half of the manual method.
- Should have Built-in Quality Conr\trol Programme (Stores 50 data points X 3 files of each parameter) with facility to connect with computer for unlimited PT data.
- It should have built in analyzer to give results in sec/INR/% for PT, sec & mg/dl for fibrinogen etc.
- It should have facility to connect a calibrated cabled with variable volume for continuously loading of reagents for accuracy.
- UPS of with minimum 1 hour backup AC 1.5 tonn should be provided.
- Unit should be ISI/CE/USFDA and IVD approved.
- Firm supplying the equipment should provide control when required.
- Rates of kits of various tests should be quoted in financial bid.
- Firm should mentioned whether equipment work on open system kits or not.
- CAMC for five years after expiry of two years guarantee period.
- Technical final approval will be after demonstration.

20::WATER BATH :

• Thermostatically controlled inside stainless steel.
• Temperature ambient to 100c without racks and thermometer.
• Size; inside chamber 300x175 mm (suitable for 2 rakcs)
• High speed stirrer with stainless steel stirring rod and speed regulator.
• Microprecessor temperature controller with dual display achieve high accurrcy of +5c

21: FLUORESCENT MICROSCOPE SPECIFICATIONS:

Optical System	Infinite optical system			
Viewing Head	Compensation free Trinocular head inclined at 30°, interpupilary 48-75mm			
Eyepiece	WF 10X/18			
Nosepiece	Backward Quadruple nosepiece			
Infinite Objective	Semi plan Achromatic Objective	4X, 10X, 20X, 40X, 100X		
	Fluorescent Objective	4X, 10X, 20X, 40X, 100X		
Condenser	Condenser NA 1.25			
Focusing	Coaxial Coarse & fine adjustment, Fine division 0.002mm			
Stage	Double layers mechanical stage 140X140/75X50mm			
Photo Attachment	Coaxial Coarse & Fine Focusing Stand			
Video Adapter				
Illumination	S-LED illumination, Brightness Adjustable			
Reflected Light Source		Excitation	Dichroic Mirror	Barrier Filter
	Blue Excitation	BP460~490	DM505	BA515
	Green Excitation	BP510~550	DM570	BA590
Lamp	3W LED (465-475mm)			
	3W LED (520-530mm)			
Immersion Oil	Fluorescent free oil			

22. Pentahead Microscope

1. Optical system: Infinity corrected system
2. Focus: Vertical stage movement 25mm per coarse stroke Vertical stage movement 1micron per fine stroke Stage rotation of 270 degrees with Stage Lock and Stage Tension adjustment
3. Illuminator: Built-in-Koehler illumination for transmitted light LED bulb (pre-centered) Light Intensity adjustment Centrally located so both hand can be used to increase And decrease light and with auto light intensity Adjustment with change of objective lens
4. Revolving nosepiece: Interchangeable/Removable Reversed Coded Quintuple Nosepiece for auto light adjustment
5. Objectives: Plan 2x,4x, 10X, 40X, & 100XOil
6. Observation tube: Wide field Trinocular head with Field no. 22 mm or more with three Light path selection of 100:0, 20:80 and 0:100
7. Stage: Ceramic-coated coaxial stage with right hand low drive Control with X and Y axis Tension adjustment
8. Condenser: Swing out condenser (N.A 1.1), for 2X -100X
9. Teaching Attachment: For 1+ 4 persons Head with eyepiece of Field no. 22 or more, LED arrow pointer with variable intensity and with Green / Red colour selection
10. There should be provision for demonstration before final approval of equipment
11. The equipment should be USA- FDA/European- CE approved

25. Decahead Microscope

1. Optical system: Infinity corrected system
2. Focus: Vertical stage movement 25mm per coarse stroke Vertical stage movement 1micron per fine stroke Stage rotation of 270 degrees with Stage Lock and Stage Tension adjustment.
3. Illuminator: Built-in-Koehler illumination for transmitted light 12V100W halogen bulb (pre-centered) Light Intensity adjustment centrally located so both hands can be used to increase and decrease light, New Eco Switch for Energy saving to switch off the Light when user moves away from the microscope, Light preset switch for photography. Blue Built-in filters, Neutral density filter 6 and Neutral Filter 25
4. Revolving nosepiece: Interchangeable Reversed Septuple Nosepiece with DIC slot
5. Objectives: Plan 2x,4x, 10X, 20X, 40X, & Plan Fluor 100XOil
6. Observation tube: Wide field Trinocular head with Field no. 22 mm or more with three Light path selection of 100:0, 20:80 and 0:100
7. Stage: Ceramic-coated coaxial stage with right hand low drive Control with X and Y axis Tension adjustment
8. Condenser: Swing out condenser (N.A 1.1), for 2X -100X
9. Teaching Attachment: For 1+ 9 persons Head with eyepiece of Field no. 22 or more, LED arrow pointer with variable intensity and with Green / Red colour selection
10. There should be provision for demonstration• before final approval of equipment
11. The equipment should be USA- FDA/European- CE approved

23:Digital Colorimeter: ,-

- Dynamic range : 0.05 - 50,000 Im (1 Integrating sphere)
- 0.05 - 100,000 Im (2 integrating sphere)
- Accuracy: ±5%
- Sensitivity: 0.00l/m
- Repeatability: 0.001/m
- Relative spectral sensitivity of digital sensor: f1 ±5.5%
- Infrared response: ± 1.5%
- Temperature effect: ±0.5% *DC.*
- LCD display with printer facility.
- Filter- Green, yellow, Red, Blue etc.
- Double-Photo cells with prism
- Galvanometer with black standard

24: PATHOLOGY GROSSING TABLE.

1. TECHCHNICAL SPECIFICATION OF PATHOLOGY GROSSING TABLE.

1. Corrosion resistance extruded aluminum frame and retractable acrylic side splash shield.
2. Louvred back-draft ventilation.
3. Fixed-height units have a work surface that is factory set to the specification up to 116 cm.
4. Stainless steel deep sink with cold/hot Tea Strainer water tap with manual control.
5. Vacuum breaker- protected water supply.
6. Unit comes with an integral centimeter ruler.
7. Internal exhaust model include an internal blower for short distance.
8. Type-304 stainless steel work surfaces and panel.
9. Provision to be kept for cold and hot water supply with draining system to be fitted with deep SS sink.
10. Fitted with fixed lower shelf and fixed upper shelf with fluorescent light.
11. System includes set of two potassium permanganate filters and two fine particle filters.
12. Electrical system panel to be incorporate.

25: AUTOSTAINER

The Equipment should meet the following specification:
1. High throughput robotic stainer for Multiple staining applications and should run up to 12 racks in parallel.
2. Simultaneous staining of protocols of haematoxylin-eosin and pap stain should be available.
3. Equipment should have solvent resistant color touch screen to monitor the staining process using the graphical process representation.
4. Racks should be assigned to the correct Staining Protocol based on transponder & Color –code system.
5. The equipment should have 34 reagent stations and 6 wash stations of 450ml capacity.
6. The equipment should be programmable for 50 programs of upto 40 steps each with incubation time setting from 0 sec to 59 minutes 59 seconds.
7. Optional Integrated oven with temperature C for optimal slide drying is° to 70°setting from 40 preferred.
8. Continuous loading and unloading of slides via rack entry and exit door should be available.
9. Specimen slide throughput of at least 200 slides per hour upto 600 slides per hour is required.
10. Agitation programmable from 0 to 20 times or continuous should be available.
11. Reagent management System, Station information on touch screen & Data Logging should be available.
12. Programmable up and down movement of robotic arm should be available.
13. Fume extraction fan with charcoal filter to remove hazardous fumes should be available.
14. Gentle vibration to slide rack during lifting to reduce carry over contamination should be available.
15. Audible warning buzzer in case of any error during operation should be a feature of the equipment.

26:TECHNICAL SPECIFICATION FOR EMBEDDING STATION

Bright Illumination:

- LED lighting uniformly illuminates the workspace without the clutter of awkward remote lamps. A properly illuminated workspace reduces fatigue and minimizes errors.
- Lighting intensity is easily user adjustable
- Five levels of illumination for both specimen and accessory areas

Cool and Contoured:

- All user contact points are smooth and insulated providing a cool and comfortable workspace. Pressure points and uncomfortable heat are eliminated.

High Capacity for High Efficiency:

- 5 liter paraffin capacity
- Cold plate area for 72 base molds
- Large heated workspace and specimen holding area

Any Sample Size Handled with Ease

- Adjustable paraffin dispense paddle. A simple adjustment moves the paddle to the most ergonomic position for the user.
- Even Super Mega Cassettes can be embedded with ease.

Integrated Para Trimmer®

- A heated wax trimmer built directly into the workspace which removes excess paraffin at the embedding station

Intuitive User Interface

- Large, easy-to-read touch screen display allows quick access to the temperature controls and other parameters. Programmable “sleep” mode saves energy around your workflow.

Temperatures

- Wax reservoir 122 -158ºF, 50 -70°C
- Cold spot 41ºF, 5°C
- Hot spot 122 -158ºF, 50 -70°C
- Tissue storage 122 -158ºF, 50 -70°C
- Mold storage 122 -158ºF, 50 -70°C
- Cold plate 10.4ºF, -12 °

27: SPECIFICATIONS FOR FULLY AUTOMATED 3-PART HAEMATOLOGY CELL COUNTER

• The instrument should provide the following 18 paran eters: WBC, RBC, HGB, HCT, MCV, MCH, MCHC, PL T, LYM#, LYM%, MONO#, M NO%, GRAN#, GRAN%, RDW, MPV, PDW, PCT and Histograms for WBC, RBC and PLT
• Should require less than 201-11 of blood in the whole blood mode with automatic probe wipe
• Should have both Cap Piercing modes and separate open vial mode in-built for aspiration of samples in all different containers.
• Should have a linearity starting from zero for WBC, RBC, HGB and PLT parameters
• Should have a minimum throughput of 50 samples *I* hr frail 18 parameters
• Should have extended counting of WBC, RBC and PLT for cytopenic samples
• Should have separate RBC & WBC apertures with RBC aperture size not more than 50 microns to ensure better precision of indices.
• Should have Automatic as well as Manual Calibration for WBC, RBC, PLT, Hg, and MPV .
• Should have Sweep Flow technology to eliminate recirculation RBC's from being counted as platelets.
• Should prevent clogging of aperture using aperture burr facility without use of reagents Should count each dilution at least three times and give CV between counts for better precision
• Should automatically dispense fixed amount of diluent for predilute mode samples.
• Should have curve fitting on platelet histogram to eliminate microcytic RBC's and prevent underestimation of platelet in presence of Gian Platelet and should have separate predilute made for finger prick sample.
• Should have a touch screen display with language independent icons
• Should have single screen display of all results with capability to print results on external dotmatrix printer along with Institutional Header and should have data storage for at least 250 patient results
• Should have storage for at least 3 controls, with Levy Jennings graph for QC and should have System alerts for reagent empty and Waste full.

28:Bone Decalcifier

1. Capacity up to 30 cassettes
2. W x D x H bench System 30X21X11cm and Solution reservoir 16X12.5X6 cm
3. Solution Volume upto 750ml
4. Bone section can be processed in just 15 minutes

29:Fully Automated Histological and Cytological Slide Stainer

1. The stainer should CE marked and validated for the imager stain protocol.
2. Ability to run 20-30 positions slides racks for flexible, lean processing.
3. Upto four stain racks should run simultaneously.
4. Four racks of 30 slides in 85 minutes
5. Efficient use of consumables, each reagent bath holding 350-360 ml.
6. Flexible program model supporting a wide range of application.
7. Instrument dimension: width 81 cm, Height 41 cm and depth 79 cm.
8. Operating temperature 15-35^{o}C
9. Electrical Voltage: 220/240 VAC, operating humidity: 20-70% RH non-condensing.
10. Power/Frequency: Maximum 80 watts at 50-60 Hz.
11. 2 KVA UPS along with machine.

30:Specification for automated Urine Auto analyser (without sediment analyser)

1. The unit should work on reflectance photometer to evaluate the colour of each test zone.
2. The unit should have three wavelengths viz 470nm,525nm and 625nm.
3. The unit should have through put of 600 samples/hr.
4. The unit should have strip position check system and automatic dry strip detection.
5. The unit should have concealed waste container for used strips disposal.
6. The unit should give results in SI, conventional and arbitrary units.
7. Company should provide two levels (positive and negative) ready to use liquid stable urine controls.
8. Company should provide tri-level grey control strips for instrument QC.
9. Instrument should have touch screen with colour display.
10. The unit should have built in printing capability.
11. Instrument should have bar code reader connected via USB port.
12. The unit should have memory capacity for 2000 measurements with details of results.
13. The unit should have external ports RS 232 and also 2 USB port for LIS connection.

31:Specification for Auto Urine Sediment Analyser

1. Random access totally patient oriented system for urine investigations
2. Minimum 14 parameters with urine: 1. Bilirubin 2. Ketone 3. Blood 4. pH 5. WBC 6. Urobilinogen 7. Protein 8. Nitrite 9. Glucose 10. Micro-albumin 11. Vitamin C 12. Specific gravity 13. Colour 14. Turbidity etc.
3. Must have urine throughput of urine chemistry at least 230 or more samples/hr
4. Sediment analyser must have minimum throughput of at least 60 samples/hr
5. Must have inbuilt microprocessor based touch screen PC for operation
6. Must have 4 no wavelengths from 520nm-660nm
7. Should have sample autoloader with sample rack type with a minimum sample loading capacity of 50 samples at a time.
8. The sediment analyser must use flat flow cell technology, high speed imaging process. Minimum imaging capacity should have more than 800 frames.
9. The system should have facility for each formed elements image displayed on the screen which is separated in each frame.
10. Urine and sediment analyser should be connected with the connector for fast processing.
11. Instrument should have facility for combined result printing.
12. The system should have bar code identification for sample and reagents.
13. The system should have data storage capacity of 10000 or more
14. Laser printer and computer should be supplied with the instrument.
15. The urine strip must be US FDA approved and certificate should be attached.
16. Power supply must be operatable within 220-240V and backed up with invertor (minimum 60 minutes)

32:Specification for fully automated Capillary Electrophoresis system

1. The system should have fully automated to perform serum protein. Hemoglobin, Immunotyping electrophoresis with complete walk away technology including migration and quantitation.
2. The system should be able to have cap piercing capacity for improved workflow and operator safety.
3. The system should be fully automated electrophoresis with 8 simultaneous migrations.
4. The system should use silica capillaries and electrophoresis in liquid flow.
5. The system should use deuterium lamp with optical fibers for emission and reception.
6. The system should accept all types of samples (sample cups or primary tubes) with barcode reader.
7. The system should have the capacity to load more than 100 samples.
8. The through put of the system should be: hemoglobin: 40 samples/hour; Protein: 90 samples/hour; HR: 40 samples/hour; Immunotyping: 10 samples/hour; CDT (carbohydrate deficient transferrin):38 samples/hour; HbA1C also available as per NGSP and IFCC guidelines.
9. The system should be able to perform Hb electrophoresis with whole blood from primary tubes.
10. Red cell hemolysate should automatically performed on the instrument for Hb electrophoresis.
11. The system should disposable antisera segments for each sample for immunotyping.
12. The system should not use any manual staining procedureand should not use densitometer for quantification.
13. Software should be provided for automatic curve analysis with long term storage capacity for results.
14. The system should have LIS capability.
15. The system should provide with required computer, printer and required accessories.

