BIDDING DOCUMENT

TENDER NOTICE No: 10/2020- 2021/Bio-Medical Equipment/IGIMS/Store

Supply, Installation & Commissioning of Bio-Medical Equipment's / Instruments

TENDER NOTICE No: 10/2020- 2021/Bio-Medical Equipment/IGIMS/Store

Issued to:

Cost of Document: **Rs.2500/-**

Paid By: Cash: Receipt No.:

Demand Draft: No.:

Issuing Bank:

(Authorized Signatory)

Bidding Document

Sl. No.	Group	Name of the Department
1.	Group B	Supply, Installation & Commissioning of Biomedical Equipments for State Cancer Institute-II
2.	Group C	Supply, Installation & Commissioning of Biomedical Equipments for the department of G.I. Surgery
3.	Group D	Supply, Installation & Commissioning of Biomedical Equipments for the department of Obstetrics & Gynaecology
4.	Group E	Supply, Installation & Commissioning of Biomedical Equipments for Laboratory Automation
5.	Group F	Supply, Installation & Commissioning of Biomedical Equipments for the department of CTVS
6.	Group G	Supply, Installation & Commissioning of Vehicle& Instruments for Mobile Ophthalmic Unit.
7.	Group H	Supply, Installation & Commissioning of RFID in Central Library.
8.	Group I	Supply, Installation & Commissioning of Biomedical Equipments for the department of Microbiology.
9.	Group J	Supply, Installation & Commissioning of Biomedical Equipments for the department of Transfusion Medicine.
10.	Group K	Supply, Installation & Commissioning of Biomedical Equipments for the department of Trauma & Emergency.
11.	Group L	Supply, Installation & Commissioning of Biomedical Equipments for the department of Hematology.

INDIRA GANDHI INSTITUTE OF MEDICAL SCIENCES,
SHEIKHPURA, PATNA - 800014.
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IMPORTANT DATES

1. **Name & address of advertiser** : Director, IGIMS, Sheikhpura, Patna -14
   P.O.-B.V. College, Patna 800014

2. **Date of issue of E-Tender notice** : **23/ 09/ 2020**

3. **Period for download of tender document only on** www.eproc.bihar.gov.in**.** : From **01/ 10 / 2020 to 07/ 11/ 2020** up to 12.00 hours through above website

4. **Last Date of pre bid Clarifications:** : In view of increased need to minimize possibility of community spread of ongoing COVID – 19 epidemics, physically pre-bid meeting will not be held. In case the bidders requires any clarification regarding the tender documents and proposed technical specifications, they are requested to contact our office (**e-mail:** storeofficer@igims.org) on or before **07/ 10/ 2020.**

5. **Last date & Time for submission / uploading of complete tender at** www.eproc.bihar.gov.in**.** : **07/ 11/ 2020** up to 17.00 Hours

6. **Last date, time and place for submission of hard copy of the Technical bid along with EMD & Tender Document Fee at Director's office, I.G.I.M.S., Patna by Speed / Registered post / Courier only** : **09/ 11 / 2020** up to 16.00 Hours, at Director IGIMS,- Patna-800014, P/O-. B. V. College Patna

7. **Date, Time and Place of opening of Techno Commercial bid only on** www.eproc.bihar.gov.in**.** : On www.eproc.bihar.gov.in
   a. **Group A & B on 10 / 11 / 2020 at 15.00** hours
   b. **Group C, D & E on 11/ 11/ 2020 at 15.00** hours
   c. **Group F, G & H on 12 / 11 / 2020 at 15.00** hours
   d. **Group I, J, K & L on 16 / 11/ 2020 at 15.00** hours

8. **Date, Time and Place of opening of price bid** : Date & Time will be communicated later on subsequent to acceptance of techno- commercial bid at www.eproc.bihar.gov.in

INDIRA GANDHI INSTITUTE OF MEDICAL SCIENCES,

SHEIKHPURA, PATNA -800014 (Bihar, India)

Sr. No. of Tender: : _____

FILE NO. : Tender No.: _____

Tender form issued in favour of: _____

_____

Dear Sir,

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

_____

2. I/We are enclosing herewith the Demand Draft No…… dated……..……. for **Rs. /-** drawn in favourof **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.

8. **I/we have quoted the price in Indian Rupee only.**

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.**

Sr. No.	Terms & Conditions as per Bidding Document	Page No. (Please mention the page nos. of the technical bid where the concerned document is attached.)	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 equipment's.		
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 dept. 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. /Semi Govt. Organizations / Institutions / Hospitals at the rate lower than the rate quoted against this tender.		
15.	**Quality Assurance Certificate** like ISI, ISO-9002, IP/BP, **ICMED 9001/ ICMED 13485/ICMED 13485 Plus/CE/USAFDA/QCI** 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 as mentioned against each item 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 GST 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 in Indian Currency for the item(s)** as mentioned in the Bidding Document and as per format attached as **Annexure – I**		
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 and price should be mentioned in Indian Rupees.**

(Name of the Bidder with signature & seal)

ELIGIBILITY CRITERIA

01	Manufacturers or their authorized dealers/Indian subsidiaries/direct importers having a place of business in any of the States of India are eligible to participate in this tender.	Mentioned Page no.
02	The bidder and manufacturer of the equipment offered should be in the business of the supply and installation of same / similar equipment for the last five calendar years.	
	(a)The manufacturer should have completed 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. Institutions/ Hospitals in India in last five years from the last date of submission of tender. The installations mentioned by the authorized representative in their offer must be functional and performance certificate for the same issued by the user concerned also be attached with the offer.	
03	The Bidder should be public undertaking /Autonomous Body /Public Ltd./Pvt. Ltd. Company or proprietary firm /Partnership Firm and should be in medical equipment business since last five years in India. The Bidders having manufacturing facility in their name in India for the majority of the items offered by them shall be given preference.	
04	The Bidder (manufacturer or their authorized agent) should have had average annual financial turnover of Rs.50 Lakh during the last three years endings 31st March 2020.	
05	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.)	
06	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 competencyofthebidderandalsothe 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 Two year from date of 1st satisfactory installationand acceptance of the equipment. Repeat Supply Order will be placed as per requirement of the Institute of all the quoted and approved items. The rate contract may be further extended for period of one year as decided by Director, IGIMS-Patna.

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.2500/-(Rs. Twenty fivehundred only)** Non –refundable for each Group by demand draft favouring Director, IGIMS, Patna payable at Patna.

5. The "Bidding Document" can also be downloaded from institute website www.igims.org. In case, downloaded bidding document is used,Bidder(s) have to submit the cost of the Tender Document along with the completed documents in the form of demand draft in favour of Director, IGIMS, Patna, payable at Patna towards cost of the " Tender documents" Bidder is required to attach separate DD for the same in a separate envelop super scribed with " cost of bidding document" if the cost of tender document is not submitted by the bidder, his offer shall be outright rejected.

6. Last datefor submission of bidding document is 09/11/2020up to 4.00PM by speed/Regd. post/ Courier only and technical bid will be opened from 10/11/2020 to 16/11/2020 at 3.00 PM in Conference hall IGIMS, Patna

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 only along with the tender favouring Director, I.G.I.M.S. – Patna (payable at Patna). No interest is payable on EMD/ Bid security.

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

b. 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.

c. 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.

d. 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**.**

e. Cheque, Cash payment, Money Order, Fixed deposit etc will not be accepted as EMD.

f. 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.

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

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

OR

ii. A Bank Guarantee issued by a nationalized/ scheduled bank located in India, in the form prescribed in the tender document as Annexure- IV (valid up to one year from the date of technical bids opening) Bank Guarantee in any other format will not be acceptable and render the bid non-responsive.

iii. The successful Bidder's EMD will be discharged upon the Bidders signing the contract and furnishing the performance security. The EMD deposited in the form of DD of the successful Bidder can be adjusted towards the security deposit payable.

8. Bidder(s) should enclosed photocopy of Income tax & sales tax clearance certificate.

9. 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. Supply order (minimum 3 nos. or more issued by govt./semi govt./reputed pvt.institution/organisation for quoted items (same model)

c. 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.

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

e. 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.

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

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

h. 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.

10. 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?

11. After Sales Service Conditions:

a. The Institute is in the pursuit of ensuring excellent after sales service for every user in respect of the equipment's 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 endeavour to provide trouble free operation/performance of the equipment's 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 equipment's 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 of the item.

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 equipment's 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 spares, 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 equipment's 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.

12. **<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.

13. 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.

14. **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/ five 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.**

15. Supplier will submit undertaking for ensuring uninterrupted supply of spares during the total life span of the equipment's.
16. Indian agency commission and Installation charge if any will be paid in Indian rupees after successful installation and demonstration of the equipment's.
17. Principal's Invoice of the quoted items must be submitted with the quotations.
18. Proof of the official Indian agent certificate of the firm must be attached. (Notary Certified Photocopy)
19. In order to fully and optimally utilize the equipment, training to Para Medical Staffs and Doctors should be provided. In continuation to this training, separatemaintenance 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).
20. Bidder(s) have to submit an affidavit to the effect that they have not supplied the offered item(s) to any Govt., semi Govt. /Organization, Institution, etc. at the price lower than the price offered to I.G.I.M.S. – Patna.
21. 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.
22. Bidder might be required to demonstrate the system at the discretion of the institute.

23. **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.

24. **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.

25. The Director reserves the right to accept or reject any or all tenders without assigning reasons.
26. The Director reserves the right to modify, add or delete any terms & conditions of the contract as and when required.

27. **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.

28. 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 up to I.G.I.M.S. - Patna will be borne by supplier's Indian Agent for which this Institute will not pay the charges. The firm should quote as FOR IGIMS Patna including all expenditure in **Indian Rupees only**.

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 **threeyears** from the date of satisfactory installation. The Complete System should include the basic unit and allied supporting components like UPS etc. to be supplied by the bidder along with basic unit if necessary for running the system.

b. During warranty period of three/five 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 = 365days
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 validity to cover warranty period if required.