33: Fully Automated Equipment for Liquid Based Cytology (LBC)

1. LBC System which is highly effective in greatly reducing false negative results and provides increased confidence in the detection of preneoplastic and invasive cancer, where present
2. Low Inadequate rates and consistently high PPV(Positive Predictive Values) resulting in the identification of 'true' disease
3. Should ensure that 100% of the collected sample is sent to the laboratory and provides standardization in the collection process and reduces need for repeat recall and processing.
4. The system should be able to work with various collection methods as spatulas, brushes etc.
5. The retention of the brush head in the container eliminates the risk of any abnormal cells being discarded with the sampling device
6. Should preferably use an ethanol based preservative as the collection medium
7. Centrifugation process which effectively removes obscuring blood, mucus and polymorphs while still retaining the important diagnostic material.
8. Should process each specimen to produce up to 8- 10 equally representative slides especially for additional testing.
9. Should be capable of handling a high throughput of 45-50 slides stained per hour.
10. Should be able to process multiple specimens at the same time for best laboratory efficiency.
11. Should be capable of running at regular electrical requirements.
12. The preservative fluid for collection of LBC samples must be non-hazardous with easy storage and transport facility.
13. Should be capable of preparing thin layered slide within a standardized smear diameter from the particular sample.
14. For processing of both gynaecological and nongynae samples
15. Storage of samples at room temperature for about 4 weeks and in refrigerator for 6 months to allow performance of additional adjunctive tests such as HPV, if required
16. Compatible with HPV Testing
17. To provide the quotations for image analysis 1 Tender - Supply, Installation and Commissioning of Equipment required in Pathology Department AIIMS-Jodhpur Page 19 software and integrated image analysis system.
18. Provisions for training of laboratory personnel using LBC.
19. Hidden costs of all reagents and other items not included with the machine to be quoted separately in elaborate detail.
20. All labelling is completed at the start of the process with barcoding of all samples and to include additional identification details such as Name, Date of Birth etc
21. All consumables and reagents are provided for sample collection and processing.
22. Provision for power backup for minimum 2 hours in case of power failure.
23. Staining to be included as an integral part of the system to ensure a high degree of standardization

34: Fully automated clinical gel electrophoresis system

1. sample station for loading upto 8 samples per run
2. 8 independent samples probe
3. Preconfigured work station
4. Option for 11 on board reagents
5. Preprogrammed assay protocol
6. Automated transfer of gel.
7. Automated built in 8 chennu densitometer
8. Inbuilt powerpack
9. Patient data storage facility
10. Print out of patients results

Group-C- Cardio Vascular Thoracis Surgery

(1) SPECIFICATIONS OF BLOOD GAS ANALYSER (Qty.1No)

1. Fully automatic, upgradeable, fast electrolyte combi analyzer.
2. Essential Measured parameters; pH, pCO2, pO2, SaO2, tHb, Barometric Pressure, Na+, K+, Ca++, Cl-, Bl urea and Sr Creatanine & Blood sugar. All these parameters should be measured simultaneously
3. Calculated parameters should include BE, BE ecf, HCO3, Lactate, Anion Gap etc.
4. Sample volume-less than 100ul.
5. Fast analysis time – less than 60 sec.
6. Maintenance free electrodes with individual electrodes ON/OFF facility.
7. Fully automatic liquid calibration of all parameters at user-defined intervals without the use of Gas calibrated reagents, external gases, tanks or regulators.
8. Continuous reagent level monitoring with graphic display.
9. Data display on well-illuminated, adequate size LCD color touch screen display.
10. Data print out on built in graphic printer.
11. Built in auto Quality control facility.
12. Suitable UPS with 30 min backup.
13. Reagents for one year@ 20 samples/day should be provided along with the machine.
14. Cost of reagents to be quoted for comparative evaluation.
15. Stand by blood gas cum electrolyte analyzer in case of breakdown.
16. Should have local service facility
17. Back to back warranty to be taken by the supplier from the principal, to supply spares for minimum 7 years.
18. Must submit user list and performance report within last 3 years from major hospitals
19. Compliance Report to be submitted in a tabulated and point wise manner clearly mentioning the page/Para number of original catalogue/data sheet
20. Demonstration is required.
21. European CE and USFDA approved.

(2) ACT Machine(Qty. 2 Nos,)

1. Description of Function

1.1 Activated Clotting Time (ACT) is a measure of the anticoagulation effects of heparin. The main use of this diagnostic test is in cardiac catheterization labs and open heart and vascular surgery, where they need to keep track and have specific measures of clotting times.

2. Operational Requirements

2.1 One button operation, easy to use

2.2 Portable system

3. Technical Specifications

3.1 ACT machine having at least two test well

3.2 2 point clot detection facility to get accurate results (Optional).

3.3 Parameters- ACT (Mandatory) APTT & PT (Optional).

3.4 Shall use fresh blood at the bedside.

3.5 Shall require less than 3 cc of blood per sample

3.6 Digital Display on Screen of any size.

4. System Configuration Accessories, spares and consumables

4.1 System as specified-

4.2 ACT Tubes - 200 nos

5. Environmental factors

5.1 Shall meet 1EC-60601-1-2:2001(Or Equivalent BIS) General Requirements of Safety for Electromagnetic Compatibility. Or should comply with 89/366/EEC; EMC directive.

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

5.3 The unit shall be capable of operating in ambient temperature of 20-30° C and relative humidity of less than 70%

6. Power Supply

6.1 Should work on 180-270V AC as well as batteries. Mains adaptor to be supplied

7. Standards. Safety and Training

7.1 Should be US - FDA and European CE approved product

7.2 Manufacturer/Supplier should have ISO certification

8. Documentation

8.1 User/Technical/Maintenance manuals to be supplied in English.

8.2 Certificate of calibration and inspection.

8.3 Log book with instructions for daily, weekly. monthly and quarterly maintenance checklist. The job description of the hospital technician and company service engineer should be clearly spelt out.

8.4 Must submit user list and performance report within last 3 years from major hospitals

(3) SPECIFICATIONS OF INVASIVE CARDIAC MONITORS(Qty. 6 Nos)

1**. Description of Function**

a. Capable of providing bedside monitoring of multiple parameters for adult, paediatric and neonatal patients.

2. Operational Requirements

a. Monitors should be IT ready for web based applications without requiring extra server, hardware and software

b. Monitor should be ready for networking (web based and wired) from the point of view of hardware and software.

c. Wired networking (cabling, connectivity and software) is required as standard supply and the networking includes bed to bed networking and bed to central station networking

d. Monitor should have a minimum of 72 hours of data storage, real time trend (graphical and tabular with intervals of 1, 2, 5, 10, 15, 30 minutes) and alarm logs

e. Monitor should have arrhythmia detection and arrhythmia logs

f. Customizable 6 or more screen layouts

g. Monitor should be ready for IABP interface

h. Monitor should be capable of integrating and communicating with clinical information management server and software without any up gradation.

i. One network color laser printer ready for print from any monitor

j. Module/hardware/software/cabling for the monitor to be used for dual/slave display of ventilation parameters, waveforms and loops of ICU ventilator Servo i

k. Ready to monitor following parameters

i. ECG

ii. Respiration

iii. SpO2 (conventional SpO_2 technology and Massimo Signal Extraction Technology both)

iv. Non-invasive blood pressure (NIBP)

v. Two invasive blood pressures (IBP) along with cardiac output module

vi. Core and skin temperatures

vii. End Tidal Carbon Dioxide ($EtCO_2$)

3. <u>Technical Specifications</u>

a. **Display specifications**

i. 17-21 inch or bigger color screen display

ii. Touch screen display with surface acoustic wave technology

iii. Rotary knob for navigation

iv. Rotary knob for navigation

v. 20 or more waveforms

vi. Wide visibility 150 degree or more

vii. Clear visibility from foot end of bed when monitor is placed at head end

viii. User selectable font size

ix. Ready for split screen display

x. Dust proof and without any fan

b. Specifications of essential parameters:

i. **ECG**

1. Should display 12 leads of ECG by connecting 6/5 ECG lead wires

2. Facility for display of 02 or more than 02 selected leads

3. Standard accessories as part of essential supply should include longest trunkcable and extension cable/flying lead.

ii. **Respiration**

1. Through both impedance method and capnography method

2. Standard accessories as part of essential supply

iii. **SpO2**

1. Should have the compatibility with conventional SpO_2 technology and Massimo Signal Extraction Technology (SET)

2. Standard accessories as part of essential supply for SpO_2 measurement by conventional as well as Massimo Signal Extraction Technology

3. Supply should include longest trunk cable and extension cable/flying leads for both conventional SpO2 technology and Massimo Signal Extraction Technology (SET)

iv. **Non-invasive blood pressure (NIBP)**

1. Oscillometric principle of measurement with stepwise deflation

2. Should have manual mode, stat mode or automatic mode

3. Automatic mode should have adjustable time intervals from 2-120 minutes or higher span

4. Standard accessories as part of essential supply (should include longest connecting cable and reusable antimicrobial coated cuffs - pediatric, small adult and medium adult).

v. **Invasive blood pressure (IBP)**

1. Ready for simultaneous monitoring of two invasive blood pressures as a standard configuration for central venous pressure and arterial blood pressure

2. Interface cable should be as per the user requirement depending upon the transducers currently in use

3. Standard accessories as part of essential supply should include longest trunk cable and extension cable

vi. **Temperature**

1. Simultaneous monitoring of core temperature and surface/skin temperature

2. Standard accessories as part of essential supply should include longest trunk cable and extension.

vii. **End Tidal Carbon Dioxide ($EtCO_2$)** through main stream sensor

- Standard accessories as part of essential supply should include longest trunk cable and extension

c. Central station

Including cabling for 15/16 monitors with display two TFT screens of 18" or more with key board and mouse

4. System Configuration, Accessories, Spares and Consumables

a. License for 15/16 or more patients for bed-to-bed and bed-to-central station networking

b. Presence and details of ports and connectors of monitor

i. RS232, USB, RJ45 and DVI

ii. Others

c. Details of ports and connectors of central station

i. RS232, USB, RJ45 and DVI

ii. Others

5. Environmental factors

a. Temperature

i. Operating temperature from 4 to 40 degree or higher span

ii. Storage temperature from -15 to +50 degree or higher span

b. Relative humidity (RH)

i. Operating RH from 10 to 90% or higher span

ii. Storage RH from 10 to 90% or higher span

6. Power Supply

a. Monitor should have computer memory to serve real time clock

b. Power input to be 220-240VAC, 50Hz. Power cable should be fitted with Indian plug and adapter.

c. Monitor should have backup battery for more than 15 minutes for processor and more than 5 minutes for display

7. Standards,Safety andTraining

a. Should have defibrillator and cautery protection

b. Conformity to standards for electrical safety

c. Conformity to standard drop test

d. Conformity to standard safety against water ingress

e. Onsite first 02 training sessions spreading over 06 months for about 50 nurses, 20 doctors and 05 technicians

f. Onsite 05 additional training sessions spreading over 05 years for about 50 nurses, 20 doctors and 05 technicians.

g. Product should be European CE / US- FDA approved.

8. Documentation

a. User manual (hard copy and soft copy) for monitor

b. User manual (hard copy and soft copy) for specific modules

c. User manual (hard copy and soft copy) for central station

9. Optional requirements with a condition that

(1) Monitor should be ready for future upgrades for the parameters mentioned below and

(2) Rates should be quoted in the financial bid with a condition that the rates would remain applicable for a period of 5 years or more.

- Module for continuous beat to beat arterial pressure monitoring through non invasive technique with complete technical details including standard accessories as part of essential supply.

b. Module for upto 4 channel EEG with spectral display with complete technical details including standard accessories as part of essential supply.

c. Module for thermodilution cardiac output including cardiac output kit and 05 disposable catheters with complete technical details including standard accessories as part of essential supply.

d. Module for PICCO cardiac output including cardiac output kit and 05 disposable catheters with complete technical details including standard accessories as part of essential supply.

e. Module for additional two IBPs like intra-abdominal pressure, pulmonary artery pressure etc. with complete technical details including standard accessories as part of essential supply

f. Modules/pods/other hardware/software for any other parameter (other than mentioned above) that may be required in the future with complete technical details including standard accessories as part of essential supply

g. Monitor interface including hardware and software from the available list of compatible and networkable monitors of own makes and others makes.

h. Accessories

i. Multi lead/multi measurement/ECG trunk lead (all lengths)

ii. Flying lead for ECG (all lengths)

iii. NIBP connecting cable (all lengths)

iv. NIBP disposable cuff (infant)

v. NIBP disposable cuff (pediatric)

vi. NIBP disposable cuff (small adult)

vii. NIBP disposable cuff (medium adult)

viii. NIBP reusable antimicrobial coated cuff (infant)

ix. NIBP reusable antimicrobial coated cuff (pediatric)

x. NIBP reusable antimicrobial coated cuff (small adult)

xi. NIBP reusable antimicrobial coated cuff (medium adult)

xii. NIBP reusable antimicrobial coated cuff (large adult)

xiii. Skin/surface temperature probe (all lengths)

xiv. Core/esophageal temperature probe (all lengths)

xv. Conventional SpO_2 trunk leads (all lengths)

xvi. Conventional SpO2 sensor (infant)

xvii. Conventional SpO2 sensor (paediatric)

xviii. Conventional SpO2 sensor (adult)

xix. Massimo SET Patient Cable for SpO2 (all lengths)

xx. Masimo SET Patient Cable (all lengths) for Total Hemoglobin (SpHb), Pleth Variability Index(PVI).

xxi. Masimo SET SpO2 sensor (infant/paediatric)

xxii. Masimo SET SpO2 sensor (adult)

xxiii. Masimo SET sensor (adult) for Total Hemoglobin (SpHb)

xxiv. Masimo SET sensor (adult) for Pleth Variability Index (PVI)

xxv. Masimo SET sensor (adult) for Masimo SET measurements of Oxygen Saturation (SpO_2), Pulse Rate (PR), Perfusion Index (PI)

xxvi. End Tidal Carbon Dioxide ($EtCO_2$) sensor

xxvii. End Tidal Carbon Dioxide ($EtCO_2$) airway adaptor

Note :

Must submit user list and performance report within last 3 years from major hospitals.

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(4) SPECIFICATION OF AUTOCLAVE(Qty.01 no)

HORIZONTAL HIGH PRESSURE CYLINDRICAL SINGLE DOOR STERILIZER WITH MICRO PROCESSOR.

1. Horizontal high pressure automatic steam sterilizer with internal capacity.
    a. Size: (500mmX900mm, Volume-Approx. 186 liters)
    b. Electrical Load:-20 KW
2. The unit should be provide microprocessor based control panel for controlling entire cycle of sterilization and steam pulsing automatically.
3. Sterilization chamber, doors and jacket should be made of high quality SS316.
4. The door should be manual hinge type door.
5. Two stage vacuum pump should be incorporated with the unit to create vacuum for total evacuation of the air for the chamber.
6. The cycles of sterilization should be programmable with the choice of different time & temperature (121/134 degree Celsius) setting with their corresponding pressure (1.2/2.2 kg/cm square).
7. The load after sterilization should be moisture free with post sterilization vacuum drying to ensure load is drying on unloading.
8. Stainless steel electric boiler should be provided with interconnecting steam pipes made of 304ss with good quality immersion heaters which should be able to sustain an electric load corresponding to the requisite capacity of the machine.
9. Power input to be 440 VAC, 3-phase, 50HZ.
10. Machine should have pressure switch and safety valve.
11. The machine should have a provision for automatic filling of water into the steam generator. Water consumption should be minimum preferably.
12. It should have mechanism to control and keep the pressure constant in the jacket.
13. The Digital display at front panel to show the temperature of chamber, pressure in the chamber, cycle number, batch number, time & date, alarm indicator(for high and low temperature),error code, water indicator/alarm etc should be provided on the touchscreen.
14. Computerized recording device with inbuilt printer should be provided that will automatically and continuously monitor and record dates, times of day, load, and identification number and operating parameters.
15. **Bowie & Dick test** and **Leak test** will be available in PLC.
16. All control valve should be pneumatically operated.
17. Company should have IS-3829 (Part-1) marked.
18. Company should have valid **CE** certified.
19. Company should have valid ISO (9001-2008 & 2003-13485) certificate.
20. Company should have manufacturing experience more than 10 years.
21. Must submit user list and performance report within last 3 years from major hospitals.

(5) SPECIFICATION OF DEFIBRILLATOR (Qty. 2Nos)

DEFIBRILLATOR WITH INTERNAL AND EXTERNAL PADDLES FOR ADULT AND PEDIATRIC

1 Description of Function

1.1 Defibrillator is required for reviving the heart functions by providing selected quantum of electrical shocks with facility for monitoring vital parameters.

2 Operational Requirements

2.1 Defibrillator should be Bi- Phasic, light weight < 10kg with battery and latest model
2.2 Should monitor vital parameters and display them
2.3 Should print the ECG on thermal recorders.
2.4 Should work on both Manual and Automated external defibrillation (AED) mode
2.5 Should be capable of doing synchronized & asynchronized cardioversion
2.6 Can be operated from mains as well as battery
2.7 Should have defibrillator testing facility
2.8 Demonstration of the equipment is a must.

3 Technical Specifications

3.1 Should be a Low Energy Biphasic defibrillator monitor with Recorder, having capability to arrest all arrhythmia within a maximum energy of 200 Joules in Manual mode & for AED mode upto 150J
3.2 Should monitor ECG through paddles, pads and monitoring electrodes and Defibrillate through pads and paddles. Should have Automatic or Manual Lead switching to see patient ECG through paddles or leads
3.3 Should measure and compensate for chest impedance for a range of 25 to 125 ohms
3.4 Should have a built in 50mm strip printer/ thermal recorder
3.5 Should have charging time of less than 6 seconds for maximum energy. Charging indicator should be there.
3.6 Should have bright LCD / TFT display for viewing messages and ECG waveform of 4 seconds
3.7 Combined Adult and pediatric paddles should be available.
Internal paddles should also be available and price to be quoted separately."
3.8 Should have event summary facility for recording and printing at least 250 events and 50 waveforms. Patient data storage 90 mins of ECG and events.
3.9 Should have a battery capable of usage for at least 90minutes or 30 discharges.
3.10 Should be capable of printing Reports on Event summary, configuration, self-test, battery capacity etc
3.11 Should have facility for self-test/check before usage and set up function
3.12 Should have SPO2 measuring and display facility.
3.13 Should be capable of delivering energy in increments of 1-2 joules up to 30J and increments of maximum 50J thereafter.

3.14 Should have user friendly 1,2,3 color coded operation.
3.15 Voice prompts on AED mode
3.16 Printing reports of events summary configuration/set test/ battery capacity
3.17 Optional noninvasive pacing/ transcutaneous pacing

4 System Configuration Accessories, spares and consumables

4.1 Defibrillator -01
4.2 Combined External Paddles Adult/Paediatric (pair) -01
4.3 Paddles –Internal -02 pair each for both adult & pediatric
4.4 Patient cable -02
4.5 ECG Rolls -50
4.6 Disposable pads-10 nos.
4.7 Reusable SPO2 Finger Probe-Adult -02
4.8 Reusable SPO2 Paediatric Finger Probe - 02
4.9 Complete set of ECG Leads- 02

5 Environmental factors

5.1 The unit shall be capable of operating continuously in ambient temperature of 10 -400 C and relative humidity of 15-90%
5.2 The unit shall be capable of being stored continuously in ambient temperature of 0 -500 C and relative humidity of 15-90%
5.3 Shall meet IEC-60601-1-2: 2001(Or Equivalent BIS) General Requirements of Safety for Electromagnetic Compatibility.

6 Power Supply

6.1 Power input to be 220-240VAC, 50Hz
6.2 Resettable overcurrent breaker shall be fitted for Protection

7 Standards, Safety and Training

7.1 Should be USFDA or European CE approved product
7.2 Electrical safety conforms to standards for electrical safety IEC-60601-1 General Requirements and IEC-60601-2-25 Safety of Electrocardiograms. (OR EQUIVALENT BIS Standard)
7.3 Should conform to international test protocols on exposure to shock forces and to vibration forces. The standard should be documented.
7.4 Should meet IEC 529 Level 3 (IP3X)(spraying water) for enclosure protection, water ingress.
7.5 Should have local service facility. The service provider should have the necessary equipments recommended by the manufacturer to carry out preventive maintenance test as per guidelines provided in the service/maintenance manual.
7.6 Must submit User list and Performance report

8 Documentation

8.1 User Manual in English
8.2 Service manual in English
8.3 List of important spare parts and accessories with their part number and costing
8.4 Certificate of calibration and inspection from factory.

8.5 Log book with instruction for daily, weekly, monthly and quarterly maintenance checklist. The job description of the hospital technician and company service engineer should be clearly spelt out.

8.6 List of Equipments available for providing calibration and routine maintenance support as per manufacturer documentation in service / technical manual.

8.7 Compliance Report to be submitted in a tabulated and point wise manner clearly mentioning the page/Para number of original catalogue/data sheet. Any point, if not substantiated with authenticated catalogue/manual, will not be considered.

8.8 Must submit user list and performance report within last 3 years from major hospitals.

6:- **Specification of External Pacemakers(Qty. 4 Nos)**

Dual Chamber – External Pulse Generator

1. Must have Constant Current Driven Output from 0.1 mA to 20 mA
2. Must have Pacing continuation after battery removal for at least 30 seconds
3. Must be able to pacing in following Modes : DDD, DOO, DDI, AAI, AOO, VVI, VOO
4. Must have sensitivity Atrial 0.4 - 10 mV &Ventricle 0.8 - 20 mV
5. Must have basic pacing rate between 30 -200 ppm
6. Must have Atrial Overdrive pacing upto 800 ppm
7. Must have minimum Battery life of 7 Days.
8. Should be provided with pacing cables and other accessories.
9. Must have easy to find and replace AA Batteries.
10. Should have local service facility.
11. Must submit User list and Performance report in the last 3 years from major hospitals should be enclosed.
12. User Manual in English.
13. Service manual in English.
14. List of important spare parts and accessories with their part number and costing
15. Must be European CE certified and US FDA approved.

(7)Specifications for Diathermy(Qty. 2 Nos)

Diathermy /Electro Surgical Unit (ESU)

1. **Description of Function**

ESUs are used for surgical cutting and for controlling bleeding by causing coagulation

(hemostasis) at the surgical site. They deliver high-frequency electrical current through an active electrode tip, causing desiccation, vaporization, or charring by resistive heating in the target tissue.

2. **Operational Requirements**

2.1 Microprocessor/Microcontroller technology.

3. **Technical Specifications**

Integrated LCD display with touch screen or touch button system with 300W output

generator for monopolar cut, 120Watt for monopolar coagulation, bipolar cut 150Watt and Bipolar coagulation 120Watt and vessel sealing system for open and laparoscopic surgery**.**

3.2. Should provide monopolar output for cut, coagulation (fulguration & spray) & blend in

multiple levels.

3.3. Should have bipolar cut and coagulation in multiple levels with automatic bipolar

coagulation.

3.4. Activation by foot switch and hand switch for all the modes.

3.5. Activation of bipolar by foot switch and automatic start/stop system

3.6.Auto diagnosis on switching on and during working to continuously monitor all

parameters

3.7. Automatic stoppage of output in case of malfunction with acoustic and visual signal with

display of error code.

3.8. Output powers adjustable automatically or manually from the control panel.

3.9. Programmable memory for output settings

3.10. Simultaneous access to mono by 2 or more users

3.11. Should be usable with laparoscopic monopolar and bipolar instruments, for which

programmes and accessories must be available

3.12. System for neutral plate safety by continuous monitoring of contact quality and

connection

3.13. System for monitoring and control of leakage current

3.14. Frequency leakage on the patient should be less than 10 micro Amp.

3.15. Should be compatible with Argon Plasma Coagulation

3.16. Deonstration is must.

4. **System Configuration Accessories, spares and consumables**

4.1. System as specified

4.2. The accessories should include
(a) trolley,
(b) mains cable with power plug for standard Indian sockets,
(c) foot switches for different outputs,
(d) reusable (5Nos) and single use (50 Nos) neutral electrode for adults and children along with cable for neutral electrode and fixation device wherever required,
(e) sterilisable (5 Nos) and disposable (20 Nos) electrode handle with finger switch with cable for electrode handle,
(f) set of electrodes (long and short) with electrode container with holder,
(g) tip cleaner,
(h) bipolar forceps one straight and one bayonet type with cable,
(i) cable for connecting to standard mono polar and bipolar laparoscopic instruments,
(j) Reusable dedicated instruments for open and laparoscopic monopolar, bipolar and vessel sealing use.

4.3. Complete Unit and all accessories should be from same manufacturer.

4.4. The codes and rates of all possible individual accessories should be quoted separately with clear mention of period of validity of rates.

5. **Environmental Factors:**

5.1. The unit shall be capable of being stored continuously in ambient temperature of 0 -50 deg C and relative humidity of 15-90%

5.2. The unit shall be capable of operating continuously in ambient temperature of 10-40deg C and relative humidity of 15-90%.

6. **Power Supply:**

6.1. Power input to be 220-240VAC, 50Hz fitted with Indian power-plug

6.2. Suitable UPS

7. **Standards & Safety:**

7.1. Should be USFDA or European CE approved product. Copy has to be enclosed

7.2. Manufacturer and Supplier should have ISO certification for quality standards.

7.3. Electrical safety conforms to standards for electrical safety IEC 60601-1 General Requirements (or equivalent BIS Standard)

7.4. Shall meet internationally recognised standard for Electro Magnetic Compatibility (EMC) for electromedical equipment: IEC-60601-1-2 :latest edition Or Equivalent BIS) or should comply with 89/366/EEC; EMC-directive as amended

7.5. Certified to be compliant with IEC 60601-2-2 Medical Electrical Equipment Part 2-2: Particular requirements for the safety of High Frequency Surgical Equipments: latest edition

8. **Training:**

8.1. Comprehensive training for staff of user department and support services till familiarity with the system.

9. **Documentation:**

9.1. Product Literature in original along with that of accessories and indigenous components if any. Photocopies/computer generated copies are not acceptable

9.2. Statement of compliance with tender specifications with clear and unambiguous links to relevant portions of product literature/authentic document, which should be highlighted. Alternatives provided for noncompliant specifications with justification must be described in detail with supporting literature.

9.3. Certificate of compliance with standards and approvals stated above.

9.4. Certificate of manufacturer/principal regarding authorisation of service facility provided by the supplier.

9.5. List of Equipment available in the Service Centre for providing calibration and routine Preventive Maintenance Support. as per manufacturer documentation in service/technical manual.

9.6. List of important spare parts and accessories with the price, which are required for maintenance and repair, with their part number and costing.

9.7. Terms and conditions of warranty and CMC including schedules of visit by service personnel with check list of services to be carried out

9.8. Commitment for supply of log book with check list for daily, weekly, monthly and quarterly preventive maintenance with contact details of service personnel along with the equipment. The job description of the hospital technician and company service engineer should be clearly spelt out in the log book.

9.9. Demonstration is must.

9.10 Must submit user list and performance report within last 3 years from major hospitals.

(8) Specification of Surgical Instruments

INSTRUMENTS SET for CARDIO-VASCULAR & THORACIC SURGERY

1 **CASTROVIEJO NEEDLE HOLDER : 1 each**
MICRO NEEDLE HOLDER Round Handle with rachet, enhanced needle. Grip surface, SAPPHIRE / DIAMOND DUST regular box lock. Soft pressure spring handle very delicate jaws, all edges carefully rounded in order to avoid damage of even the finest needles and sutures.

a) Length 180 mm / 7", 1.2 mm x 11 mm straight tip for suture 5-0 and smaller
b) Length 180mm / 7", 0.4 mm x 11 mm straight jaw for suture 8-0 and smaller
c) Length 180mm / 7", 0.8 mm x 11 mm straight jaw for suture 6-0 and smaller

2 **RYDER NEEDLE HOLDER** Intra Cardiac stainless steel TUNGSTEN CARBIDE / DIAMOND DUST, Ring Handle.
a) Length 18 cm / 8", Round Tip 1.9 mm jaw – **no. 2**

3 **MINI RYDER** with round jaw of 1.4 mm, with Titanium tip
a) Length 15 cm / 6" – **no. 2**

4 **BOZEMANN FINNOCHIETTO Needle Holder** with TC inserts gentle smooth curve at the shaft and curve at the box joint : **1 each**
a) Length 24 cm
b) Length 30cm

5 **CRILE – WOOD Needle Holder** with box joint
a) Length 15 cm / 6" – **no. 3**

6 **MAYO HAGGER Needle Holder**
a) Length 20 cm / 8" – **no. 3**

7 **HEAVY BARRY WIRE TWISTER** with TC inserts : **1 each**
a) Length 20 cm
b) Length 17cm .

8 **RUBIO MINI WIRE TWISTER** with TC inserts
a) Length 13 cm / 5" – **no. 1**

9 **Sternal Wire Cutter Pliers**
a) Length 23 cm – **no. 1**
b) Length 17.5cm - **no. 1**

TISSUE FORCEPS:

10 **RING TIP TITANIUM MICRO TISSUE FORCEP**, Sapphire / Enhanced needle grip Surface, round handle ring smooth. **no. 1 each**
a) Length 180mm / 7" – 0.5 x 1 mm
b) Length 180mm/ 7" – 0.5x1 -1.3 x 2 mm.
c) Length 210mm -0.5x1mm.