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. <u>After Sales Services</u>: -

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, etc to be supplied by the bidder along with basic unit if necessary for running the system.

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 = 365days
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. **<u>Performance Security</u>**

a. There will be a 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 security money deposit, 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 security money deposit 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 security money deposit 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 three months after receipt of Supply Order. 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 .
ii. 2nd extension for an additional month or a part thereof @ 3% per month subject to maximum Limit of 20% of the order items.
iii. Cancellation.- If delivery is not done even after 2nd extension Institute shall have the right of cancellation of Supply order at its discretion. The institute may also cancel the supply order without giving any extension.

07. **Payment: -**

a. 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.

08. **Validity of Price:-**

This rate Contract will be valid for Two year from date of 1st satisfactory installation and acceptance of the equipment. Repeat Supply Order will be placed as per requirement of the Institute of all the quoted and approved items. The rate contract may be further extended for period of one year as decided by Director, IGIMS-Patna.

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 breakup 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 backup 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/ Security money deposit,
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 equipment's 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 equipment'ssupplied after the date of coming into force of such reduction or sale shall stand correspondingly reduced.

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

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

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

Director,
IGIMS - Patna.

CHAPTER:

SCHEDULE OF THE REQUIREMENT

List of Equipment's
B: State Cancer Institute-II
Video Endoscope unit having Upper and Lower Gastrointestinal scopes
Cystoscopy Set
Bronchoscope- Rigid and Flexible
Micro Drill and Saw System
Laryngopharyngoscopy System
Nerve Simulator
Hyperthermic Intra-Peritoneal Chemotherapy System
Binocular Loupes with LED Loupe Light
OT Table
Anaesthesia Work Station with Monitor
Multiparameter Monitor with Central Monitoring Station
Fiberoptic Thoracoscope
4 K Laproscopy Set
Video Mediastinoscope
Radio Frequency Ablator
Operating Microscope
Sternotome
Harmonic Scalpel
Portable USG
ICU Bed
C: G.I. Surgery
Upper & Lower GI Video Endoscope
Mobile Electro-Hydraulicoperation Theater Table
4k Laparoscopic System
Intraoperative Video-Choledochoscopy
Ureteroscope
Nephroscope
D: Obstetrics & Gynaecology
Cell Salvage & Scavenging System (Cell Saver)
E: Laboratory Automation
Turnkey project for Automation of Indoor Blood Collection Process with installation of APTL (Automated Phlebotomy Tube Labeller) & its integration HIS and connectivity with existing Blood Transport System.
F: CTVS
Heart Lung Machine
Cell Saver
IABP (Intra Aortic Balloon Pump)
Invasive Cardiac Monitors
ICU Ventilator- High End
ACT Machine
Ethylene Oxide Sterilizer
External Pacemakers-Single Chamber
External Pacemakers - Dual Chamber
Syringe Infusion Pumps
Portable Heamodialysis Machine
Surgical Loupe
Surgical Head With Xenon Light
Sternal Saw
Redo Sternal Saw
Surgical Instruments
G: Mobile Ophthalmic Unit
Vehicle
Instruments for Unit

H: Central Library
Supply, Installation & Commissioning of RFID
I: Microbiology
Laminar Airflow Chamber No.-1
Laminar Airflow Chamber No.-2
Automated Incubator
Fluorescent Microscope
Slide Warmer
Tissue Homogenizer
Bio Safety Cabinet-2A
1D & 2D Gel Electrophoresis System
Refrigerator
Laboratory Refrigerator
Digital Water Bath
Upright Frost Free Vertical Deep Freezer (-25°C)
Deep Freezer (-55°Cto -86°C)
Portable High Volume Air Sampler
Hot Air Oven
J: Transfusion Medicine
Sterile Connecting Device/ Docking Device
Automated Component Extractor
Tube Stripper
Blood Collection Monitor
Dielectrice Tube Sealer
Table Top Centrifuse
Digital pH Meter
Blood Bank Refrigerator
Blood & Component Balance
Lab Autoclave
Coagulation Analyzer
Multichannel Pipettes
K: Trauma & Emergency
Anaesthesia Workstation
Biphasic Defibrillator, Monitor & Recorder
High- End Multi-Parameter
Pulse Oximeter
Portable X-Ray Machine
L: Hematology
Deca-Head Microscope

ANNEXURES

ANNEXURE - I

PRICE SCHEDULED

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)	GST (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 – II

COMPREHINSIVE ANNUAL MAINTENANCE CONTRACT PRICES SCHEDULE

Sl. 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 equipment's tendered within the stipulated time.

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

Date: (Name of manufacturers)

Place:

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

ANNEXURE – IV
BANK GUARANTEE FORM

To

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

WHEREAS _____ (Name and address of the supplier) (Hereinafter called "the supplier") has undertaken, in pursuance of tender no_____ dated _____ (herein after called "the contract") to supply The Director, Indira Gandhi Institute of Medical Sciences, (address) with ……. (Description of goods and supplies).
AND WHEREAS it has been stipulated by you in the said tender/bid that the supplier shall furnish you with a bank guarantee by a scheduled commercial bank recognized by you for the sum specified therein as security for compliance with its obligations in accordance with the bid scope;

AND WHEREAS we have agreed to give the supplier such a bank guarantee;
NOW THEREFORE we hereby affirm that we are guarantors and responsible to you, on behalf of the supplier, up to a total amount of _____ (Amount of the guarantee in words and figures), and we undertake to pay you, upon your first written demand declaring the supplier to be in default under the contract and without cavil or argument, any sum or sums within the limits of (amount of guarantee) as aforesaid, without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.
We hereby waive the necessity of your demanding the said debt from the supplier before presenting us with the demand.

We undertake to pay you any money so demanded notwithstanding any dispute or disputes raised by the supplier(s) in any suit or proceeding pending before any Court or tribunal relating thereto our liability under these presents being absolute and unequivocal.
We agree that no change or addition to or other modification of the terms of the contract to be performed there under or of any of the contract documents which may be made between you and the supplier shall in any way release us from any liability under this guarantee and we hereby waive notice of any such change, addition no modification.
No action, event, or condition that by any applicable law should operate to discharge us from liability, hereunder shall have any effect and we hereby waive any right we may have to apply such law, so that in all respects our liability hereunder shall be irrevocable and except as stated herein, unconditional in all respects.

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

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

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

ANNEXURE – V

(TO BE SUBMITTED WITH TECHNICAL BID)

POWER OF ATTORNEY

(On a Stamp Paper of relevant value)

I/ We…….(name and address of the registered office) do here byconstitute,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 202_ For_____

(Name, Designation and Address)

Accepted

_____

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

Date : _____

Specification & Allied Technical Details

Group-B: State Cancer Institute-II

1. VIDEO ENDOSCOPE UNIT HAVING UPPER AND LOWER GASTROINTESTINAL SCOPES

TECHNICAL SPECIFICATION
VIDEO Endoscope unit with NBI/HD plus video with upper GI endoscope and Colonoscope with accessories

Technical Specifications (Upper GI Endoscopes):
1. Diagnostic Gastrovideoscope: (01 Quantity)
- Built in HD TV compatible CCD with close focus observation capacity.
- Should have Chrome endoscopy imaging (NBI/FICE-BLI/ I scan-OE/m BLU/S technology) and preferably dual focus Capacity for detailed mucosal study.
- Fully immersible in disinfectant solution resistant cap and one touch connectivity.
- Inbuilt scope identification memory chip for monitor display of scope model no. serial no. white balancing memory. No of connections
- Should have forward/auxillary water jet for mucosal cleaning
- The scope should be the latest high end model available in Indian market

A. Insertion tube outer diameter: 9.9 mm or less for diagnostic purpose
B. Field of view/ Angle of view: Normal/Near focus 140 degrees or more
C. Direction of view: Forward viewing
D. Depth of field: Near 2-3mm or better and Far 4-100 mm or better.
E. **Angulation tip**
a. Upwards: 210 degree or more
b. Downwards: 90 degrees or more
c. Right: 100 degrees or more
d. Left: 100 degrees or more
F. Instrument chaneel : > 2.8 mm
G. Working length: 1030 mm or more
H. Total length : 1030 mm or more
I. Minimum visible distance of instrument used through channel : 3 mm or closer from the distal end

2. Accessories:
a. Reusable biopsy forceps oval cup fenestrated and oval cup non fenestrated – 2 each
b. Hot biopsy forceps with alligator cups with and without needle – 2 each
c. Foreign body retrievable basket 6 wires – 2
d. Reusable hot biopsy forceps – 2
e. Electrosurgical snare – 2
f. Bipolar probes- 5
g. Cleaning brushes and channel opening brush – 5 each
h. Washing pipe/ spray catheter – 10
i. Injection needle 21 G – 10
j. Grasping forceps- rat tooth, rubber tip – 2
k. Rotatable clip fixing device short and long – 5 each
l. Endoloop ligating device length 1650 mm and 2300 mm – 2 each
m. Endoloop 30 mm and 20 mm – 5 boxes each
n. Hemoclips - 20
o. Extra xenon bulb – 1
p. Biopsy channel valves – 1 pack of 100
q. Extra suction and air water buttons – 5 each
r. Accessories: Authorization certificate by the parent company of the endoscope should be attached for compatibilty.

3. Colonovideoscope (01 Quantity)
- Built in HD TV compatible CCD with near and normal focus observation capacity
- Should have Chrome endoscopy imaging (NBI/FICE-BLI/ I scan-OE/m BLU/S technology) for detailed mucosal study.
- Fully immersible in disinfectant solution (No need to attach water resistant cap) and one touch connectivity
- Inbuilt scope identification memory chip for monitor display of scope model no. serial no. white balancing memory. No of connections
- Inbuilt features like variable stiffness, high force transmission and passive

bending for ease of insertion
- Should have forward/auxillary water jet for mucosal cleaning
- The scope should be the latest high end model available in Indian market.
- Insertion tube outer diameter: 13.2 mm or less
- Field of view: In normal focus ≥140 degrees or better and in near focus ≥140 degrees or better.
- Direction of view: Forward viewing
- Depth of field: Far-4-100 mm or better and near 2-3 mm or better.
- Distal end outer diameter: 13.2 mm or less
- Angulation tip

o Upwards: 180 degree or more
o Downwards: 180 degrees or more
o Right: 160 degrees or more
o Left: 160 degrees or more

- Instrument channel : 3.2-3.8 mm
- Working length: 1600 mm or more
- Total length : 2005 mm or more

4. Accessories:

- Compatible reusable biopsy forceps with or without needle – 5 each
- Polypectomy snare hexagonal and oval rotatable : 1 pack of 10
- Reusable hot biopsy forceps – 2
- Electrosurgical snare – 2
- Cleaning brushes and channel opening brush – 5 each
- Washing pipe/ spray catheter – 20
- Injection needle 21 G – 10
- Rotatable clip fixing device short and long – 5 each
- Single use clip - 100
- Endoloop ligating device length 1650 mm and 2300 mm – 2 each
- Endoloop 30 mm and 20 mm – 5 boxes each
- Hemoclips - 20
- Extra xenon bulb – 1
- Biopsy channel valves – 1 pack of 100
- Extra suction and air water buttons – 5 each
- Accessories: Authorization certificate by the parent company of the endoscope should be attached for compatibilty.

5. Video Processor (01 Quantity)

- Should be compatible with analog HD- SDI and DVI output for HDTV monitor should be available
- Should contain electronics for clear visibility of near and far objects.
- Equipped with high resolution HDTV imaging capacity
- Compact and ergonomically designed
- Optical chrome endoscopy imaging such as NBI/FICE-BLI/I scanOE/mBLU/S technology and HD plus videoscope.
- Portable memory and USB slot for image recording
- Automatic IRIS control and white balance.
- Picture in picture display and index function ability
- Electronic zoom upto 1.5 x
- Equipped with memory backup for settings and lithium battery
- Should have prefreeze function for image stabilization
- Should have inbuilt light source or separate light source with NBI/FICEBLI/I scan - OE/m BLU/S technology imaging capacity/ HD plus video.
- High intensity Xenon light source (300W) with 500 hours life with emergency halogen light for backup
- Backlit front panel indicator, equipped with automatic light adjustment, forced air cooling, regulated air feeding pump and fan with low noise
- Should be supplied with two extra xenon bulbs and one extra halogen bulbs
- Compatible with the quoted gastrovideoscope and colonoscope
- Video signal output : RGB, Y/C and composite (Simultaneous)
- The endoscope system must be suitable for high resolution, high magnification images of the GI tract with ability to detect early cancer and precancerous lesions by optical enhancement of images. The system must have the facility to provide images with optical chromoendoscopy
- Should be supplied with 2kw online UPS
- Video endoscopy workstation with space for accommodation of a LCD video monitor (26" or more in size), video processor, light source with scope hanger
- Two water bottles compatible with the processor
- Two high pressure suction machine (>1 kpa) should be supplied

6. High definition Medical Grade LED monitor(From the same parent manufacturer of the scope)

- 26 inch full HD LED monitor with high resolution 1920× 1080
- Low power consumption
- Aspect ratio 16:9/ 16:10 with output of (1080/601: NTSC) (1080/501: PAL)

- Should have picture in picture and picture out picture for viewing side by side split screen images
- One separate 32" LED monitor for teaching purpose

Suitable computer, printer, Trolley, Suction machine (2), Leakage tester and endoscope software is to be supplied with the unit.

The complete system should be European CE or US FDA approved, other than the suction machine, UPS, Computer, Printer, Trolley, and endoscopic software to be supplied with the machine

Almirah: An almirah either customized or made to order should be provided for housing the scopes should be provided.

Demonstration: Demonstration of the quoted model of the endoscope at AIIMS Raipur is mandatory for technical evaluation and acceptibility.

Manufactures/Supplier should have ISO certificate to Quality Standard.

Comprehensive warranty for 5 years and 5 years CMC after warranty.

Warranty and CMC:

- Should provide Warranty period: As per mentioned on the Annexure and CMC after warranty as per mentioned on the Annexure.
- Availability of spares for at least 10 years after date of installation.
- Comprehensive warranty would include all parts-plastic, metallic, glass, batteries and rubber (without any exclusion) except the consumable accessories listed above.
- Comprehensive warranty would include periodic checking and periodic calibration of all parameters strictly as per manufacturer's recommendations (at least every 6 month) and any spares or standards required for that.
- Should have online and telephonic registration of the complaints.
- Should have resident service engineer available in Raipur within 24 hrs to solve the complaints.
- Down time of the equipment will start from the time of lodgement of first complaint.
- The company must ensure that the machine remains FULLY functional all the time for the period of warranty and CMC.
- No request in this regard will be entertained on the pretext of on availability of items with the supplier/company.
- Prices of all Equipments and CMC should be quoted separately and frozen for the period including warranty and CMC.
- Should have local service facility and should have the necessary equipment's to carry out preventive maintenance test.
- Onsite physical demonstration and training of the equipment to all the end users with all the requested facilities will be mandatory.
- Original literature, and not the photocopy, to be supplied with the quotation.
- Company should certify that model quoted is latest and not obsolete, and spares are available for minimum 5 years after warranty (5 years).
- Warranty and CMC should be provided by company and accessories should be included in warranty and CMC.
- Should provide the preventive maintenance in every 6 month and also calibrate the machine at the time PM if required.

2. CYSTOSCOPY SET

TECHNICAL SPECIFICATIONS

Technical specifications for Cystoscopy set		
S.No	**Name**	**Specifications**
1	Telescope (Fibroptic light transmission incorporated)	Forward oblique 30° Diameter – 4 mm, Length 30 cm Autoclavable
2	Cystoscope – Urethroscope sheath	20 Fr with obturator and 2 luer lock adaptors
4	Telescope bridge	1 lockable instruments channels, 10 Fr
5	Coagulating Electrodes	4 Fr Unipolar length 53 cm
6	Unipolar High Frequency cord	Length 300 cm, 4mm plug
7	Biopsy forceps optical	Double Action Jaws, straight
8	Grasping forceps	Double Action Jaws for Stent removal for use with telescopes

3. BRONCHOSCOPE- RIGID AND FLEXIBLE

SPECIFICATIONS FOR FLEXIBLE BRONCHOSCOPE

1. It should have superior image quality with crisp, clear images and true-to life colour preferably HD images.
2. Should have facility for pressure regulated leakage testing.
3. Scope should have minimum three user programmable remote switches to improve operability.
4. Should have Narrow Band/ I-SCAN/ FICE Imaging facility.
5. Outer diameter should be 6.0mm or less.
6. Channel diameter should be 2.0 mm or more. Separate channels for Oxygen and suction
7. Insertion tube length should be 600mm or more.
8. Field of view should be 120 degree or more.
9. Depth of field should be 3-50mm or better.
10. Angulation – UP-180 degree, Down-130 degree or better.
11. Minimum visible distance should be 3mm or less. Should have telescopic eye
12. Should be compatible with laser and electrocautery. Fully immiscible in disinfectant solution.
13. Should have scope ID function.
14. Autoclavable suction valve to avoid risk of cross contamination.
15. The equipment/system should be Latest model only. preferably, USFDA or European CE approved. 16. The equipment should be supplied with the following standard accessories:

A) LED Light Source (Xenon short arc Ozone free 300 Watt lamp): -Xenon / LED light with scope compatibility having lamp life of at least 500 hours. - Emergency halogen/LED light for backup. - 4 spare bulbs
B) Compact Trolley - Should be made of Stainless steel capable of carrying the weight of all the equipments. - Should have multiple shelves to keep accessories mentioned.
C) Essential Accessories
a. FORCEPS
a. Foreign Body Forceps i. Rubber Tip - 2
ii. Alligator Jaw/crocodile – 2
iii. Retrieval basket – 1

b. Biopsy Forceps – plain - 5, toothed – 3
b. Cytology brushes with sheath - 8
c. TBNA Needles with sheath – 5 sets
d. Biopsy valves (Reusable) 2
e. Suction valves (Reusable) 10
f. Cleaning brushes (Reusable) 3
g. Bite block (Reusable) 4
h. Leakage tester- 1
i. Cleaning and maintenance kit- 1

D) Appropriate UPS with at least 60 mins backup- 01
E) Video converter to attach with scope and video system processor for video output01(optional- Quoted separately).
F) Software for video-recording and CD-storage of bronchoscopic procedure (optional- Quoted separately).
-The bronchoscope and all the accessories mentioned above should be supplied by the same manufacturer.
- In case of Essential accessories as mentioned in section C above, they should be of the same manufacturer as that of the bronchoscope or from any reputed company if being provided other than the manufacturer of bronchoscope.
Environmental factors:
1) The unit shall be capable of being stored continuously in ambient temperature of 0 - 50deg C and relative humidity of 15-90%
2) The unit shall be capable of operating continuously in ambient temperature of 10 -50 deg C and relative humidity of 15-90% Standards,
Safety and Training
1) The company should give a certificate that the model quoted is the latest and not obsolete, and spares will be available for next 7 years.
2) Manufacturer should have ISO or equivalent certification for quality standards.
3) Comprehensive warranty for 5 years and 5 years CMC after warranty should be included with compulsory provision of supply of spare parts of the model supplied for next 10 years.