Delicate Tissue Forceps :

11 **DEBAKEY – GERALD – Atraumatic Tissue Forceps** Titanium : **no. 2 each**

a) Length 15 cm / 6" Jaw 1.5 mm
b) Length 18 cm / 7" Jaw 1.5 mm
c) Length 24cm Jaw 1.5mm

12 **DE- BAKEY – ADSON, Atraumatic tissue Forceps**

a) Length 12.5 cm / 4 $^{1/2}$" Jaw 1.5 mm - **no. 1**

13 **DEBAKEY, angled, Atraumatic tissue Forceps**

a) Length 19.5 cm / 7 $^{1/2}$" Jaw 1.5 mm - **no. 2**
b) Length 19.5 cm / 7 $^{1/2}$" Jaw 2.0 mm - **no. 1**

14 **Dressing forceps Pott-smith with TC**

a) 23cm - **no. 3**
b) 18cm- **no. 3**

15 **ADSON TC SMOOTH**: **no. 1 each**

a) Length 12.0 / 4 ½"
b) Adson TC Standard Length 15.0 cm /6''

16 **CASTROVEIJO MICRO SCISSORS**, Fine / nano blade Swedish edge spring style , flat handle – **no. 1 each**

a) Length 180 mmm/ 7" 45deg nano blade
b) Length 180 mmm/ 7" 90 deg nano blade
c) Length 180 mmm/ 7" 125 deg nano blade

17 **CASTROVEIJO MICRO SCISSORS**, ultra fine nano blade Radialis Round Handle – **no. 1 each**

a) Length 180 mmm/ 7" 45 deg nano blade
b) Length 180 mmm/ 7" 90 deg nano blade
c) Length 180 mmm/ 7" 125 deg nano blade

18 **METZENBAUM SCISSORS** , ring handle extra light curve edge ultra edge for ulitmate cutting performance .Gold plate sank

a) Length 180 mm /7" – **no. 2.**

19 **METZENBAUM SCISSORS** , Straight, ring handle extra light curve edge ultra sharp edge for ultimate cutting performance Gold plate sank : **no. 1 each**

a) Length 180 mm
b) Length 200 mm

20 **BABY METZENBAUM SCISSORS** ring handle extra light curve super cut ultra sharp edge for ultimate cutting peformance GOLD plate sank : **no. 1 each**

a) Length 12 cm Str.
b) Length 12cm CVD.

21 **METZENBAUM FINO TC scissors** curved – **no. 1 each**

a) Length 14 cm /5 ½"
b) Length 18 cm /7"
c) Length 20 cm /8 "

22 **METZENBAUM FINO TC scissors** pointed – **no. 1**

a) Length 18 cm /7 “

23 **IRISH SCISSORS** straigth

a) Length 11.5 cm /4 ¼” – **no. 1**

24 **IRISH SCISSORS** Curved

a) Length 11.5 cm /4 ¼ - **no. 1.**

25 **HOHENFELLNER Valve cutting scissors** – **no. 1 each**

a) Length 21 cm /8 ¼”

b) Length 24 cm /9 ½”

26 **NELSON METZENBAUM SCISSORS** WITH tc EDGES CURVED – **no. 1 each**

a) Length 18 cm / 7”

b) Length 23 cm /9 “

27 **ATRAUMATIC VASCULAR CLAMP COOLEY** – BECK vessel clamp – **no. 1 each**

a) Length 15 cm /6”

b) Length 15.5 cm /6”

28 **COOLEY MULTIPURPOSE CLAMP** – **no. 1 each**

a) Length 14.5 cm /5 ½” ,90 deg

b) Length 16 cm /6 1/4“, 60 deg

c) Length 20.5 cm /8”

29 **COOLEY-DERRA ANASTOMOSIS VASCULAR CLAMP** – **no. 1 each**

a) Length 16.5 cm /6 ¼”

b) Length 17 cm /6 ½”

30 **COOLLEY PEDIATRICS ATRAUMATIC VASCULAR CLAMP**

a) Length 14 cm – **no. 1.**

31 **COOLEY CAVAL OCCLUSION CLAMP** – **no. 1 each**

a) Length 21 cm – 20 Fr.

b) Length 21 cm -24 Fr.

c) Length 21 cm-26 Fr.

d) Length 21 cm -28 Fr.

e) Length 21 cm -32 Fr.

f) Length 21 cm -34 Fr.

32 **COOLEY ILIAC CLAMP**

a) Length 24 cm- **no. 1.**

33 **COOLEY AURICULAR APPENDIX CLAMP**

a) Length 25 cm – **no. 1.**

34 **Debakey TANGENTIAL OCCLUSION CLAMP** – **no. 1 each**

a) Length 197mm – jaw working length -45mm and depth 12mm

b) Length 265 mm – jaw working length -65mm and depth 18mm

35 **Debakey Ring handle bulldog clamp** – Straight shank with jaw working length 45mm – **no. 1 each**

a) Straight 130mm

b) Cuved 130mm

c) Angled 45deg.130mm

d) Angled 45deg 100mm

36 **Cooley Aortic clamp** – **no. 1 each**

a) 10 ¼" jaw working length – 2 ¼" & depth ¼"
b) 10" jaw working length –3" & depth ¼"

37. **Castaneda Neonatal Minature Clamp** - **no. 1 each**
    a) length 11cm/ 41/4 "
    b) Length 12cm/ 4 ½"
38. **Debakey morris atraumatic vascular clamp** – **no. 1 each**
    a) length 25cm/10"
    b) length 26.5cm/10 1/2"
    c) length 22cm/8 1/2"
    d) length 18cm/7"
39. **Tube occluding forceps** with safety guard for CPB – **no. 10 each**
    a) length 15cm/6"
    b) length 20cm/8"
40. **Aortic vascular punch** of sizes – **no. 1 each**
    a) 4mm
    b) 5mm
41. **Line organizer** for ciruit for cardiopulmonary bypass with slots to fit the tubings of size ½" (one slot), 3/8" (two slots), ¼" (four slots) – **no. 2.**

42. **Cooley atrial retractor** rigid – **no. 1 each**
    a) 21.5 cm
    b) 23cm
    c) 27cm
43. **Diamond knives** for coronary surgery – **no. 1.**

44. **IMA retractor** (sternal retractor for harvesting internal mammary artery) – **no. 1.**

45. **Cushing nerve hooks** 19cm / 7 ½" – **no. 1.**

46. **Crile nerve hooks** 14.5cm/ 5 ½" – **no. 1**

47. **Desmarves retractors** sizes stainless steel – **no. 1 each**
    a) 13cm/5" width 8mm
    b) 13cm/5" width 10mm
    c) 13cm/5" width 12mm
    d) 13cm/5" width 14mm

48. **Epicardial fat retractor** for CABG medium 38mm – **(1 No.)**

49. **Cooley ligature carriers** size, stainless steel 17cm/ 6 ½" – **(1 No.)**

50. **Debakey adson-suction tubes**, stainless steel (dedicate 4mm suction tube for coronary surgery with 5mm basket with 4 sides openings at the distal tip. Tip permanently attaches) – (**2 Nos**.)

51. **Yankauer suction** – distal tip 10mm, shaft 6mm and distal tip is detachable length 29.5cm – **6 Nos.**

54. **Morse Sternal retractor** –double blade **(No. 1 each)**
    a) Adult – maximum spread 200mm, length – 150mm
    b) Pediatric - maximum spread 160mm, length – 120mm.
55. **Borford Rib & Sternal retractor** – **(1 No.)**
    single blade with two pairs of detachable blade
    65mm & 45mm blade,
    maximum spread 250-290mm.

56. **Fino-Chietto Rib & Sternal retractor**: **(1 No. each)**
    a) Infant- maximum spread 70mm, length – 55mm
    b) Children- maximum spread 100mm, length – 75mm
57. **Beck's aortic clamp** –straight shanks jaw working length 40mm , depth 10mm – **(1 No. each)**
    a) 8"
    b) 8 ½"
58. **Titanium clip applying forceps** – **(No. 1each)**
    a) Small – 19.5cm (length)
    b) Medium – 19.5cm(length)
    c) Large – 20.5cm(length)
59. **Rumel-belmont torniquet** – **(1 No.)**

60. **Debakey's vascular dilator** – **(No. 1each)**
    a) 0.5mm
    b) 1.0mm
    c) 1.5 mm
    d) 2.0mm
    e) 2.5mm
    f) 3.0mm
61. **Langenbeck's retractors** – **(no.1 each)**
    a) 10x40mm- 21cm(length)
    b) 10x28 mm– 21cm(length)
62. **Langenbeck's kocher's retractor** 20x30mm, 21cm (length) – (**1 No.)**

63. **Allison Lungs spatula** – **(No.1 each)**
    a) 27cm (length) & 40mm blade
    b) 32cm(length) & 65mm blade
    c) 26cm (length) & 132mm blade
64. **Weitlaners self retaining retractor**
    a) 16.5cm – **(1 No.)**
    b) 20cm - **(1 No.)**.
65. **Doyen's rasporatories** 17cm – **(1 No.)**
66. **Leksell bone cutting rongeur** light curved handle – 23cm (length) – **(1 No.)**

67. **Ruskin-liston bone cutting forceps** – 18cm(length) – **(1 No.)**

68.**Giertz rib shear** 25cm – **(1 No.)**

69. **Bailey rib spreader** 17cm – **(1 No.)**

70**. Tubb's mitral valve dilator** – max. blade opening 45mm, working length 200mm – **(1 No.)**

71. **Bailey aortic valve rongeur** – 31mx7.8mm jaw, working length – 4 ½" – **(1 No.)**

72. **Mills endarterectomy spatula** – 7" with 1.5mm blade – **(1 No.)**

73. **Carwford – cooley graft tunneler**, light curve, length 18" & internal dia. 10mm -**(1 No.)**

74. **Diethrich (straight) bull dog clamp** 5cm- closing pressure 50g, weigth 3g – **(2 No.s each)**

75**. Diethrich (Curved) bull dog clamp** 5cm- closing pressure 50g, weigth 3g – **(2 No.s each)**

76. **Mixter baby forceps** 14cm & 19cm – **(1 No. each)**

77. **Mixter forceps** 22cm fully cvd, fine point surgical right angled jaw – **(1 No.)**

78. **Price Thomas brochus clamp** 22cm – **(1 No.)**

79**. Instrument Tray**: **(2 No.s)**
For careful sterilization and storage of fine and delicate instruments, for example microsurgery instruments & fine hooks. May be sterilzed and stored together with the instruments in sterilizing container, autoclavable upto 134 deg C, low weight, simple and secure locking system and stackable.

Note:

- CE should be mentioned on each instrument.
- Instuments should be of high quality and standard
- Instrument should be coated with Tungsten carbide or Daimond dust
- All instruments should be European CE or USFDA approved. Copy of certificate is to be enclosed with bid.
- Must submit user list and performance report within last 5 years from major hospitals
- Demonstration of all the instruments is must
- Manufacturer should ISO certificed. Copy of certificate to be enclosed.
- Bidder should quote for all the instruments.

(9) SPECIFICATION OF SURGICAL LOUPE (Qty. 2 Nos)

MAGNIFYING SURGICAL LOUPE

Specifications:

1. Magnification Approx : 2.5 – 4.0 X.
2. Adjustable or customized as per your requirement.
3. Optics should have superior resolution, field size and image brightness.
4. Configurations : TTL; Flip-up.
5. Field width & depth : 8 – 15 cm.
6. Weight: 60-90 grams.
7. Working distance: Customized between 25-60cm.
8. Waterproof, Hypo allergenic, Corrosion resistant.
9. Unique adjustable nose pad.
10. Lightweight, Unparalleled in strength.
11. Carrying case with engraving doctor's name on the box & temple.
12. It should have 3 year warranty.
13. It should be European CE and US FDA approved.
14. Demonstration of the product is must.
15. Must submit user list and performance report within last 3 years from major hospitals.

(10)Specification for LED head light with Head Band(Qty.2 nos)

Surgical LED head light and light source

1. Surgical LED head light with light source on professional head band, headlight Universal Floor stand with 9ft (275cm) premium bifurcated cable, headlight module and gown clips , headband should be lightweight material that's washable and breathable
2. Lightweight and flexible 3mm cable, Translucent outer sheath for visualization of fiber integrity,. Cool and bright light. Vibrant color rendition.

3. Variety of Rotary Turrets with at least four ports Wolf, ACMI, Olympus & Storz.
4. Simple 2-point adjustment, comfortable to fit for all heads of all sizes. Easy to reach 4-position intensity switch.
5. Should have Ultra-lite cable bifurcated to reduce the weight on head.
6. Cable diameter should not exceed 3 mm.
7. Cable length should be at least 9 ft. long
8. Lifetime Warranty against browning.
9. One year warranty.
10. Should be able to attach existing Camera on the head band.
11. Extended linkage to allow usages with various operating loupes.
12. 300W Xenon Lamp
13. White Light should Deliver True Color.
14. It Should Delivers Cool White IR Filtered Light.
15. It should have One Rotating Turret For Compatibility With most Industry Standard Cable Fittings. Above 30000 lux of illumination.
16. Continuously adjustable spot size and brightness control, super high output LED.,
17. Universal Floor stand New large casters- 75mm, 10° angle for better viewing of LCD display.
18. Should be CE certified and US FDA certified.
19. Demonstration of product is must.
20. Must submit user list and performance report within last 3 years from major hospitals

(11) Consumable SUTURE LIST (Quarterly estimate)

Sl No	Specification	Size	Foils per Packet	No of Packets required
	SILK			
1	Silk, Size 0,30mm, 1/2circle RB, 90CM,	0	12	8
2	Silk , size 1, 60mm, 76cm, 3/8 circle cutting,	1	12	8
3	Silk, size 2-0,25mm, 1/2circle taper cut, 76CM,	2-0	12	10
4	Silk, 3-0, 25mm, 1/2circle RB, 90CM	3-0	12	15
5	Silk,0, 90CM	0	12	5
6	Silk, 2-0, 90CM	2-0	12	5
7	Silk, 3-0, 90CM	3-0	12	5
	LACTOMER			

8	Lactomer 9-1,size 2-0 ,22mm, 1/2circle, taper point	2-0	36	4
9	Lactomer 9-1, size 3-0 ,22mm, 1/2circle, taper point	3-0	36	4
10	Lactomer 9-1, size 0 ,37mm,, 1/2circle, taper point	0	36	3
	POLYPROPYELENE			
11	Polypropylene, Size 2-0, 26mm, 90cm ,1/2circle, Taper Point DA	2-0	36	1
12	Polypropylene, Size 3-0; 60CM ,BLUE,13MM ,1/2 Circle, Taper Point DA	3-0	36	1
13	Polypropylene, Size 3-0; 90CM ,BLUE ,17MM 1/2 Circle Taper Point DA	3-0	36	2
14	Polypropylene, Size 3-0; 90CM ,BLUE, 22MM , 1/2 Circle,Taper Point,DA	3-0	36	2
15	Polypropylene, Size 4-0; 13MM, 60CM ,BLUE ,1/2 Circle , Taper Point ,DA	4-0	36	1
16	Polypropylene ,Size 4-0, 17mm, 90cm, blue, 1/2circle,Taper Point, DA	4-0	36	1
17	Polypropylene, Size 4-0; 20MM, 90CM ,Blue, 1/2 Circle Taper Point DA	4-0	36	1
18	Polypropylene; Size 5-0; 10MM ; 60CM ,BLUE 1/2 Circle Taper Point DA	5-0	36	1