RIGID BRONCHOSCOPE SET

The Technical Specification &Description
1. Straight Forward Telescope 0°, Diameter 4.5 mm,length 50 cm, autoclavable. Fiber optic light transmission incorporated - ONE
2. Lateral telescope 30°, diameter 2.8mm,length 44 cm fibre optic light transmission. Colour code: yellow.- ONE
3. Bronchoscope Tube Universal, without distal fiber optic light carrier, for use with proximally insertable prismatic light deflector and plugs length 43 cm, size 8.5 - ONE
4. Bronchoscope Tube Universal, without distal fiber optic light carrier, for use with proximally insertable prismatic light deflector and plugs length 43 cm, size 7.5 - ONE
5. Bronchoscope Tube Universal, without distal fiber light carrier, for use with proximally insertable prismatic light deflector and plugs length 43 cm, size 6.5 - ONE
6. Prismatic Light Deflector with connection for fiber optic light cable - ONE
7. Glass Window Plug ONE
8. Rubber Telescope Guide ONE
9. Adaptor with sliding glass window plug, sealing cap, notched lens and keyhole opening, movable, for use with Full Lumen Tracheoscopes and Bronchoscopes ONE
10. Injection Cannula for positive pressure assisted ventilation system, O.D. 3.5 mm for use with bronchoscopes and tracheoscopes with LUER-lock female fitting ONE
11. Tube Guide, for Bronchoscope - ONE
12. Adaptor from bronchoscope to any type of pediatric respiration equipment. ONE
13. Plug for Ventilation Attachment of Bronchoscopes- ONE
14. Bronchoscopic Forceps, circular cup, biopsy, malleable, double action jaws, diameter: 2.5 mm, working length 50 cm – ONE
15. Bronchoscopic Forceps, universal biopsy and rasping, double action jaws, diameter: 2.5 mm, working length 50 cm - TWO
16. Bronchoscopic and Esophagoscopic Forceps, universal biopsy and grasping, double action jaws, diameter: 2.0 mm, working length 35 cm - TWO
17. Bronchoscopic and Esophagoscopic Forceps, alligator, grasping, double action jaws, diameter 2.0 mm, working length 35 cm - TWO
18. Bronchoscopic Forceps, alligator, grasping, double action jaws, diameter: 2.0 mm, working length 45 cm - TWO
19. Bronchoscopic Forceps, universal, biopsy and grasping, double action jaws, diameter: 2.0

mm, working length 45 cm - TWO
20. Rigid Suction Tube for Bronchoscopy, O.D. 2,5 mm working length 50 cm TWO
21. Micro Scissors, 30 cm length, 4.0 mm shaft diameter- ONE
22. Fiber optic cable 2.5mm Diameter 1.80 meter length- 02
23. Cold light source 250 Watt -1
24. Mobile TROLLEY – 1 (Made of Stainless steel. Should accommodate all equipment with electrical connection on the trolley. Should have sufficient space and baskets for keeping accessories and to accommodate all the major equipment)
- The bronchoscope and all the accessories mentioned above should be supplied by the same manufacturer. In case of Essential accessories as mentioned above, they should be of the same manufacturer as that of the bronchoscope or from a reputed company or US-FDA / European CE approved/certified if being provided other than the manufacturer of bronchoscope.

4. MICRO DRILL AND SAW SYSTEM

1. Console :- 01 (Quantity)

1. Should have Software upgradeable Provision
2. Should have touch screen display control for incorporating multifunctions into systems
3. Outputs should represent in digital figures or in graphic charts
4. With inbuilt irrigating system
5. Supply 220- 240V only 50-60Hz
6. Should be able to identify different handpieces with display on console
7. Should have function of controlling brightness, contrast and alarm volumes on the console
8. Ability to recognize &accept 02 two handpieces at the same time
9. Able to change the setting of the BRAKING; Speed to provide hard or soft brake and acceleration of the handpiece
10. Torque sensing feedback capability
11. Should be programmable as per surgeon preference
12. Should be able to store user setting for different surgeries
13. Colour Display
14. On Screen Help

2. Footswitch :- 01 (Quantity)

1. Should have fully programmable footswitch as user need
2. User should be able to control following functions via footswitch
3. Forward
4. Reverse
5. Oscillation
6. Select handpiece
7. Irrigation Control with Increase/decrease water flow rate
8. Switch over to high/ low speed
9. Increase or decrease speed (Accelerator type for accurate speed control)

3. Drill Handpiece :- -01 (Quantity)

1. Maximum Speed not less than 60000 RPM
2. Should accept straight, angled attachments and contra-angle attachment
3. Should have facility of hand controlled hand switch also
4. Should be able to mount accessories/ attachments without usage of any tools
5. DC brushless motors

4. Attachments for the Drill :- 01 Each

1. Angled Long
2. Angled Medium
3. Straight Medium
4. Straight Long

Burs for the Attachments

Assorted Tungsten Carbide Cutting &Diamond from 1 mm to 7 mm 10 Burs of each size

5. Micro saws :- 01 Each

Sagittal Saw

- Maximum speed of 23000 cpm
- Snap-lock assembly and disassembly of all attachments
- Maintenance free DC brushless motor

Oscillating Saw

- Maximum speed of 22000 cpm

- Snap-lock assembly and disassembly of all attachments
- Maintenance free DC brushless motor

Reciprocating Saw

- Maximum speed of 18000 cpm
- Snap-lock assembly and disassembly of all attachments
- Maintenance free DC brushless motor

Assorted Blades for Sagittal, Oscillating and Reciprocating Saws

All sizes (Short, Medium, Long in Both Narrow and Wide Variant)- 5 each

6. Wire and Pin Driver :- 01

- Maximum speed of 1500 rpm
- Trigger control for variable speed control on the handpiece.
- Cannulated for use with wires and pins.
- Forward/Reverse and oscillation mode controls on the headpiece.

7. Pin Collet for Universal Driver--01

8. Jacobs Chuck with key-01

9. Wire Collet of compatible and suitable diameter-01

10. Connecting cord-02

10ft long, 3/8" diameter flexible electrical connecting cord.
Dot-to-Dot type push-pull connectors at both ends.
Autoclavable

10. Compatible Irrigation tubings-20

Instruments must be ISO/EN ISO/BS-EN-ISO certified and copy should be enclosed
Copy of the European CE / US FDA certificate must be attached.
All the motors should be maintenance free D.C. brushless motors
Should have operation from both hand switch and foot switch

All Attachments, hand piece etc should be sterilisable through Steam and Flash Autoclave.

Prior demo to be provided if needed.

5. LARYNGOPHARYNGOSCOPY SYSTEM

Sl. No.	Name of Implant	Quantity
01	**Sinoscope Rigid** **D= 3.0 mm** **Working Length=140 mm** **Direcion of view=70°/0°**	**01**
02	**Sinoscope Rigid** **D= 4.0 mm** **Working Length=175 mm** **Direcion of view=30°/70°**	**01**
03	**SLaryngoscopes Rigid** **Diameter= 6.0 mm/ 8.0 mm** **Working Length=170 mm/ 170 mm** **Direcion of view=70° 70°**	**01**
04	**Flexible Laryngoscope** **Field of view=85°** **Depth of field = 2.5-50 mm** **Outer diameter** **Distal end = 3.4 mm** **Working length = 300 mm** **Bending range of distal tip + up 130° down 130°**	**01**
05	**Anterior commissure laryngoscope with fiber optic light carrier** **Length = 17 cm-18 cm** **Adult Size**	**01**
06	**175 Xenon light source**	**02**
07	**Fiber optic light cable 3.5 mm**	**02**

6. NERVE SIMULATOR -02 nos.

Technical Specification

1. The nerve stimulator should have nerve mapping facility.

2. The nerve stimulator should have Remote control for sterile one handed operation.
3. The stimulator should work on 9V alkaline battery.
4. The Power consumption should be 8mA max
5. Stimulation current: 5 mA max
6. Stimulation Voltage: 95V
7. Stimulation frequency: 1Hz/2Hz
8. Allowable load impedance: 0 kohms -12kohms
9. Stimulus duration: 1.0ms to 0.05ms range
10. Current measuring accuracy: +/-0.02 mA
11. Impedance measuring range: 1 KOhms – 90 Kohms for target stimulation current >0.5 mA
12. Weight: 250 g maximum

Free of Cost Accessories:

1 Nerve stimulation needles 24G; 25mm – 3 nos.
2 Nerve stimulation needles 22G; 50mm -3 nos.
3 Nerve stimulation needles, 21G; 100mm- 3nos.
4 Nerve stimulation needles 20G; 150mm- 3nos.
5 Nerve stimulation needles 18 G, 55mm; length with 40cm length catheter set- 15 nos.
6 Nerve stimulation needles 18 G, 110mm; length with 100cm length catheter set- 15 nos.

7. HYPERTHERMIC INTRA-PERITONEAL CHEMOTHERAPY SYSTEM – 1 No

TECHNICAL SPECIFICATIONS

The equipment should be dedicated to perform hyperthermic perfusion of sterile solutions in situations like open and/or closed method of intraoperative Hyperthermic Intraperitoneal Chemotherapy (HIPEC) and hyperthermic intra thoracic chemotherapy (HITOC). It should also be possible to use the equipment for performing isolated limb perfusion (ILP).

It should have the following features:

a. The equipment must have a water bath/ heat exchanger system to heat sterile solutions like peritoneal dialysis fluid, 5% dextrose etc. to an operational temperature range of 36°c to 47°c, in 0.1^0C increments. It should have a capacity for prewarming the fluid and be able to rapidly achieve the desired intra-abdominal temperature. The system must have automatic shut-off of the heater if the temperature exceeds specified limits.

b. The equipment should have minimum one roller type pump for infusion.

c. The equipment pump should have a perfusion solution flow rate that is adjustable from 100 to 2200 ml/minute.

d. The equipment should have a user friendly interactive touch Screen display monitor for viewing and/or easily controlling all operational parameters like the heat exchanger temperature, intra-abdominal temperatures, flow rates, timer and preferably circulating volume and pressure. It should prompt the user from initial set-up through the entire operation.

e. The equipment must have provisions to connect upto 4 temperature probes to measure inflow and outflow temperature and also intra-abdominal temperature at various locations. The probe connectors should be preferably colour coded or numbered/labelled.

f. The equipment must have the facility to adjust the volume of circulating fluid during the treatment (increasing or decreasing the volume). The entire set-up process should be in a simple and easy manner such that the theatre technicians will be able to perform it themselves.

g. The equipment should have safety system to monitor parameters like temperature and pressure and give visual & audio alarms in case of a potential risk.

h. The procedure time with the machine should be as per international norms in order to avoid damage to the viscera.

There should be provisions for easily connecting OEM‟s disposable pre-assembled circuit/HIPEC kits. Vendor must supply 50 nos. (fifty) single use disposable HIPEC sets/kits along with the main equipment. Each kit should contain a soft reservoir of 5-7 litres capacity, at least 1 inflow tubes (preferably two) and at least 2 outflow tubes, high-flow heat exchanger, at least four temperature probes (1 each for monitoring inflow and outflow temperature and two for monitoringintra-peritoneal temperature), pressure sensor and filters to filter cell fragments.

j. The price of disposable kits should be quoted separately

k. The equipment should be European CE and US FDA certified and must comply with universal safety regulations and directives and international manufacturing standards.

l. The equipment should have facility to store and transfer treatment details of HIPEC from the machine via a USB port or its equivalent.

m. The equipment should be sturdy but portable & Mobile.

n. Should be able to run on 220V/240V, 50 Hz and the electrical connections must suit Indian conditions or the necessary adapters must be provided.
o. An U.P.S. of adequate configuration for power back-up of the machine must be provided.
p. The cost of comprehensive maintenance contract should be quoted separately.
q. The vendor should have installed at least 3 machines in India in the past 3 years and the OEM should have at least 100 installations worldwide. Proof of the same must be provided.
r. Preference may be given to equipments of OEM who show a long-term commitment to manufacture the disposable HIPEC kits in India.
s. Suppliers must confirm clearly that:
1) All required spare parts will be available for a period of at least 10 years
2) Extensive hands-on training will be provided to the O.T. staff for operation and cleaning of the system.
3) There must be at least a 3 year usable period before expiry of consumables, disposable and nondisposable items.
4) Service and logistic support must be available in Chennai and provided as and when required within 24 hours.
5) A stand by equipment will be provided in case of non-functioning of the purchased machine till such time the defect is rectified.
Final approval of technical bid will be done only after the proper demonstration of quoted product

8. BINOCULAR LOUPES WITH LED LOUPE LIGHT

1. High Resolution 2.5X Binocular loupes which give bright, colour corrected crisp image with super wide at least 130mm view and super deep view at least 180mm.
2. The working distance should be 340 -420mm with individual adjustment (Left & right side optics) of Inter Pupillary adjustment.
3. Optics should be super light with weight not more than 42 grams and mounted on spectacle which is light In weight approx 25gramswith ear temples mouldable to take any shape of head.
4. The Loupes should have option of customisation also and LED light should also be fitted along with loupeslight intensity of 50,000 lux at 30cm distance along with 6V Li ion rechargeable battery
5. Battery life lasting for 17 hrs when fully charged and also shows charge level indicator supplied in a case which can be attached to belt
6. Equipment should be U$FDA or European CE approved / certified.

9. TECHNICAL SPECIFICATIONS- OT TABLE

	General Specification requirement for OT table
A.	Should be USFDA / CE / BIS/ ICMED9001/ ICMED13485 approved
B.	3 year warranty followed by 7 year CMC
C.	Suitable customized storage/sterilization cases for accessories / attachments, wherever applicable, should be supplied in adequate numbers, even when not separately asked for. These should be from manufacturer of accessory only- non-customized cases from other manufacturers will not be accepted.
D.	TabulatedCompliancestatementshouldincludeyourproduct'sspecificvalues/detailsforeachpoint and not merely 'yes' or 'no'
E.	Institute reserves the right to have a live demo if required.
	General features
1	The quoted system should be based on electro hydraulic technology.
2	The table should either be eccentric or with central column. The tables with central column should allow sufficient motorized slide of at least 310 mm to permit full upper body imaging including the pelvis without having to move the patient (transitional facility controlled by remote)
3	The table should be sturdy, mobile with padded divided (split leg) foot section.
4	All tables sections except the section attached to the pillar should be quickly detachable using easy latch mechanism to suit all surgical needs.
5	Head plates and leg plates should be interchangeable. .
6	The table should be made of high quality stainless steel with space to provide comfortable leg space to the surgeon while operating.
7	The base column should have telescopic cover of stainless steel and should prevent the ingress of fluid in the system.

8	All metal components of the table should be made up of corrosion resistant aluminum or stainless steel alloys.
9	The table should have heavy duty antistatic swivel castors with central electric/ hydraulic locking through hand held controller for easy maneuverability. It should have self-leveling floor locks.
10	Brakes, wheels for 360 degree rotation or rotation for cleaning and avoiding equipments with motorized auto drive for efficient patient transport.
11	All table top section should be quickly detachable and inter chargeable as per need of surgery.
12	Should have facility to invest corselte tray through tunnel under table.
13	Moulded seamless mattress attached to top with pins (not Velcro) preferably.
14	Should have facility to change orientation of table (Normal and Reverse mode).
15	Should have single switch operated flex, reflex and 'O' position.
16	**Weight load capacity**
	Should have safe patient weight load capacity of at least 225 kg in all table positions. The STATIC patient weight capacity should be 400 Kg or more.
17	**Table top and mattress**
	o The table top should be made up of scratch-less X-Ray/C-arm translucent material.
	o Mattress should be double layered, more than 70 cm, ultrasonically sealed and anti-decubitus / antistatic, with easy Velcro free fixation/Velcro and should be easy to detach from the top.
	o The mattress should be easy to clean
	o The mattress should be latex and CFC free and 100% hygenic
18	**Power and Controls**
	o The table should be equipped with a completely independent electronic back up drive unit operated through the override panel in case of failure of Main drive.
	o Fully charged battery should be sufficient for weekly operative schedule i.e approximately for 80 operations.
	o The central column /base and handheld controller should indicate the charging status and table battery status.
	o All table positions like height, lateral tilt, kidney position, Trendelenburg and reverse Trendelenburg and flex/reflex and zero leveling should be obtainable using remote hand held controller without moving the patient.
	o Should have automatic 0 position switch on handheld controller.
	o Latest type of LCD/LED backlit screen on hand held controlled displaying each selected position of the table and similar features should be available on override control panel.
	o Fast "Memory" options for moving to previously stored position on Remote control.
	o 10 free programmable memory positions for patient positioning
19	**Technical Specification: All Parameters should be within allowed ± 5% variation limits:**
	o Overall length: 200-210 cm.
	o Max. Width : Min. 550- 600mm (With side rails)
	o Minimum height: 600mm -760 mm
	o Maximum height: 1000mm -1010 mm
	o Side Tilt: 18 degree or more.
	o Trendelenburg: 25 degree or more.
	o Anti-Trendelenburg : 35 degree or more.
	o Power input to be 220-240Vac, 50HZ fitted with Indian plug
	o The quoted equipment should be having ISO, CE, IEC and FDA certification.
	o All technical specification accepted in compliance statement must be supported by the printed literature from the manufacturer.
20	**Accessories**
	o In case the table is imported the accessories must also be imported with the table and must not be locally sourced.
	o It should have on-table GI endoscopy (upper and lower) attachment.

20.1	o It should have all attachments for mounting Thompson retractor.
	o Allen stirrups (preferably hydraulic).
	o Lloyd-davis stirrups (preferably hydraulic).
	o Brake pedal – should be single lever foot operated.
	Should be supplied with following standard Accessories:
	o Anesthesia screen and pair of padded Armrest with clamps.
	o Pair of leg plates with padding
	o Pair of Body strap for kidney position.
	o Backlighted Hand control
21	Tabletop should be completely without x ray interfering cross bars and should be radiolucent and scratch proof. The supplier shall provide full carbon components for 360 degree radiolucency for the above mentioned surgeries.
22	It should be compatible with C-arm.
23	The side rails should be metal free to be compatible with 3D C-arm capturing.
24	Mattress should be moulded, seamless, anti-static, anti-decubitus, latex free & durable. It should preferably be attached to top with pins and not Velcro and should be easy to clean.

10. ANAESTHESIA WORK STATION WITH MONITOR

Specification of Advanced Anaesthesia Work Station with Monitor
Gas Management:

Three Gas system : Oxygen Air, Nitrous Oxide

Oxygen cylinder yoke and Nitrous Oxide cylinder Yoke

Pipeline inlet for Oxygen, Air, Nitrous Oxide

Oxygen Concentration: 25% to 100%

Electronic Gas Mixing measurement and display for accurate gas flows and mixing.

Pneumatic Oxygen Backup flowmeter

Auxillary Oxygen Flowmeter

Oxygen Flush between 35 lpm -70 lpm

Will have an additional optional receptacle for accepting/ integrating Anesthesia Gas monitoring module.
Colour coded high pressure tubings 5 meter long for oxygen, nitrous oxide and air with suitable pipeline connectors.

Hypoxic guard to ensure minimum 25% oxygen across all O2-N2O mixtures.
Oxygen failure warning device. All alarms to be audio as well as visual.

Should have 3 gas back up mechanical flow control in case of failure of electronics

Vaporizers:

Vaporizer must be isolated from the gas flow in the off position and prevent the simultaneous activation of more than one vaporizer.
Vaporizer shall mount to a Selectatec® manifold which allows easy exchange between agents.
Supplier must offer total vaporizer manufacturing capability- Sevoflurane, and Isoflurane. Isoflurane and Sevoflurane vaporizers to be standard accessories. Other vaporizers to be optional and price for each to be quoted.
Back bar to accept two selectratec vaporizers

Breathing System:

Breathing system shall be fully autoclavable to 134° C and natural latex free. It should he compact.
Total circuit volume shall not exceed2.7 L. including Absorber volume.

Breathing system shall have integrated Volume sensing and shall be of a type that does not require daily maintenance.
Ventilator bellows shall be integrally mounted to the breathing system. Should have Ascending Bellows design.

Bag to vent switch shall be bi-stable and automatically begins mechanical ventilation in the ventilator position.
Adjustable pressure limiting valve shall be flow and pressure compensated .

Machine shall provide circle mode breathing circuits.

Components coming in contact with patient gas shall be disposable or autoclavable.