19	Polypropylene ; Size 5-0; 13MM; 75CM ,BLUE 1/2 Circle Taper Point DA	5-0	36	1
20	Polypropylene, Size 5-0, 17mm, 90cm, blue, 1/2circle,Taper Point ,DA	5-0	36	1
21	polypropylene; Size 6-0; 9MM; 60CM ,BLUE 3/8 Circle Taper Point DA	6-0	36	1
22	Polypropylene; Size 6-0; 13MM ; 75CM ,BLUE 1/2 Circle Taper Point DA	6-0	36	1
23	Polypropylene, size 6-0, 3/8circle ,11mm, 60cm, taper cut/multi pass, DA	6-0	36	1
24	Polypropylene, Size 7-0, 3/8circle, 8mm, 60cm, DA, taper point,DA	7-0	36	1
25	Polypropylene, Size 7-0, 3/8circle 10mm, 75cm, DA, taper point,DA	7-0	36	1
26	Polypropylene, Size 7-0, 3/8circle 11mm, 60cm, DA, taper cut/multi pass,DA	7-0	36	1
27	Polypropylene, Size 8-0 60 cm,BLUE 8MM 3/8 Circle Taper cut/multi pass,DA	8-0	36	1
	POLYESTER			
28	Polyester 5 blue and 5 white, size 2-0, 1/2 circle 20mm, **10X75CM,** 3mmx7mm firm cardiopoint, DA	2-0	6	4
29	Polyester 5 blue and 5 white,size 2-0 ,1/2 circle 25mm, **10X75CM,** 3mmx7mm firm cardiopoint, DA	2-0	6	2

30	Polyester white,size 2-0, 1/2 circle 20mm, 75CM, 3mmx7mm firm cardiopoint,DA	2-0	36	1
31	Polyester white, size 2-0,1/2 circle 25mm, 90CM, 3mmx7mm firm cardiopoint,DA	2-0	36	1
32	Polyester blue, size 2-0, 1/2 circle 20mm, 75CM, 3mmx7mm firm cardiopoint,DA	2-0	36	1
33	Polyester blue ,size 2-0, 1/2 circle 25mm, 90CM, 3mmx7mm firm cardiopoint, DA	2-0	36	1
34	Polyester, size 2-0, 90CM ,blue 17MM 1/2 Circle Taper Point ,DA	2-0	36	2
35	Polyester, size 2-0, 75CM ,white 17MM 1/2 Circle Taper Point ,DA	2-0	36	2
36	Polyester, size 2-0, 90CM ,WHITE 20MM 1/2 Circle Taper Point ,DA	2-0	36	2
37	Polyester, size 2-0, 90CM ,blue 20MM 1/2 Circle Taper Point ,DA	2-0	36	2
38	Polyester, size 3-0, 75CM ,BLUE 13MM 1/2 Circle Taper Point ,DA	3-0	36	1
39	Polyester, size 3-0, 75CM ,BLUE 16MM 1/2 Circle Taper Point ,DA	3-0	36	1
40	Polyester, size 4-0, 75CM ,BLUE 13MM 3/8 Circle Taper Point ,DA	4-0	36	1
41	Polyester, size 4-0, 75CM ,BLUE 16MM 3/8 Circle Taper Point ,DA	4-0	36	1
42	Polyester, size 4-0, 90CM ,BLUE 16MM 1/2 Circle Taper Point ,DA	4-0	36	1

43	**Coated, Braided Polyster Suture ,Size 2,75CM,40MM,1/2 Circle,Tapercutting ,BLUE**	2	12	1
44	**Coated, Braided Polyster Suture ,Size 5,75CM, 45MM,1/2 Circle,Tapercutting ,BLUELONG PACK**	5	12	1
	STEEL AND PACING WIRES			
45	Steel , size 6, 1/2 circle, conventional cutting, 48mm, 4x45cm	6	12	6
46	Steel ,size 5,1/2 circle, conventional cutting, 48mm, 4x45cm	5	12	6
47	Pacing wire,size 0, 1/2 circle taper point, 20mm, 60cm	0	12	5
48	Pacing wire, size 3/0, 1/2 circle taper point, 17mm, 60cm	3-0	12	5

Note:

- CE should be mentioned on each product.
- Suture should be of high quality and standard.
- All sutures should be in a pre-sterilised packing.
- All sutures should be European CE or USFDA approved. Copy of certificate is to be enclosed with bid.
- Demonstration of all products is must for sample evaluation.
- Must submit user list and performance report within last 3 years from major hospitals
- Manufacturer should ISO certified. Copy of certificate to be enclosed.
- Bidder should quote for all the sutures.

(12) Consumable Items (CPB ACCESSORIES & PROSTHESIS)

Group A: CPB ACCESSORIES (Cardiac Surgery and Perfusion)

Group B: PROSTHESIS (Valves and Rings).

Group A: CPB ACCESSORIES (Cardiac Surgery and Perfusion)

1. AORTIC PUNCH (4mm & 5mm) : (no. 5 each)

· Blade should be able to float around the punch.
· Punch should be available with tapered cutting blade to increase visibility.
· Should be available in all functional sizes.

2. CORONARY ARTERY RETRACTION CLIPS SIZES: (no. 10 each)
3MM AND 5MM

· Should be designed to improve exposure to a coronary anastomosis site.
Should be able to small prongs and gently hold tissues away from the vessel to improve vision.

3. TEMPORARY PIGTAIL PACING WIRE: (no. 20)

· Should include unipolar atrial and ventricular pacing, pediatric unipolar pacing, and the bipolar pacing lead.

4. MIST BLOWER : (no. 10)

· Should have specialized nozzle utilizing a micro orifice for fluid delivery and a separate orifice for gas delivery. Should have the malleable shaft and on/off control on the hand piece.

5. ARTERIOTOMYSHUNTS(INTRA CORONARY SHUNTS): (3 set of all sizes)

Sizes: 1.0,1.25,1.5,1.75,2.0,2,5,2.5, 2.75 & 3.0mm.

· Should be beveled tip shunts with all sizes.
Should have fully transparent body.

6. ACT CARTRIDGES: (No. 100)

7. L.V. VENT: (1 set of all sizes)

Left ventricular vent should consist of round tipped dual lumen tube with

lateral eyes, suture collars & proximal funnel connectors used for emptying the Left Ventricle for clearer view during surgery. - **All sizes.**

8. ANTEGRADE OSTEAL CARDIOPLEGIA CANNULA - ALL SIZES: (1 set of all sizes)

Antegrade cardioplegia cannula should be made of soft 100% silicone conduit with distal bulbous end & should have luer lock connector at the proximal end for administration of cardioplegia solution into the coronary ostia.

Sizes: 3.5, 4, 4.5, 5, 5.5, 6 mm.

9. CARDIOPLEGIA CANNULA SIZE INFANT: (no. 4)

Cardioplegia cannula should be made of soft 100% silicone & should be tapered conduit with distal open tip having adjacent lateral eyes, followed by a flange for secure positioning. It should have proximal luer lock & a SS needle with hub.

Size: Infant.

10. ONE PIECE PEDIATRIC AORTIC CANNULA SIZE 6FR-16 FR VENTED: (no. 1 set of all sizes)

· Should be beveled with thin wall tips and should be elongated one piece.

11. 45^0 ANGLED TIP ARTERIAL CANNULA SIZED 8 FR -24 FR: (no. 2 set of all sizes)

· Should be beveled thin wall tips attached to tapered cannula bodies. Should have kink resistant wire wound bodies.

12. ARTERIAL CANNULA 45^0 ANGLE WITH DIFFUSED FLOW TIP : (no. 2 set of all sizes)

SIZES 18 FR- 24FR

· Should be one piece wire wound body with integrated flutes for diffused flow.

13. FEMORAL ONE PIECE ARTERIAL AND VENOUS CANNULA KIT: (no. 1 set of all sizes Arterial & Venous)

SIZES 8- 21FR. ARTERIAL AND 8-29 FR. VENOUS CANNULA

· Should be one piece wire wound body.

14. STANDARD INSERTION KIT FOR FEMORAL CANNULATION : (nos. 2)

15. CARPENTIER BI-CAVAL FEMORAL VENOUS CANNULA: (nos. 1 each)

SIZES : 24/29 FR, 30/33FR

· Should have wire wound kink resistant two stage design.

16. SINGLE STAGE VENOUS CANNULA WITH METAL TIP: (no. 2 set of all sizes)

SIZES 12-31 FR

· Should have kink resistant wire wound taper body with beveled metal tip.

17. SINGLE STAGE VENOUS CANNULA WITH RIGHT ANGLE : (no. 3 set of all sizes)

SIZES 12-40 FR

· Should have kink resistant wire wound taper body with tapered multiport tips. Should be

right angled with plastic tip.

18. SINGLE STAGE STRAIGHT VENOUS CANNULA MALLEABLE: (no. 3 set of all sizes)

SIZES 12-40 FR

· Should have kink resistant malleable wire wound taper body with tapered multiport tips.

19. DOUBLE STAGE VENOUS CANNULA ROUND AND OVAL SHAPE : (no. 2 set of all sizes)

SIZES 28/36,36/46,32/46, 36/51, 32/40, 36/46 FR.

· Should be two stage cannula with oval body in various sizes. Should be two stage cannula with round body in various sizes. Should have cannula body with thin walled with depth markings.

20. AORTIC ROOT CANNULA : (no. 2 set of all sizes)

Sizes: 4 FR-11 FR

· Should have radiopaque tips attached to clear PVC bodies. Additional features: aortic root pressure monitoring and left heart venting. Can be used to aspirate air emboli as well administer cardioplegia.

21. AORTIC ROOT CANNULA WITH VENT LINE: (no. 2 set of all sizes)

Sizes: 5 FR-11 FR

· Should have radiopaque tips attached to clear bodies with separate vent line.

22. AORTC ROOT CANNULA PEDIATRIC NEONATAL: (no. 2)

Sizes: 4 FR

· Should be able to aspirate air from Aorta, Should have radiopaque tip and standard 5±0.5 in length or a shortened 2.5 in.

23. CARDIOPLEIGA NEEDLES: NEONATAL, PEDIATRIC AND ADULT : (no. 2 of all sizes)

Sizes: 5FR AND 8 FR

· Should have stainless steel tip with plastic depth stop, Needle should be attached to Flexible PVC tubing which should include a drape clamp and female luer.

24. SILICON OSTIAL CANNULA FOR CONTINUOUS PERFUSION: (nos. 4 each)

Sizes: 15 FR,17FR AND 20 FR

· Should have a silicon body with soft bulb shaped tips, should have a female luer connection site.

25. OSTIAL PERFUSION CANNULA WITH BASKET TIP AND SOFT CONVEX TIP: (nos. 4 each)

Sizes: 10 FR, 12 FR AND 14 FR.

· Should have flanged, radio-opaque basket tips/soft tips attached to malleable stainless steel shafts.

26. RETROGRADE CARDIOPLEGIA CANNULA WITH AUTO INFLATE: (nos. 4 each)

Sizes 13 FR & 15 FR

· Should have silicon/ PVC bodies with auto inflatable cuff and pressure monitoring lines; should have multiport tip/ integral stopcock.

27. MULTIPLE PERFUSION SET : (nos. 4 each)

· Should be able to allow simultaneous perfusion of the aortic root and up to three or more vein grafts, should have inlet ports with male or female luers and clamps attached to an adapter that can split into four or more legs.

28. LEFT HEART VENT CATHETERS: (1 set of all sizes)

Sizes 10FR,13FR,15FR,16FR,18FR,20FR,24FR

· Should be of PVC or silicon, could be used for direct and indirect venting, should have perforated tip, malleable bodies with depth mark. Should have a choice of either PVC or Silicone. Along with straight body and with depth marking. Should have all vent terminate with a vented or non vented ¼ in connector.

29. PERICARDIAL SUMPS : (no. 5)

Sizes- 20 FR

· Should feature a fluted tip, should be encased in a stainless steel spring and should have weight at the end.

30. INTRACARDIAC SUMP: (no.5)

Size- 20 FR

· Should feature a perforated pool tip to maximize suction and minimize tissue trauma. The tip design should be ideal for atraumatic suction within the heart chambers.

31. SUCTION TUBE : (10 set of all sizes)

Sizes- 6 FR,10FR AND 20 FR.

· Should have variety of cardiac suction tubes, intra-cardiac suction tubes & rigid suction tubes.

32. MICRO SUCTION TUBES (no.10)

Sizes- 9 FR

· Should have a vacuum control port, malleable shaft, should equipped with a length of tubing and clamp terminating with a ¼ in (0.64cm) connector.

33. MACRO RIGID SUCTION TUBES SIZES 20 FR : (no. 10)

· Should have tip made up of stainless steel, should have fluted pool tip to maximize suction and minimize tissue trauma, should offer gentle suction.

34. TOURNIQUET SETS SIZES 12 FR, 16 FR AND 19 FR: (no. 4 set of all sizes).

· Should have color coded tubes with varying lengths for adults and pediatric, should have wire snares included with the tube set.

35. VESSEL CANNULA WITH AND WITHOUT VALVE SIZES: (no. 4 set of all sizes)

2MM,3MM, 4MM

· Should have clear and radiopaque bodies. These should terminate with a female luer.

Should have tips in various sizes and shapes.

36. ARTERIOTOMYCANNULA SIZES: (no. 4 set of all sizes)

2MM,3MM,4MM,5MM,6MM

· Should have polyurethane tube with a bulb shaped tip connected to winged female luer.

37. RAPID PRIMING SET LENGTH @35CM AND @40CM : (no. 10 each)

· These should facilitate the transfer of fluid during the priming of the circuit. Should have large bore spikes attached to flexible tubing with a clamp. Should terminate with either an open end tube or a male luer.

38. RAPID PRIMING"Y" SET LENGTH AROUND 1 M : (no. 15)

· These should facilitate the transfer of fluid during the priming of the circuit. Should have large bore spikes attached to flexible tubing with a clamp. Should attach to a " Y" adapter with a length of tubing and another clamp.

39. SPECIFICATION FOR ADULT OXYGENATOR : (no. 15)

a. Priming volume should not be less than 300 ml.
b. Blood flow range should be 0-7 lts./min.
c. Oxygen transfer should be at least 400ml/min.
d. Heat exchange efficiency should not be less than 0.50.
e. Housing material should be of polycarbonate.
f. Surface area of the fibers should be from 1.8m2to 2.4m2
g. Heat exchanger should be made of stainless steel and surface area should be approx 20cm2
h. Blood inlet port (from pump) 3/8²
Blood outlet port 3/8²
Cardioplegia port 1/4²
Gas Inlet port 1/4²
Gas Outlet port 1/4²
Water Ports ½²
Maximum Pressure Blood inlet 1000mmHg
Water Inlet 42 PSI
i. Blood storage capacity of hard shell reservoir should be approx. 4000ml
j. Minimum operating volume of reservoir should be 200ml.
k. Hard shell reservoir should have cardiotomy filter and defoaming part
l. Hardshell reservoir should have venous filter with pore size 45±2mm
m. The hardshell reservoir should have
Venous blood inlet port ½²
Blood outlet port (to pump) ⅜²
Suction ports (six) ¼²
Vertical port to CR Filter ¼²
Quick Prime port ¼²
Auxillary port ¼²-⅜²
n. Sustainable negative pressure should be 150±10mmHg.