FIO2 monitoring should be available.

Common Gas outlet Should be standard supply for connecting open circuit.

AGSS ready to be connected to hospital installed active system

Ventilation

The workstation should have integrated Anesthesia Ventilator system.

Ventilator based on flow valve technology with ICU features and modes of ventilation

Visible bellows for visual indication of leaks in the systems.

Ventilator shall have Volume Centrol and Pressure Controlled modes.

Dual Mode — PCV, VCV and PS needed for difficult lung ventilation, Obese patients laproscopy , beating heart , and neonatal.

Ventilator shall have a tidal volume compensation capability to adjust for losses due to compression, compliance and leaks, and compensation for fresh gas flow
The workstation should be capable of delivery of low flow and minimal flow anaesthesia

Ventilator shall be capable of atleast 120 L/min peak flow to facilitate rapid movement through physiologic "dead space' in the Pressure Control mode

SIMV and Pressure Support Ventilation with Apnea Back Up Ventilation should be offered
It should have a cardiac bypass mode. during cardiac bypass procedure to stop the system from alarming, and turns off automatically, when the ventilator is turned back on

Compliance Measurement and Trending (Preferable):Measures and displays the patient's compliance to offer an view of the patient's lung condition.
Vital Capacity & Cycling procedures (Preferable) : to automate the procedures for optimal Peep setting to recruit the lungs .
Tidal Volume: 20ml to 1500ml in VCV .TV = min 5 ml in PCV mode.

Rate : 4 to 100bpm

Electronic Peep : Off, 4 to 30cms H2O

Settable I:E ratios, Pause, Trigger (0.2-10 L/min). lnsp Pressure from 5 up to 50cms H2O

Ventilator shall be capable of 120 L/min peak flow .
Ventilator shall have a tidal volume compensation. Operates on a breath-by-breath basis and does not require special calibration.

Inspiratory pressure (Pinspired)

5 - 60 cm H2O

Pressure limit (Plimit)

12 to 100 cm H2O

Machine should have atleast 60 mins battery backup

Shall have integrated LED light strip that provides bi-level work surface illumination

Handle on side for easy positioning.

Machine should have mounting capability of one O2 and one N2O pin-indexed cylinder.

Display:

Around 12-16 " Color TFT Display with High visibility and highly visible alarm light mounted on the Anesthesia Workstation

Monitor should be Modular and flexible.

Colour touch screen display Up to 8 waveforms / 4 digit fields, 7 optimized user modes, Standard Adult, Pediatric & Neonate mode with OxyCRG

Trend up to 72 hours of graphic and numerical data

Should have an individual Battery backup, minimum of 2 hrs

ECG and IBP analog output. Should have arrhythmia and ST segment Analysis with ST Trend

Monitor should have Simultaneous Monitoring facility for 2xIBP & 2xTernp for all monitors

Basic Patient side module for Measuring Parameters like 5 lead ECG, NIBP, SPO2, RESP, 2xIBP, 2xTemp, EtCo2 (side stream), Anaesthesia Gas monitoring, Level of Depth of Anaesthesia monitoring and NM monitoring
Accessories - Standard use for ECG (2 in no.), SpO2 probes (2 each for adult & pediatric). NIBP(2 cuffs each for adult and pediatric & I for neonate), Temperature probes (1 for core and 1 for skin), IBP cables (2 in no with 10 pressure transducers and their one holder), EtCO2- 5 filter assemblies and 10 tubings, for anaesthesia gas monitoring, depth of anaesthesia monitoring(with 25 disposable leads),NM Monitoring cables Recorder option for printing the up to 4 waveforms and alphanumeric data, and trends etc .

Power:

Will work on electric mains

Anaesthesia workstation should have an individual battery backup of minimum up to 45mins on fully charged battery .

Should have integrated lighting for vaporizers and working table (optional)

Braking Mechanism

Front caster wheel should have a central baking mechanism

Following upgrades should be offered as options — (Quote unit prices in price bid)

Mainstream EtCO2 monitoring should be possible

Cardiac Output module for measuring the cardiac output using the thermo-dilution technique with four Invasive pressure channels.
Module for monitoring Cardiac Output with the help of PiCCO technique
Facility for Microstream EtCO2 with dedicated accessories for Adult, Paediatric & Neonates (25 each)

Anaesthesia workstation and monitor should US FDA/CE Approved.

11. MULTIPARAMETER MONITOR WITH CENTRAL MONITORING STATION

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

through internet.

- Patient monitoring network shall be able to support up to 1,000 monitoring nodes.
- Should be supplied with necessary accessories for adult, pediatric and neonatal accessories.
- **Should have European CE or US FDA certifications**.

1. The tip of Thoracoscope should be flexible, having capacity of upward movement of 160 degree and downward

Accessories and spares

Accessories and spares

1. ECG / respiration: 5 lead ECG cable and lead wire set and 10 lead ECG cable and lead wire set per monitor

2. NIBP: Adult: 2 sizes and Pediatric 2 sizes and neonatal, 1 size per monitor

3. SPo2 Sensor: Adult sensor with cable, pediatric sensor with cable and neonatal sensor with cable per monitor

4. IBP: Include 10 nos of disposable pressure transducer with bracket and interface cable per monitor

5. Temperature: Skin and nasopharyngeal probes per monitor.

Central Monitoring Station for Multi Para Monitor

- System should have minimum 16 beds capability.
- Central station should have 17"/or more color display.
- Should have drug dose and hemodynamic calculations.
- It should have possible to view information such as vital signs, alarm status, arrhythmia analysis, trended parameters, patient data etc for any selected bed from the central station.
- Should have separate computer keyboard and 4 channel thermal array recorder.
- Should have default alarm limits and customizable parameter settings.
- Central station should have full bed review capability.
- Central station should be able to be configured as a bedside monitor if required.
- Should have 24 hours trends.
- **All system should have European CE / US FDA**/ ICMED9001/ ICMED13485 **certifications**.
- Should be supplied with a On-line suitable UPS

12. Fiberoptic Thoracoscope

	movement of at least 130 degree
2.	The field of the view should be 120 degree or more
3.	The outer diameter should be 6 to 7 mm and depth of the field should be 3 to 100 mm
4.	The equipment should be compatible with elector surgical unit and lase4r therapy equipment NDYG lase, 810 mm diode.
5.	The scope should be autoclavable
6.	The inner diameter of the working channel should be 2.8 mm or more.
7.	The Working length should be 270 mm or more
8.	It should be provided with insertion tube and universal cord.
9.	The equipment should be compatible with the video monitor
10.	Custom made trolley should be provided with the scope.
11.	The equipment should be supplied with the following Accessories: a. Disposable Biopsy Forceps-05 no. b. Channel Cleaning brushes-03 nos. c. Flexible Trocars-10 nos. d. Spray Catheter for intrapleural drug instillation-01 no
12.	It should be conveniently moveable from one place to another place.
13.	It should have good number of installation in India at least three and good service backup preferably within NCR.
14.	The equipment should be US FDA/ European CE certified
15.	Video Processor with light Source and Monitor a. Video Processsor & Light source should be latest and From the same manufacturer b. Should be equipped with 300W LED light source with emergency back up lamp c. Medical Grade Monitor: At least 24 inches size full Hd (High Definiton)
16.	Computer with recording & reporting system latest intel core i5 with at least 4 GB RAM with latest color printer, software an 2 KVA UPS

13. 4 K Laproscopy Set

4K imaging System should have integrated /separate unit of Camera Console, LED /Xe Light Source & Imaging Management System.It should have intuitive tablet controller to control fetaures of imaging system. The Tablet should have provision to drape in a cover for used in a sterile field. Camera console, LED/XE light source & Image Management System should have following features—

A) 4K Camera Console:

The Console should combine the latest technology, 4Kvision (2160p), 4K 3-Chip CMOS camera with 10- bit for 1 billion colorization.

Built in Wi-Fi router for wireless connectivity

One Console and One Unique Tablet Interface should simplify use, and programmable individual surgeon preferences to enhance the user experience.

Camera rear Panel should have numerous input & Display Port/DVI Outputs/3G SDI Outputs.

Camera should have resolution of 3840X2160 lines with Progressive scan Technology.

B) LED/XE Light Source –

- LED light source should have 30,000-hour Life span (14 years at 40 hours per week)
- Xe light source should have atleast 500 hour Life span.
- Should have 7 Year warranty against LED Engine.
- Compatible with Light Cables of Different Manufactures

C) Image Management--

- DICOM Capability -Pictures should be Exported to PACS
- Should have provision to Export data to Network (Shared Folder)

- Export of Images/Video to USB, I-Pad, Desktop, Laptop through Networking/Wi-Fi connectivity.
- Should have network based Live video streaming.
- Should have 128 GB or more Storage Space in Console.

- Surgeons should review, edit, annotate and tag stills and video recordings, as well as create and instantly transmit images, videos and educational postoperative reports to patients with help of IPad.

D) Ultra HD 4K Camera Head – 01 No

- 4K Camera head with resolution of 3840 x 2160 Pixel(8.3 Million Pixels)
- Camera Head should be of Titanium Housing and Hermetically Sealed for Autoclaving
- Camera Head should have Programmable Buttons to Set Surgeon Preferences.