40. SPECIFICATIONS FOR PEDIATRIC ARTERIAL FILTER WITH BYPASS LOOP: (no. 5)

1 The Arterial Filter should be for pediatric use.
2 Priming volume should not be more than 90ml
3 Filter pore size should be 40 micron.
4 The outlet and inlet blood posts should be 3/8².
5 The filter should allow maximum blood flow rate of 5.0L/min.
6 The filter should be provided with a bypass loop at the inlet and outlet port.

41. SPECIFICATIONS FOR CARDIOPLEGIA HEAT EXCHANGER (BCD): (no. 15)

1 It should have priming volume less than 50 ml.
2 Blood flow rate should be between 0-600 ml/min
3 Filter screen should be around 100 um.
4 Inlet connection should be ¼²and outlet connection should be 3/16².
5 Heat exchange surface area should be ≈.20m^2.
6 Heat exchange should be of stainless steel corrugated pipes.
7 Bubble trap should be integrated for highly efficient de-bubbling
8 Integrated by pass manifold for easy de-bubbling
9 Exchangeable water in /water out
10 Blood flow path bottom up
11 It should have a Stopcock Prime/ Perfusion for easy priming.
12 It should have tip in the surgeon pack so that it can be connected to cardioplegia cannula.
13 It should be available both in 4:1 and 1:4 configuration.

42. SPECIFICATION FOR PEDAITRIC HEMOCONCENTRATOR: (no. 5)

1 It should have priming volume approx 35ml.
2 Effective surface area of the Fibers should be approx 0.5m2.
3 Blood port should be ¼²with Luer locks.
4 Filtrate port should be ½².
5 Maximum Transmembrane Pressure should be 500mm Hg.
6 It should have tubing lines along with reservoir Bag.

43. SPECIFICATION FOR ADULT HEMOCONCENTRATOR. : (no. 10)

1 The priming volume should be 70 ml
2 Effective surface area of the fibres should be ≈1m2.
3 Blood port should be ¼² With Luer locks
4 Filtrate port should be ½² (1/4²adapter).
5 Blood flow range should be 100-500ml.
6 Maximum Transmembrane pressure should not be more than 500mm Hg.
7 It should have tubing with reservoir bag.

44. SPECIFICATION FOR NEONATAL HEMOCONCENTRATOR: (no. 2)

1 It should have priming volume less than 20 ml.
2 Membrane surface area should be ≈0.2m2.

3 Max Membrane pressure should not be more than 600mm Hg.
4 Capillary wall thickness should be ≈50um.
5 It should have inlet/outlet lines, male luer lock connections,filter safety cap, filtrate line and additional filtrate bag (200ml).

45. SPEICIFICATION FOR PEDIATRIC OXYGENATOR: (no. 5)

1 Priming volume should be less than 150ml.
2 Blood flow range should be 0.4±0.01ltrs/min.
3 Oxygen transfer should not be less than 250ml/min.
4 Pressure drop should be least-upto 100mmHg or less.
5 Heat exchange efficiency should not be less than 0.65.
6 Housing material should be of polycarbonate.
7 Surface area of the fibres should be approx 1.0m2.
8 Heat exchanger should be made of stainless steel and surface area should be approx 1300cm2.
9 Blood inlet port 3/8²
Blood outlet Port 3/8²
Cardioplegia port 1/4²
Gas Inlet Port 1/4²
Gas Outlet port 1/4²
Water Port 1/2²
Maximum Pressure Blood inlet 1000mmHg
Water Inlet 42 PSI
10 Blood Storage capacity of hard shell reservoir should be max 3000ml.
11 Minimum operative volume of hard shell reservoir should be 100ml.
12 Hardshell reservoir should have cardiotomy filter and defoaming part.
13 Hardshell reservoir should have venous filter with pore size should be 20mm
14 The hardshell reservoir should have
Venous blood inlet port 3/8² rotatable
Blood outlet port (to pump) 3/8²
Suction port(six) ¼²
Vertical port to CR filter 3/8²
Quick prime port 1/4²
Auxillary port 3/8².

46. SPECIFICATION FOR CUSTOM TUBING PACK

1. Custom Tubing Pack **Adult: (nos. 15)**
   Custom Tubing Pack with arterial filter with PVC tubing medical grade -6.
   Filter/Tubing should be CE/USFDA Approved.
2 Custom Tubing Pack **Pediatric: (nos. 5)**
   With PVC tubing medical grade – 6
   Filter/Tubing should be CE/US FDA Approved
3 Custom Tubing Pack with **Neonatal** arterial filter**: (nos. 2)**
   With PVC tubing medical grade-6
   Filter/Tubing should be CE/USFDA Approved
4. Custom tubing pack with 3/16²arterial and ¼² venous line for **Small neonates: (nos. 2)**
   Made from medical grade-6 PVC.
   Filter/Tubing should be CE/USFDA approved.

47. SPECIFICATION FOR NEONATAL OXYGENATOR: (nos. 2)

1 Blood flow range should be 0.1 – 2 ltrs/min.
2 Priming Volumes should be around 40 ml.
3 Oxygen transfer should be minimum 100 ml/min.
4 Pressure drop should be least upto 100mmHg or less.
5 Heat exchange efficiency should not be less than 0.65.
6 Housing material should be of polycarbonate.
7 Surface area of the fibers should be ≈0.5m2 and material should be microporous polypropylene.
8 Heat exchanger should be made of stainless steel and surface area should be approx 0.035m2.
9. Blood inlet port (from pump) ¼²
Blood outlet port ¼²
Luer port (for recirculation or blood cardioplegia) one luer lock on blood outlet
10. Gas inlet port ¼²
Gas outlet port 5/16²
Water ports ½²
Maximum pressure Blood inlet 1000mmHg
Water inlet 2Kgf/cm2
11. Blood storage capacity of hard shell reservoir should be 1000ml
12. Minimum operating volume of hard-shell reservoir should be 15ml
13. Hard-shell reservoir should have cardiotomy filter and defoamer
14. The hard-shell should have
15. Venous blood inlet port ¼²
Blood output port (to pump) ¼²
Suction port (five) 3/16²
Quick prime port ¼²
Vent port ¼²
Auxiliary port ¼²-3/8²
16. Maximum sustainable negative pressure in reservoir -150mmHg.

48. **Disposable Bull dog Clamps (All sizes) : (5 set all shapes & sizes)**

Single use bulldog clamps are lightweight, cost-effective alternative to metal bulldog clamps. Unlike metal bulldog clamps (whose clamping pressure changes with use).

Single-use bulldog clamps offer preset tensions, ensuring consistent clamping pressure with each use.

Single Use Bulldog Clamps Features:-

*Two designs – straight and angled.

*Lightweight, cost-effective and plastic construction.

*A wide range of preset, consistent clamping pressures.

*Color-coded-by clamp size and pressure. *Single-use, sterile packaged.

*Atraumatic-Jaw designs *Radiopaque and Latex-safe

*Versatile-may be applied by hand or with the specially designed appliers.

* Size to be determined after demonstration of the product

49. Disposable Silicone Vessel Loops : (nos. 30)

Designed to assist surgeons in complicated surgical fields by providing retraction, occlusion and identification of arteries, veins & nerves .

*Unique design –provide access to complicated surgical fields.

*Versatile –can retract and occlude arteries, veins & nerves.

*Durable –retains preset tension.

*Radiopaque and Latex-safe.

50. Arterial Perfusion Cannulae. : (nos. 15)

Non-wire reinforced beveled tip.
Size 18Fr, 20Fr, 22Fr and 24Fr.
Overall lengthshould be approx.15cm with suture bump.

51. Arterial Perfusion Cannulae Pediatric: (nos. 5)

Sizes: 8Fr, 10Fr,12Fr,14Fr and 16Fr.
Non wire reinforced bevel tip.
Overall length 18cm with suture bump.
Thin Flexible wire reinforced straight open light house tip.

52. Venous Cannulae Single Stage: (nos. 5 each)

Overall length approx.28cm with ¼ acceptance
Size 12Fr, 14Fr and 16Fr.

53. Venous Cannulae Single Stage: (nos. 5 each)

Thin Flexible wire reinforced straight open light house tip.
Overall length approx. 35cm with ¼²and 3/8² acceptance.
Size 18Fr, 20Fr, 22Fr and 24Fr.

54. Venous Cannulae Single Stage: (nos. 5 each)

Thin flexible wire reinforced straight open light house tip.
Overall length 35cm with 3/8² acceptance.
Size 26Fr and 28Fr.

55. Venous Cannulae Single Stage: (nos. 5 each)

Thin Flexible wire reinforced straight open light house tip.
Overall length should be approx.40cm with 3/8² acceptance.
Size 30Fr, 32Fr, 34Fr,36Fr, 38Fr and 40Fr.

56. Venous Cannulae : (nos. 5)

Right Angled, wire reinforced , 90^0 angled, plastic tip, 10Fr.

overall length approx. 28cm and ¼² acceptance.

57. Venous Cannulae : (nos. 4 each)

Right Angled, wire reinforced, 90^0 angled, plastic tip,
12Fr, 14Fr and 16Fr.
Overall length should be approx. 33cm with ¼ th& $3/8^{th}$ acceptance.

58. Venous Cannulae : (nos. 4 each)

Right Angled, wire reinforced, 90^0 angled, plastic tip
18Fr and 20Fr.
Overall length should be approx. 35cm with $3/8^{th}$ acceptance.

59. Venous Cannulae: (nos. 4 each)

Right Angled, wire reinforced, 90^0 angled, plastic tip.
22Fr, 24Fr and 28Fr.
Overall length should be approx.38cm with $3/8^{th}$ acceptance.

60. Retrograde Cannula: (nos. 5)

self inflating catheter, smooth balloon with pre-shaped stylet and handle
14Fr. Overall length should be approx. 27cm.
Should have 18±2 mm sized smooth balloon.

61. Aortic Perfusion Cannulae: (no. 10 each)

wire reinforced, dispersion tip
Sizes: 21Fr and 24Fr
Overall length approx. 35cm and vent.

62. Dual Stage Venous Cannulae: (no. 10 each)

wire reinforced 32/40Fr and 36/51Fr.
Overall length should be approx. 40cm and1/2 acceptance.

63. Femoral Arterial Cannulae: (no. 2 each size)

wire reinforced,
Overall length should be 19.5±.2 cm with $1/4^{th}$ vented connector
Sizes: 8Fr,10Fr, 12Fr and 14Fr.

64. Femoral Arterial Cannulae: (nos. 2 each size)

Wire reinforced,
Overall length should be approx. 24cm with $3/8^{th}$ vented connector
Sizes: 16Fr, 18Fr and 20Fr.

65. Femoral Venous Cannulae : (nos. 2 each size)

wire reinforced
Overall length should be approx. 24cm with ¼thnon vented connector.
Sizes 8Fr, 10Fr, 12Fr and 14Fr.

66. Venous Femoral Cannulae: (nos. 2 each size)

wire reinforced
Overall length should be 75±2 cm with 3/8th non vented connector
Sizes: 18Fr, 20Fr,22Fr, 24Fr and 28Fr.

67. Ante-grade Cardioplegia cannula: (nos. 15 each size)

With vent and without vent.
Sizes : 12/14/16 Fr.

68. Specification for ADULT OXYGENATOR: (no. 15)
(Integrated with arterial filter & heat exchanger):

1 Oxygenator should have integrated arterial filter with cardiotomy/ venous reservoir.
2 Should have integrated arterial filter with self venting technology.
3 Heat exchanger surface area should be no more than 0.2m2.
4 Venous filter should be< 50micro meter.
5 Priming volume should not be more than 300ml.
6 Blood flow range should be 0.5 to 7 LPM.
7 Heat exchange efficiency should not be less than 0.50 at max flow.
8 Pressure drop should be minimum up to 110 mmHg or less.
9 Arterial filter should be <35micron meter.
10 Membrane surface area should be 2-2.5 m^2.

69. Specification for SMALL ADULT OXYGENATOR : (nos. 5)
(Integrated Filter and Heat Exchanger):

1 Oxygenator should have integrated arterial filter with cardiotomy/venous reservoir.
2 Should have integrated arterial filter with self venting technology.
3 Heat exchanger surface area should be no more than 0.14m2.
4 Venous filter should be <50micro meter.
5 Priming volume should not be more than 150ml
6 Blood flow range should be 0.5 to 5 LPM.
7 Heat exchange efficiency should not be less than 0.5 max flows @ 5 LPM
8 Pressure drop should be minimum up to 110 mmHg or less.
9 Arterial filter should be<35micro meter.

70. Specification for PAEDIATRIC INFANT OXYGENATOR: (nos. 4)
(Integrated Filter and Heat Exchanger):

1 Oxygenator should have integrated arterial filter with cardiotomy/ venous reservoir.
2 Should have integrated arterial filter with self venting technology.
3 Heat exchanger surface area should be no more than 0.035m^2.
4 Venous filter should be<50micro meter.
5 Priming volume should not be more than 45ml.
6 Blood flow range should be 0-1.5Ltrs/min.
7 Heat exchange efficiency should not be less than 0.6 at max flow.
8 Pressure drop should be minimum up to 100mmHg or less @ 1.5 LPM
9 Arterial filter should be<35micro meter.

71. CARDIOTOMY VENOUS RESERVOIR :

ADULT : (nos. 15)
PAEDIATRIC: (nos. 4)
NEONATAL : (nos. 4)

72. DISPOSABLE CONNECTOR ALL SIZES; Y, STRAIGHT WITH AND WITHOUT LEUR LOCK: (nos. 15 each)

73. DISPOSABLE SINGLE TUBING ALL SIZES (1/2, 3/8th,1/4th,3/16^{2}): (nos. 10 each)

74. WIRE ENFORCED ARTERIAL CANNULA (6 FR TO 20 FR) : (nos. 2 each)

Group B: PROSTHESIS (Valves and Rings)

81. ANNULOPLASTY RING FOR TRICUSPID VALVE REPAIR: (no. 1 set of all sizes)

· Low profile Ring, Sizes 26mm,28mm,32mm,34mm,36mm.
Sterile double packed tricuspid Rigid ring with an anterior gap with polyester of PTFE cloth with marking for commissures .should have an oval shape and opening for AV node .
· Should be incomplete ring to avoid interference in conduction system, height should be less than 3.5mm.
Should have titanium core encapsulated with silicone and covered with polyesterfabric. Septal lateral compression.
Should be both CE & US-FDA Approved.

82. RIGID REMODELING RING FOR MITRAL VALVE REPAIR: (no. 1 set of all sizes)

Sizes: 24mm,26mm,28mm,30mm,32mm,34mm,38mm,40mm
Sterile double packed rigid ring complete or with anterior gap with polyester or PTFE cloth with marking for commissures.
·. Should have physiologic mitral valve shape. 25%Annular height to commissural width ratio anterior, 15% Annular height to commissural width ratio posterior. Should have saddle shape and polyester knit covering with
Titanium/silicone core.
Should be both CE & US-FDA Approved.