- Titanium housing with 2 programmable buttons for 5 functions (4 individual presets + White Balance)
- 1.5x digital zoom
- Camera Head should have 7 Years warranty against autoclaving

2) UHD 4K Monitor – 1 No

- 50-58" 4K monitor with Resolution of 3840 x 2160 (4 times HD)
- Picture-in-Picture and Side-by-Side Display Modes
- Versatile Multi-Format Signal Support

3) Video Cart – 1 No

- Shockproof powder-coating
- Anti-Static roller set with cable guards Ø 125mm
- Detachable cable guards
- 4 lockable castors
- Isolating transformer 2000VA with earth leakage guard
- 5 storage shelves
- 1 extendable storage shelf approx. 150mm
- 1 storage shelf with handle
- Drawer
- Mounting position for central-monitor-mount
- Mounting position for articulation-monitor-arm
- Mounting position for tablet-arm
- Cable winding aid
- Foot pedal holder, Camera holder
- Fluid bag holder
- Tubing clamp
- Power column with 10x power cables and equipotential bonding cables

4) 4K Laparoscope 30° - 1 No

- 4K Laparoscope 30° should have diameter of 10 mm with length 300-330mm.
- The scope should be fully Autoclavable.
- Offer High depth of field focus with high 4k resolution all the way to the edge of picture
- Anti-reflective coated, high-quality glass cone (insight light post)

5) Fiber Optic Light Cable - 2 No

Fiberoptic Light Guide Cable fused at proximal end to maximize light transmission having diameter of 5 mm & length 2.5-2.7 mm

Sr. No.	Description	Qty.
	Basic Lap Instruments	
1.	VERESS Pneumoperitoneum Needle with spring loaded blunt style, LUER-lock, length 13 cm & 15 cm	1

2.	Trocar, size 11 mm, color code: green, consisting of: Trocar only, with pyramidal tip Cannula without valve, with insufflation stop- cock, length 10.5 cm Multifunctional Valve, Three part dismantel. With Washers pack of 10 (Threaded)	2
3.	Trocar, size 11 mm, color code: green, c consisting of: Trocar only, with blunt tip. Cannula without valve e, with insufflation stop- cock, length 10.5 cm Multifunctional valve, size 11 mm	1
4.	Trocar, size 6 mm, consisting of:Trocar only, with pyramidal tip Cannula without valve, with insufflation stop- cock, length 10.5 cm Multifunctional Valve, Three part dismantel. With washers pack of 10	2
5.	Trocar 11 mm diameter with thread and rotating insufflations, should have multifunctional valve to prevent damage of sharp instruments and tip lens while passing through the cannula valve. It should have stopcock for CO2 insufflation. The working length of the cannula should be 105 mm. Telescope Stopper.	1
6.	Trocar 6 mm diameter with thread and rotating insufflations, should have multifunctional valve to prevent damage of sharp instruments and tip lens while passing through the cannula valve. It should have stopcock for CO2 insufflation. The working length of the cannula should be 105 mm. Telescope Stopper	2
7.	. Trocar, size 11 mm, consisting of: Trocar only with blunt tip Cannula without valve, with insufflation stopcock, with 2 flanges for fixation of sutures length 13 cm Automatic valve Sliding Cone	2
8.	Forward-Oblique Telescope 30° enlarged view, diameter 10 mm, length 31 cm, autoclavable, fiber optic light transmission incorporated. connection for fiber optic light cable offset by 90°.	1
9.	Forward-Oblique Telescope 30° enlarged view, diameter 5 mm, length 29 cm, autoclavable, fiber optic light transmission incorporated, connection for fiber optic light cable offset by 90°.	1
10.	Injection Needle, LUER-lock, diameter 1. 2 mm, size 5 mm, length 36 cm.	1
11.	Reducer 13.5/10 mm	1
12.	Reduction Sleeve, 11/5 mm	1
13.	KELLY Dissecting and Grasping Forceps, rotating, with connector pin for unipolar coagulation, size 5 mm, length 33-36 cm -1, double action jaws, consisting of: Plastic Handle, without ratchet Outer Tube, insulated Forceps Insert, Three part dismantel.	1
14.	KELLY Dissecting and Grasping Forceps, rotating, with connector pin for unipolar coagulation, size 5 mm, length 42-45 cm double action jaws, consisting of: Plastic Handle, without ratchet Outer Tube, insulated Forceps Insert, Three part dismantel.	1
15.	Click Line Dissecting and Grasping Forceps, rotating, with connector pin for unipolar coagu- lation, size 5 mm, length 33- 36 cm, right angled, double action jaws, consisting of: 33151 Plastic Handle, without ratchet, with larger contact area 3	1
16.	Click Line Dissecting and Grasping Forceps, rotating, with connector pin for unipolar coagu- lation, size 5 mm, length 42-45 cm, right angled, double action jaws, consisting of: 33151 Plastic Handle, without ratchet, with larger contact area 3	
17.	Click Line Dissecting- and Grasping Forceps, rotating, with connector pin for un ipolarcoagu- lation, size 5 mm, length 33- 36 cm, """alligator jaws"", double actio n" jaws, consisting of: 33151 Plastic Ha ndle without ratchet, with larger contac	1
18.	Click Line Dissecting- and Grasping Forceps, rotating, with connector pin for un ipolarcoagu- lation, size 5 mm, length 42-45 cm, """alligator jaws"", double actio n" jaws, consisting of: 33151 Plastic Ha ndle without ratchet, with larger contac.	1
19.	Click Line BABCOCK Grasping Forceps, rot ating, with connector pin for unipolar c oagulation, size 5 mm, length 36 cm, atraumatic, jaws with multiple teeth, fenestrated, long, single action jaws, consis ting of: 33151 Plastic Handle, without r	1
20.	Click Line BABCOCK Grasping Forceps, rot ating, with connector pin for unipolar c oagulation, size 5 mm, length 45 cm, atraumatic, jaws with multiple teeth, fenestrated, long, single action jaws, consis ting of: 33151 Plastic Handle, without r	1
21.	Bowel Grasper, rotating, with connector pin for unipolar coagulation, size 5 mm, length 36 cm, double action jaws, consisting of: Plastic Handle, without ratchet, with larger contact area Outer Tube, insulated.	2
22.	Bowel Grasper, rotating, with connector pin for unipolar coagulation, size 5 mm, length 45 cm, double action jaws, consisting of: Plastic Handle, without ratchet, with larger contact area Outer Tube, insulated.	2
23.	CROCE-OLMI Grasping Forceps, rotating, dismantling, insulated, with connector pin for unipolar coagulation, with LUER-Lock connector for cleaning, single action jaws, atraumatic, fenestrated, curved, size 5 mm, length 36 cm consisting of: Plastic Handle, without ratchet Metal Outer Sheath, insulated Forceps Insert, Three part dismantel.	2
24.	CROCE-OLMI Grasping Forceps, rotating, dismantling, insulated, with connector pin for unipolar coagulation, with LUER-Lock connector for cleaning, single action jaws, atraumatic, fenestrated, curved, size 5 mm, length 45 cm consisting of: Plastic Handle, without ratchet Metal Outer Sheath, insulated Forceps Insert, Three part dismantel.	2
25.	METZENBAUM Scissors, rotating, dismantling, insulated, with connector pin for unipolar coagulation, with LUER-Lock connector for cleaning, double action jaws, curved, length of blades 15 mm, size 5 mm, length 36 cm consisting of: Plastic Handle, insulated, without ratchet Metal Outer Sheath, insulated Scissors Insert for use with trocars size 6 mm, Three part dismantel	1

26.	METZENBAUM Scissors, rotating, dismantling, insulated, with connector pin for unipolar coagulation, with LUER-Lock connector for cleaning, double action jaws, curved, length of blades 15 mm, size 5 mm, length 45 cm consisting of: Plastic Handle, insulated, without ratchet Metal Outer Sheath, insulated Scissors Insert for use with trocars size 6 mm, Three part dismantel	1
27.	single use scissor insert Pack of 10 (1X10)	1
28.	Suction and Irrigation Tube, anti-reflex surface with two-way stopcock, for single hand control, size 5 mm, length 36 cm	1
29.	Suction and Irrigation Tube, anti-reflex surface with two-way stopcock, for single hand control, size 5 mm, length 45 cm.	1
30.	OLSEN Suction or Irrigation Tube, with protection basket, with trumpet valve, size 10mm length 36Cm.	1
31.	OLSEN Suction or Irrigation Tube, with protection basket, with trumpet valve, size 10mm length 45Cm.	1
32.	Dissecting-Electrode, L-shaped, size 5 mm, length 36 cm, with connector pin for unipolar coagulation, consisting of: Outer tube, insulated Plastic handle Electrode L-shaped With Trumpet handle	1
33.	Coagulating and Dissecting Electrode, L-shaped, with connector pin for unipolar coagulation, size 5 mm, working length 36 cm	1
34.	Coagulating and Dissecting Electrode, L-shaped, with connector pin for unipolar coagulation, size 5 mm, working length 45 cm	1
35.	KOH Macro Needle Holder, ergonomic axial handle with disengageable ratchet, ratc het release on the right side, left curved jaws, with tungsten carbide insert ø 5 mm, length 33 cm	1
36.	KOH Macro Needle Holder, ergonomic axial handle with disengageable ratchet, ratc het release on the right side, left curved jaws, with tungsten carbide insert ø 5 mm, length 45 cm	1
37.	KOH Macro Needle Holder, ergonomic pisto l handle with disengageable ratchet, ratchet release on the right side, straight jaws, with tungsten carbide insert ø 5 mm, length 33 cm.	1
38.	KOH Macro Needle Holder, ergonomic pisto l handle with disengageable ratchet, ratchet release on the right side, straight jaws, with tungsten carbide insert ø 5 mm, length 45 cm.	1
39..	Needle holder self-rotating function 5 mm , 33 cm	1
40.	Claw Forceps, rotating, size 10 mm, length 36 cm, 2 x 3 teeth, single action jaws, consisting of: Metal Handle, with MANHES style ratchet Outer Tube, insulated Forceps Insert, Three part dismantel.	1
41.	Sterilization Tray for 2 Telescopes (Same manufacturer)	1
42.	Sterilization Tray for instruments (Same manufacturer)	1
43.	Articulated Stand , reinforced version , U shaped with One mechanical central clamp for all five joint functions with quick release coupling for instruments and Telescope.	1
44.	**Instrument Oil,** 50 ml, silicone-free	1
45.	**Wadding Silver Polish** "duraglit"	1
46.	**Cleaning Brush,** round, rigid, outer diameter 16mm for working channel diameter 4 – 14 mm, length 55 cm	1
47.	**Cleaning Brush**, round, rigid, outer diameter 11 mm, for working channel diameter 3 – 9 mm, length 35	1
48.	**Cleaning Brush**, round, rigid, outer diameter 7 mm, for working channel diameter 2.5– 5 mm, length 35 cm	1
49.	**Cleaning Brush**, round, rigid, outer diameter 2.5 mm, for working channel diameter 2– 2.4 mm, length 35 cm	1
50.	**Brush** flat for cleaning jaws	1
51.	Nathamson Liner retractor, 5mm, Medium size – 1	
52.	Autocorrecting needle holder – 5mm, length 36 cm	1

14. Video Mediastinoscope

1 Distending DCI Video Mediastinoscope, length 20 cm, distension in horizontal and radial direction, with connection on holding system via mechanical central clamp or universal clamping jaw, for use with DCI HOPKINS Telescope and DCI camera head –QTY 1 no.