83. ANNULOPLASTY MITRAL RING FLEXIBLE: (no. 3 set of all sizes)

· Fully flexible ring/band.
Should have X-ray visibility.
Should have both CE and US-FDA approval.

· Wide range of sizes - 25mm-35mm.

84. IMR ANNULOPLASTY RING: (no. 1 set of all sizes)

· Should have a complete rigid ring. To be constructed of a strong, durable alloy. Should have a Increased sewing margin in the P2-P3 region, should be marked with suture and designed to accommodate a double suture row. Should have a Dipped P3 region to accommodate higher stresses from downward LV displacement. Should have a Convenient holder/handle to increase ease of use & operative efficiency .

Sizes: 24, 26, 38, 30, 32mm

· Should be US-FDA APPROVED.

85. 3-D TRICUSPID ANNULOPLASTY RING: (1 set of all sizes)

· Should be a rigid annuloplasty ring with three dimensional shape and with an incomplete ring shape to avoid the sensitive conduction system.Should have a downward angle in septal region to help reduce the stress on sutures and the risk of ring dehiscence.

Sizes: 26,28,30,32,34mm.

· Should be US-FDA APPROVED.

86. ARTIFICIAL HEART VALVE BILEAFLET MITRAL: (2 set of all sizes)

· Rotatable design, leaflets made up of Pyrolytic carbon / standard durable alloy and polyester sewing cuff.

· · Should have open pivot Bi leaflet mechanical Heart valve with 75- 90 degrees opening angle

· Should have low profile height.

· Should have minimum vertical leaflet exposure to result in NO LVOT obstruction

· Should have greater posterior wall clearance

· Wide range of sizes from **23mm – 37mm**

· Should have both CE and US - FDA approval.

87. ARTIFICAL HEART VALVE BILEAFLET AORTIC: (2 set of all sizes)

· Rotatable design, leaflet made up of Pyrolytic carbon and polyester sewing cuff.
With pivot guard design and leaflet opening angle.

· Should have open pivot Bi leaflet mechanical Heart valve with 75- 90 degrees opening angle

Should have low profile height. Should have
minimum vertical leaflet exposure to result in NO LVOT obstruction. Should have greater posterior wall clearance.

Wide range of sizes from **17mm; 19mm-31mm**.

Should have both CE and US-FDA approval.

88. BILEAFLET AORTIC VALVE WITH CONDUIT: (1 set of all sizes)

· Should have double velour woven graft. Should be collagen impregnated to control

hemostasis and reduce the hemorrhagic complications. Should have mechanical heart valve with low pressure gradients. With pivot guard design and leaflet opening and >80 degrees. Cuff design should enhance implantability. Should have minimum taper conduit to facilitate strong coronary anastomosis. Should not have any pleats to allow easier positioning and attachment of the coronary arteries.
Wide range of sizes from **19mm- 33mm.**
Sh ould have both CE and US-FDA approval.
Dacron graft of 3mm.

89. TISSUE HEART VALVE : (no. 2 set of all sizes)

· Should have stented, triple composite design with separate **Pericardial** leaflets to optimize leaflets cooptation and reduce stress. Should have anti-calcification treatment to reduce calcification. Low profile height.
In **Aortic** position should be available in sizes **19mm-31mm.**
In **Mitral** position should be available in sizes **25mm to 33mm.**
Should have both CE and US-FDA approval.

90. BIO PROSTHESIS STENTED PORCINE VALVES: (3 set of all sizes both Aortic & Mitral)

· **Aortic Sizes** 19mm,21mm,23mm,25mm,27mm,29mm,
· **Mitral Sizes** 25mm,27mm,29mm,31mm,33mm
· Should be third generation native asymmetrical **Porcine** tissue valve, more than fifteen year durability clinical data, should have standard tissue treatment
should have tT-6 anti calcification treatment to mitigate calcification
& Annular / supra annular implant position with
advanced cinch II implant system with automated deflection of stent posts.
physiological fixation to preserve leaflet function which facilitates open leaflet in systolic position, should have flexible acetyl homopolymer stent &convenient implant system.
Should be both CE & US-FDA Approved.
Long term usage data.

Note:

- CE should be mentioned on each product.
- Product should be of high quality and standard.
- All products should be in a pre-sterilised packing.
- All products should be **European CE and USFDA** approved. Copy of certificate is to be enclosed with bid.
- Demonstration of all products is must for evaluation.
- Must submit user list and performance report **within last 5 years from major hospitals**
- Manufacturer should ISO certified. Copy of certificate to be enclosed.
- Bidder should quote for all the products.

(13) SPECIFICATION OF INFUSION PUMPS(Qty. 20 nos)

Should have three kinds of modes: Rate Mode, Time Mode, and Body Weight Mode.

- Should have unique door free structure: Avoiding problem of pump stock and fluid leakage.
- Should have Double CPU: making the process of injection safer and more reliable.
- Should have accurate infusion: Precise control of the infusion rate & infusion volume.
- Should have Flow rate range: 1.0ml/h-2000ml/h.
- Should have driven & step motor: No pulsating wave will be reduced even during low rate infusion.
- Should have Alarm is given in the following situations: Infusion Completion, Occlusion, Low battery, Air bubble, Installation error when there is malfunction or operation error, and the machine stops running automatically.
- Should have KVO rate can be selectable according to concrete requirements from 1.0ml/h to 5.0 ml/h.
- Should have Wireless Module Control: When used with SK data collector terminal, the infusion information will be transferred to the infusion supervision system in order to ensure the patients safety.
- Should have Displayed information: Rate, Vol Limit, Battery charge indicator, AC power indicator, Over, OCCL, Air, Bed no.
- Should have Infusion rate range: 1.0 – 2000ml/h.
- Should have Batter Accumulated injection volume 0.1ml-9999.9ml.
- Should have Infusion accuracy: +_ 3%

Description

1 . Description of Function

1. Syringe Infusion Pump provides uniform flow of fluid by precisely driving the plunger of a syringe down its barrel. It provides accurate and continous flow rate for precise delivery of I.V. medication in critical medical care.

2 . Operational Requirements:

2.1 The syringe pump should be programmable, user friendly , safe to use and should have battery backup and comprehensive alarm system. This should be able to integrate in the HIS

2.2 Demonstration of the equipment is essential.

3 Technical Specifications:

3.1 Flow rate programmable from 0.1 to 1000 ml/hr or more in steps of 0.1 ml/hr with user selectable flow set rate option. SAVE last infusion rate even when the AC power is switched OFF.

3.2 Bolus rate should be programmable to 40 – 500 ml/hr or more with infused volume display. Reminder audio after every 0.5 ml delivered bolus. SAVE last Bolus rate even when the AC power is switched OFF.

3.3 Display of Drug Name with a provision of memorizing 10~15 names by the operator

3.4 Keep Vein Open (KVO) must be available 1.0 ml/hr or set rate if lower than 1.0 ml. User should have choice to disable KVO whenever desired.

3.5 Selectable Occlusion pressure trigger levels selectable from 300/500/900 mmHg

3.6 Must Work on commonly available ISI/CE/FDA APPROAVED/CERTIFIED 20, 50/60 ml Syringes with accuracy of minimum of +/-2% or better.

3.7 Automatic detection of syringe size & proper fixing. Must provide alarm for wrong loading of syringe such as flanges out of slot; disengaged plunger, unsecured barrel etc.

3.8 Anti bolus system to reduce pressure on sudden release of occlusion

3.9 Should have comprehensive alarm package including:Occlusion limit exceed alarm ,Near end of infusion pre-alarm & alarm,Volume limit pre-alarm & alarm,KVO rate flow,Low battery pre-alarm and alarm,AC power failure, drive disengaged and preventive maintenance.

3.10 Rechargeable Battery having at least 5~6 hour backup for about 5ml/hr flow rate with 50ml syringes. Larger battery life and indication of residual life will be preferred.

4. **System Configuration Accessories, spares and consumables**

4.1 Syringe Infusion Pump -01

4.2 Mounting device/ Docking Station for two or four pumps as per requirement so as to enable to power up to 2-4 pumps with one power cord when mounted on IV pole. -01

5. **Environmental factors**

5.1 Shall meet IEC-60601-1-2 :2001(Or Equivalent BIS) General Requirements of Safety for Electromagnetic Compatibility.

5.2 The unit shall be capable of operating continuously in ambient temperature of 10 -40deg C and relative humidity of 15-90%

5.3 The unit shall be capable of being stored continuously in ambient temperature of 0 -500 C and relative humidity of 15-90%

6. **Power Supply**

6.1 Power input to be 220-240VAC, 50Hz

7. **Standards, Safety and Training**

7.1 Should be FDA or CE approaved product

7.2 Electrical safety conforms to standards for electrical safety IEC-60601-1 General Requirements

7.3 Manufacturer should be ISO certfied for quality standards.

7.4 Certified for meting IEC60601-2-24:Particular requirements for the safety of infusion pumps and controllers

7.5 Should meet IEC 529 Level 3 (IP3X)(spraying water) for enclosure protection , water ingress.

7.6 Electrical Safety Classification Class I/II, Type CF and Internally powered equipment.

7.7 Certified for meeting IEC 60601-1-4 Medical electrical equipment - Part 1-4: General requirements for safety - Collateral Standard: Programmable electrical medical systems

7.8 Comprehensive warranty for 3 years and provision of CMC for next 7years.

7.9 Should have local service facility .The service provider should have the necessary equipments recommended by the manufacturer to carry out preventive maintenance test as per guidelines provided in the service/maintenance manual.

8. **Documentation**

8.1 Certificate of calibration and inspection from factory.

8.2 List of Equipment's available for providing calibration and routine maintenance support as per manufacturer documentation in service / technical manual.

8.3 User Manual in English

8.4 Service manual in English

8.5 Log book with instructions for daily, weekly, monthly and quarterly maintenance checklist. The job description of the hospital technician and company service engineer should be clearly spelt out.

8.6 List of important spare parts and accessories with their part number and costing.

8.7 User list to be provided with performance certificate.

8.8 Performance report in the last 3 years from major hospitals should be enclosed.

Group-D-ENT

1:- ESOPHAGOSCOPY:-

a. **Rigid esophagoscope Jackson type:- one;**
   Length : 50 cm, inner diameter: 10: 7x12.6mm,outer diameter: 12.2mmx 16.2mm
b. **Rigid esophagoscope Juction type: one**: Length : 30cm,Inner Diameter: 10.7mm x 12.6mm, outer Diameter: 12.2mmx16.2mm
c. **Rigid esophagoscope Juction type: one:** Length : 20cm,Inner Diameter: 8.7mmx10.6 mm, outer Diameter : 10.2mmx 14.2mm
d. **Foreign body forceps : one set:** For metallic, vegetable foreign body and denture
e. **Suction tube: One set:** Compatible to esophagoscope

2:-BERA with otoacoustic emission and ASSR:- Omitted

3:- Diagnostic Endoscopic System consisting of:-

a. **Rigid Sinoscope:-** 01
   - O° Straight forward telescope
   - Rod lens system
   - Wide angle / enlarged view
   - Diameter 4mm, length 18 cms.
   - Autoclavable

b. **Rigid Laryngoscope:- 01**
   - 70 degree telescope
   - Rod lens system
   - Wide angle/enlarged view
   - Diameter 6 mm, length 18 cms
   - Autoclavable

c. **Rigid Otoscope:-01**
   - 0^0 telescope
   - Rod lens system
   - Wide angle / enlarged view
   - Diameter 2.7 mm, length 11 cms.
   - Autoclavable

d. **Flexible nasolaryngoscope:- 01**

e. **Cold light fountain xenon Nova.01**
   power supply: 220-240 VA output: xenon light 175 W 15V

f. **Fiber optic Light carrier: 01**-
   Glass fibre type, 2.5mm diameter length 180cms

g. **Endovision Tricam SL II-01**-
   - Three chip endoscope camera
   - Color system ;PAL - Integrated parafocal zoom
   - **Lens f**= 14mm -28mm
   - Programmable buttons
   - Camera head autoclavable

h. Camera Cantrol unit:- 01- Image 1 camera control unit with DV output (didital video)

- Key board attachment
- Signal to noise ration>or=60Db
- Video output : composit signal to BNC socket, |S video signal to 4 pin mini DIN socket,RBG.
- DV signal to socket

i. DVD recording facility :- 01-

- Record digital video from camera control unit.
- Pentium duo core based system
- 1 GB RAM
- 200 GB HDD SATA
- 17 Inch TFT monitor "Sony"
- Sony DVD RW drive
- Pinnacle image capture card.

3: Diagnostic Microscope :01

4: 300 W Xenon light sources:01

5: Fee Devise Carrying Trolley:01

Group- E- Cardiology

(1)BIPAP Machine

BiPAP machine stands for Bilevel positive airway pressure. It is used in paitients with respiratory distress to push more air into their lungs .

Technical Specification:

The system should match all the numerical values given in technical specification with +/- 10%

IPAP	4-40 cm H_2O
EPAP	4-25 cm H_2O

Breath Rate 0-40 with spontaneous for time mode.
Inspiratory time 0.5 – 3 sec.

Rise time 100-600 ms
Machine should be based on solenoid valve technology and should have autotrack sensitivity and adjustable right time
Machine should have C PAP facility.
System should be supplied with all the reusable accessories.
Enviormental Factors
System should have CE approval.
System should be capable of operating continuously in ambient temperature of 20-30 deg Celsius with relative humidity of 15-90%
The unit shall be capable of being stored in ambient temperature of 0-50 deg C at relative humidity of 0-90%
Power Supply
Power into be 220-240 V AC, 50 Hz with Indian plug.
UPS of suitable rating for voltage regulation, spoke protections and automatic back up of 60 minutes.
Standerd, safety and Training
Should be CE & FDA approved.
Manufatured should have ISO certification.
Comprehensive training to the tab staff be given till familiarity with the device.

(2) Cardiac Biomarker Analyser

(Multi Parameter)

Latest point of care machine for various cardiac Biomarkers (TupI, TuPT ,D.Diner BNP,CKMB , Myoslplim)
Any additional plates should be mentioned.

(3)Temporary Pace maker Generator

Modes; VVV,VVo
Pacing Rate; 40 -180 ppm continuously adjustable
Output Amplitude : 0.1 -20 mA continuously adjustable
Pulse Width : ms
Sensitivity : 0.5 -20 mV continuously adjustable ASYNC
Refcatory: 225-250 ms

Battery type : Standard 9V Alkaline/Lithium
Should be CE and FDA approved product

Group- F- Nephrology-

2D USG with ECHO

TECHNICAL SPECIFICATION FOR PORTABLE 2D USG WITH ECHO

The Unit must be fully digital and enable use at points of care should have battery backup.

The Unit must have following facilities:-

- Black and white mode for displaying anatomy in real time.
- Color- coded overlay for real time blood-flow imaging.
- Wait of the unit should be less than 8 kg.
- Field-of-view of black and white imaging : up to 75 degree with maximum depth of 25 cm.
- The color flow sector for blood flow with angel of 30 degree.
- Board-bandwidth phased array probe transuder technology for 2D, color and Doppler imaging.
- Auto optimize adjusts gain for all depths automatically.
- Built in memory card for storage of not less than 40 GB.
- Presets for optimized setting for imaging cardiac, general imaging, abdominal and kidney imaging with biopsy guide.
- 2D, color Doppler imaging.
- Probe adult and paediatric (Curved, Linear, Doppler, Echo).
- Full dicom connectivity.
- Automatic tissue optimization.
- High friends rate and color enhanced flow.
- Screen> 15 inches. LCD/LED.
- Anatomical M mode.
- Quote one & latest model only.
- UD FDA approved.

Machine to be supplied with following :-

- One rechargeable battery.
- Ac adopter with inter chargeable plugs to charge the scanner.
- Carrying Bags.
- Micro memory card/external hard disk should be provided.
- Docking station/ trolley.
- Thermal printer.
- Probes as specified.
- Kidney biopsy needle guide bracket set with spare needle guide.

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Group- G- Microbiology-

Specification for Real Time PCR

- A compact automated latest real time PCR system for in vitro diagnostic (CE-IVD marked & certified) application.
- The table top open ended system on which diagnostic parameter for diseases like Influenza A&B, HBV, HCV, CMV, Inf, HIN1, MTbC,HSV1 & 2 and genetic testing should be available with the manufacturer.
- Sample format should support Peltier blockOR Rotary Disc, enabling use of both 0.2 ml and 0.1 ml PCR tubes/ Strips with disc/well format.
- Temp range should be from ambient to 99^0C; temp Uniformity must be ± 0.02^0C
- Fast cycler with high ramping rate should be more than 10^0C for heating and 8^0C for cooling to enable fast cycling protocols.
- Excitation source should be with either multiple LED's or CCD with long life span and short optical path, supporting multiple wavelengths with minimum cross talks and detection by either PMT or photodiode.
- System should at least perform five colour of multiplexing.
- System must be open platform capable of performing chemistries like SYBR GREEN, Hydrolysis probes, FRET, simple probes etc. Use of ROX dye to generate data is to be optional.
- The system should not require optical alignment or calibration, for easy transfer from one lab to other.
- System must allow use of sample volumes in the range of 10-50ul with Linear Dynamic Range should be of 10 orders magnitude
- System should be provided with appropriate analysis workstation, along with comprehensive software package and easy-to-use. Raw data export for validation purposes, various results report and export functions.
- System must be supplied with a high throughput Tissue Disruption system for processing of up to 192 samples at a time. System should be imported one with minimum 25 user in India.
- The real time software should be provided with unlimited user licenses with individual user management and capable of digital signature for very result file.

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(2)Technical Specification of 4 feet Biological Safety Cabinet Class II, Type A2

- 4 Feet Biosafety Cabinet Class II, Type A2 Quoted model must be NSF certified for 230 volt, 50 Hz complete stainless steel interior is a must (all the interior walls must be in stainless steel only (No walls to be in Glass / Carbon Steel/ MS Painted Steel)
- Front sash window has to be 10 degree slope to avoid reflection.
- Interior- Mounted, Line-of sight LCD display with Filter Life Remaining bar graph and status Line for alarm conditions and alerts to warn filter remaining life in percentage (ADA Compliant) filter life calculation should be based on the real loading of the filter and not just a mere timer / hour counter.
- Blower motor should be single ECM motor of High torque (0.5 HP / 42 Ounce-Inches) of the latest technology which consumes less energy (240 watts) generates less heat (67) BTU/Hour), noise level 62 DBA (Measured as per NSF standards 15th above the work surface and 12"in front of the unit.) & has long motor life i.e. 50,000 Hours.
- System should have the ability to automatic compensation the blower motor speed against the filter load for the full life of the filter without any manual human intervention. System should also automatically compensate for low and high voltage an maintains proper blower speed.
- Smart-Start system that allows the user to program start up an shut down operations with the touch of a single switch
- Night-Smart System that idles the blower when the sash is full closed and yet maintains the airflow conditions inside the cabinet.
- Built-in interval or elapsedtimer for experiment monitoring or UV light control.
- 304 stainless steel dished work surface with lift out knobs & Towel catch located under work surface. Intrinsically safe negative pressure design.
- Contain-Air Negative Pressure Channel ensuring Class 5 conditions per ISO 14644-1 and 2 (formerly Class 100) along with supply and exhaust 99.99% efficient HEPA filters.
- Two electrical duplex receptacles, (Single outlets on 230 volt models), located one on each side, with ground fault interruption an stainless steel splash covers
- Front sash must be with 10® slope for better viewing.
- Bright 100 foot-candle, glare-free fluorescent lighting located outside the contaminated work area
- Electronic security lick that requires code to operate the cabinet so that unauthorized persons do not use the cabinet
- RS 232 for connection of PC to monitor and record cabinet performance data Base stand for Biosafety Cabinet to be included.
- All other accessories to be offered as optional. Shipment by air. Technical Literature to be provided complying with the specifications.

(3)SPECIFICATION FOR CO2 INCUBATOR

- Chamber volume : 190 liters or higher with Stainless steel Interior Chamber in SS316 L for highest quality with at lest 4 shalves.
- PID Touch Screen Controller
- Auto-Sterilization at 180 Deg C or higher.
- Humidity control (@37°C+5%) up to 95%.
- Six side direct heat system with independent door heaters to prevent condensation on inner glass door.
- Fanless system for reduced risk of contamination.
- Control screen can show the data (of temperature and co2) in graphical format for the last 72 hours.
- Infra Red CO2 Sensor for control from 0-20% with accuracy of +/- 0.1%, sensor have to be drft free so that no auto zeroing is required.
- HEPA Filtered CO2 Gas intel.
- Co2 supply failure to incubator indicator and alarm.
- Built in door opening Alarm, CO2 pressure regulator to insure optimum CO2 recovery after door opening, high & low temperature & CO2 Alarms, fully adjustable by user.
- **Temperature Control:** at least 5Deg C above ambient to 60Deg C with an accuracy +/- 0.1 Deg C at 37 Deg C.
- Independent safety over temperature cut-out and quotes model should be ISO and CE certified.
- Power requirement 230 volts 50 Hz.

(4)Binocular Microscope

1	Maintenance free , minimum one year warrantee, focusing mechanism by ball bearing movement by uniaxial focusing control for both coarse and fine adjustment (single uniform speed for precision focusing movement) having the following properties in details. Optical system universal infinity system. Illumination:- High luminescent white LED illuminator 6V20W halogen lamp, compliant multi-voltage (100V-240V) minimum 50,000 hrs. of Focusing: Coaxial coarse/fine focusing, Focusing stroke: 20 mm, fine: 2.5 micron Tube: Binocular tube Nosepieces: Quadruple nosepiece (within main body) Stage: Rectangular mrchanical stage (within main body) with specimen holder, cross travel 76(x) 30 (y) mm Objectives: Precise centered anti-fungal eye piece plan Achromatic objective 4x, 10x,20x 40x& 100x (	

	spring loaded) Condensers: Abbe condenser NA. 1.25, Aperture diapharagm with position guide marking for respective objectives Observation methods; Brightfield, Darkfield, phase contrast Optional accessories: Phase contrast attachment, cold hanger, storage case. Alongwith camera or computer screen attachment	

Group-H-Anatomy

ANATOMY

1. Technical Specification for Semi Motorized Microtome:

- The Microtome should be manual cutting with disposable blade holder with disposable blades
- (Both High & Low Profile can be fitted) with following specifications:
- **The Section thickness range FINE 0.5 - 100µm with following increments:**
- 0.5µm increment from 0.5 - 2µm
- 1µm increment from 2 - 10µm
- 2µm increment from 10 - 20µm
- 5µm increment from 20 - 30µm
- 10µm increment from 30 – 40µm
- 20µm increment from 40 – 100µm
- **Section thickness range TRIM: 5 up to 500 µm**
- From 5 … 10 µm in 5 µm- increments
- From 10 …100 µm in 10 µm- increments
- From 100…200 µm in 20 µm- increments
- From 200…500 µm in 50 µm- increments
- Specimen retraction during return travel should be 40µm
- Horizontal feed range should be 28 mm
- Vertical specimen stroke 72 mm
- Section counter 5-digit, with reset
- Section thickness sum 5-digit, with reset
- Remaining travel to front end position 5-digit
- Specimen size: when using a standard specimen clamp 55 x 50 mm
- Specimen orientation: x - and y – axes with 8°
- Availability of ROCK Mode
- Rotation: up to 360°
- Cutting drive: manual by means of hand-wheel
- Coarse feed: motorized, graduated and continuous
- Speed for coarse feed: 400, 800 or 1200µm/s
- Storage Temperature range: -20°C up to +50°C
- Operating conditions: +5°C up to +40°C for indoor use only.
- With suitable Voltage Stabiliser (ISI certified)

2. Technical Specification for Automated Tissue Processor:

- Compact, bench-top carousel tissue processor
- Designed to process biological specimens from chemical fixation to paraffin infiltration.
- Unique design uses programmable gentle centrifugal force to augment normal vertical agitation process associated with carousel processors.
  - Immediate and delayed-start processing modes
  - Spin speed programmable from 0, 60 or 70rpm
  - Programmable immersion time in each station (from 1 minute to 99 hours and 59 minutes)
  - Basket capacity of 120 cassettes with optional second cassette basket and third paraffin bath: 220 cassettes
  - In-Built Battery back-up system in case of power failure
  - Reagent vessel tops and charcoal-enhanced ventilation help control processing vapors
  - Microprocessor unit can maintain up to 10 processing programs
  - Cassette baskets spin counterclockwise and clockwise within reagent container to improve processing

• Reagent carryover is reduced through centrifugal spinning of basket above reagent vessel 1.8L reagent volume for each vessel.

3. Technical Specification for Embedding Station:

The equipment should meet the following specifications:
1. Microprocessor controlled bench top unit with high specimen throughput.
2. Paraffin reservoir capacity should be a minimum of 3 liter
3. Paraffin reservoir temperature setting range from 45°C to 70 °C with +/- 1°C steps
4. Paraffin Wax level indication on display should be available.
5. Ample cold plate to accommodate at least up to 60 blocks.
6. Refrigerated spot integrated in cold plate to assist tissue orientation
7. Cassette bath to store at least up to 100 cassettes
8. Cassette tray should have the capacity to contain at least 6-8 cassettes
9. Mold warmer temperature programmable from 35°C to 70°C with +/- 1°C steps
10. Work surface temperature programmable from 45°C to 70°C with +/- 1°C steps
11. Paraffin reservoir, cassette bath, mold warmer and work surface temperature should be individually temperature adjustable.
12. Instrument should be programmable for workdays, work starting time, work end time, real time and day of the week for Automatic switch on/off of the instrument.
13. 1-way paraffin flow rate adjustment must be available up to 100% flow.
14. Illuminated workspace for clear visibility of the processing.
15. Activation of paraffin flow via foot switch or using the pressure clip should be available.
16. Spacious paraffin collection tray to collect excess paraffin from work surface should be available.
17. Separately heated paraffin dispenser with temperature 45°C to 70°C depending up on the paraffin reservoir should be available.
18. Suppliers should have a good number of installation base with efficient after sales support with proven track record. 19. The equipment should be USA- FDA/European- CE approved

4. Technical Specification for AUTO STAINER:

• With an easy-to-use touch-screen-on in-build monitor mounted on the instrument system schedules runs, allocates reagents, optimizes reagent plan and calculates most efficient route for each protocol
• Suggested staining protocols may be easily modified to lab procedures
• Auto-allocation optimizes reagent positions and efficiently uses available staining stations by calculating quickest throughput path with shortest moves for each basket
• Urgent Start gives user opportunity to priorities “urgent” baskets without compromising those already in process
• Auto-return allows user to recall any loaded basket to load door
• Step-start capabilities from any placement
• Quality Control and Safety Features
• Unit displays reagent usage and batch throughput
• Handles fume control with an easy-to-change carbon filter or through connection to an optional external vent adapter kit
• Procedures, reagent layout and a complete event log may be recorded on floppy disk or printed to optional printer for QC records
• Pass code protection secures operator’s customized protocols
• Power supply has a voltage range from 110 - 240V (±10%) and is strong enough to handle power fluctuations including surges, spikes and brownouts
• Battery backup with built in UPS provides approximately 40 minutes of power in the event of a power failure
Supplied complete with all standard accessories (8 Slide Holders, 6 Staining troughs, built in battery backup, instruction manual)

5. Technical Specification for WATER BATH :

• Thermostatically controlled inside stainless steel.
• Temperature ambient to 100c without racks and thermometer.
• Size; inside chamber 300x175 mm (suitable for 2 rakcs)
• High speed stirrer with stainless steel stirring rod and speed regulator.
• Microprecessor temperature controller with dual display achieve high accurrcy of +5c

6. Technical Specification for Bone Cutter

The equipment should meet the following specifications:
1. Used for cutting bone specimens and amputation specimens of big size
2. Should be fitted with a large moving table and extension table operated on four ball-bearing rollers.
3. Table made of thick stainless steel sheet with heavy axle to aid in firm and smooth movement
4. Size of cutting table should be about 78 × 58 cms
5. Total Table Travel about 124 cms Size of Extension Table should be about 45 × 76 cms
6. Size of Wheel should be about 45 cms The total Height not more than 170 cms
7. To be supplied with one blade, starter, electrical cord and hospital-grade plug and spare accessories
8. Should have a Bone dust collector unit and safety hood

7. Technical Specification for Bone Decalcified

5. Capacity up to 30 cassettes
6. W x D x H bench System 30X21X11cm and Solution reservoir 16X12.5X6 cm
7. Solution Volume upto 750ml
8. Bone section can be processed in just 15 minutes

8. Technical Specification for Pentaheaded Microscope:

1. Infinite Optical System.
2. 1 pc.of Compensation Free Trinocular Head, lnclined at 30, 360 Rotatable, lnterpupilary Distance 48-75mm
3. 4 pcs. of Compensation Free Binocular Head, lnclined at 30, 360 Rotatable, lnterpupilary Distance 48-75mm
4. 10 pcs. of Extra Wide Field Eyepiece WF10X/20
5. Infinite PLAN Achromatic Objective 4x, 10x, 40x & 100x
6. Double Layers Mechanical Stage 185x142mm, Moving Range 75x55mm
7. Inward Tilt Quintuple Nose Piece
8. Coaxial Coarse & Fine Focus Adjustment, Fine Division 0.002mm;
9. External illumination, Halogen Lamp 12V50W
10. Green LED Pointer, Brightness Adjustable

9:- Mortuary Cooler(6 Bodies)

Mortuary Cooler/Cabinet for storing 6 bodies

- Exterior & interior Pre-Painted GI Sheet
- Front finish in Stainless Steel
- Vapour-proof incandescent lamp
- Electronic Temperature indicator – cum controller
- 3- piece carriage assembly
- 1- piece carriage assembly
- Width: 2946mm, depth: 2362mm, Height: 1745mm,
- Height with cooli8ng unit & PCC Platform: 2215mm,
- Refrigeration System _ Unitary, type: RTU-10
- Temperature range: + 2* to +8* c.
- Power Supply: 230±10% /single Phase /50 Hz

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