2 DCI Forward-Oblique Telescope 30°, diameter 4 mm, length 14 cm, autoclavable, fiber optic light transmission incorporated, with 90° adaptation to the DCI camera head, for use Distending DCI Video Mediastinoscope- QTY 1 no.

3 Single-Chip Camera Head, Image 1 with 2 free programmable Camera Head buttons , focal length f = 16mm, for use with DCI Endoscopes – QTY 1 no.

4 Camera control unit for camera head 1 no.

5 Fiber Optic Light Cable, 3.5 mm ø, length 320 cm, for use with Endovision DCI Camera Head QTY -1 no.

6 Sponge and Dissecting Forceps, length 20 cm QTY 1 no.

7 Sponge and Dissecting Forceps, length 30 cm Qty –1 no.

8 Sponge and Dissecting Forceps, with ratchet, length 20 cmQTY 1 no.

9 Biopsy Forceps, with suction channel, length 20 cm- QTY 1 no.

10 Biopsy Forceps, with suction channel, length 30 cm- QTY 1 no.

11 Biopsy Forceps, with oval jaws, size 8 mm x 16 mm, length 20 cm-QTY 1 no.

12 Biopsy Forceps, with oval jaws, size 8 x 16 mm, length 30 cmQTY1 no.

13 Scissors, rotating, with connector pin for unipolar coagulation, size 5 mm, length 25 cm, curved, double action jaws, consisting of: Plastic Handle, without ratchet Outer Tube, insulated and Scissors Insert – QTY 1 no.

14 Aspiration Cannula, with 12 needles, length 20 cm -QTY 1 no.

15 Aspiration Cannula, with 12 needles, length 30 cm -QTY 1 no.

16 Silicone Tube with lock connector, to connect aspiration glass cannula to suction syringe- QTY1 no.

17 Silicone Tube with lock connector, to connect aspiration glass cannula to suction syringe- QTY 1 no.

18 Coagulation and Suction Cannula, Ø 5 mm, curved, insulated, with connector pin for unipolar coagulation, length 20 cm- QTY 1 no.

19 Coagulation and Suction Cannula, Ø 5 mm, curved, insulated, with connector pin for unipolar coagulation, length 30 cm- QTY 1 no.

2026'' FULL HD FLAT SCREEN 1 no.

The surgical display screens shall be medical grade 26" FULL HD LED Screen with the following video inputs:

a. DVI-D (digital)SDI (digital)

b. VGA, RGBS

c. S-Video

d. Composite

e. SOG input

The display screens should also have the following optical specifications:

a. Viewable area (diagonal): 26"

b. Resolution: 1920 x 1080 or more

c. Brightness: 500 cd/m²

d. Image Contrast Ratio: 800:1 a. Colour Scale : 100% : 178º b. Viewing angle (H & V) c. Simultaneous colours : 16.8 million d. Dot pitch : 0.287 e. Response time :5-12 ms f. Glass technology Dual : IPS g. Technology foundation : Active matrix

The display screens should comply the highest safety standards:

a. Fanless cooling prevents the introduction of contaminants into the sterile field.

b. Low voltage (24 VDC) external power supply maybe located 30m away from the screen, removing any electrical concern.

c. Front sealed, anti-glare overlay guarantees the highest level of defence against liquid ingress.

d. Membrane style buttons and a non dimpled enclosure ensure foreign matter will not accumulate into voids and possibly spread contaminants.

e. The display screens shall not weigh more than 8.2 kg.

21 300 Watt Xenon/LED Light Source: 1 no.

Should have following technical specifications/features a. Must be latest and high end model from bidder

b. Powerful 300 Watt Xenon Lamp/LED light source.

c. Lamp life should not be less than 500 hrs (approx). 2 nos. spare 300W xenon bulbs should be supplied in case of xenon light source

d. Added Para: Should be supplied with Light guide cables 3 mtr or more length - 2 nos. with each light source. Adaptors for connecting to rigid scopes (proctoscope, sigmoid scope etc.) of other reputed makes should be offered

22. Supplier should provide Trolley along with the system from same principle manufacturer

23. All the quoted items should be USFDA / European CE approved with 4 digit notified body number.

15. Radio Frequency Ablator

1. The machine should be US FDA approved with details of previous sales to reputed institutions.
2. Adequate safety to operator, patients, attendants and other medical apparatus connected.
3. Device should have both the output frequencies- Monopolar and Bipolar.
4. Device should have output frequency: 4 MHz for Monopolar and 1.7 MHz for Bipolar.
5. Device should have a minimum output power of 90 W.
6. Device should have Cut (90W or above), blend (65 W or above), Coag(45 W or above), fulgurate(35 W or above) and bipolar (90 W or above) output waveforms.
7. Device should come with a dual frequency footswitch and cable.
8. Device should have an option of both reusable and disposables consumables.
9. Device should have Digital Control Panel for easy operation and clear view of settings.
10. Device should have Solid State Circuitry for dependable and consistent energy emission.
11. Device should have auto-cut facility.
12. Device should have safety indicators to provide visual and auditory alerts.
13. Device should have parameter recall for rapid set-up.
14. Device should have an audible alarm for neutral plate dislodgement.
15. Device should be able to produce very sharp and precise cutting, negligible lateral heat production, and adequate haemostasis.
16. Device should come with a foot-controlled hand piece.
17. Device should come with a hand piece clip.
18. Device should come with a three-button finger switch hand piece.
19. Device should be a quieter system, small, lightweight generator for easy portability.
20. Weight of the machine should not be more than 10kg.
21. Device should come with a reusable medical electrode kit.
22. Device should come with a reusable neutral plate that does not require skin contact.
23. Device should come with an instantly ready to use hand piece.
24. Device should have platform to use multiple electrodes, for various surgical procedures.
25. Standard accessories should include: 1. Neutral plates 2. Two sets of surgical electrodes (loops, balls, knives, pin, fine wire, needle, sharp pointed electrodes, scalpel, coagulation ball). Loops should be round, oval, triangular and diamond shaped. Electrodes' proximal diameter should be 1.6 mm and 2.4 mm, to accommodate standard hand piece connection. 3. RF Surgipens 4. Bipolar forceps with cable.
26. A smoke evacuator with stand along with the device will be preferable.
27. There should be a minimum of 5 year complete warranty with 5 years CMC after expiry of warranty period.
28. An on-site demonstration of equipment is mandatory, prior to approval.

16. Operating Microscope

High End Operating Microscope with ICG

1. Compact microscope based on contraves technology (counterweight balancing system)

2. Should have Apochromatic optics.

3. Should have motorized zoom system with 1:6 ratio.

4. Should have inbuilt multi-functional data display

5. 200º inclinable tubes with central PD adjustment, 10x wide-angle eyepieces for eyeglass wearers.

6. Should have Integrated controllable diaphragm to increase depth of field

7. Should have variable motorized working distance from 200mm (+/- 25mm) – 500mm (+/-25mm).

8. Coaxial illumination system with variable spot illumination.

9. Should have motorized illumination zoom.

10. Adjustable, ergonomic handgrips with switches for focus, zoom , illumination and motorized curvilinear XY movements.

11. Should have two independent powerful 300 W xenon light sources with quick exchange meachanism, which allow the best visibility, even in deep cavities.

12. Touchscreen configuration for all stand, microscope, video or other accessory functions.

13. High overhead clearance for flexible positioning of the stand –even behind the surgeon

14. Should have automatic balancing mechanism.

15. Should have Stereo attachment for second observer with tiltable eyepieces.

16. Should have face to face attachment (Diploscope).

17. Should be supplied with a 3 chip high definition video camera system.

18. Should have Integrated Digital Video image recording, editing and archiving system mounted on the floor stand.

19. The system should be fully ready for image guided surgery (IGS).

20. Should have the inbuilt hardware and software for ICG fluorescence for vascular surgeries and ALA fluoresence for tumors.

21. The system should be supplied with a Foot Switch.

22. Should be supplied with an external 40'' inch LED monitor .

23. 2 spare 300W Xenon bulbs should be supplied along with the equipment.

24. Service support should be available round the clock on telephone.

17. STERNOTOME

Sternum saw hand piece Should have safe mode

- Should have two speed controls with standards and modes free speed of 1100-1300 cycles perminute

Microprocessor controlled hand piece can be calibrated for the consistence performance

- Should have DC brush less motor for law maintains

- No lubrication required for lifetime
- Should have tool less mounting of accessories for all blades or attachments
- Saw noise levels should not be more than 84db
- Should be autoclavable
- With different blades it should have maximum speed of 1300 CPM
- Should be quoted with 2 sternum gaurds

Battery charger

. 220-240volts charger and should have the feature to count the changing cycle for a particular battery

.Should have capability to identify the worn out of battery

- Should have to charge four batteries at a time without any module or modification need
- Should have an indicator to provide battery status for charging
- Should be able to charge different batteries with same charger

• Battery kit (2 sets) Li-on cell chemistry and also compatible with Ni Mh AND ni Cd batteries with low internal impedance to deliver higher current than other battery types

.Should be 9.9volts with capacity of 2.2Ah

• Weight should not be more than 0.9lbs Li-on cell capacity to produce more torque and autoclavable with life of 200 approximate and average charging cycles

.Should have a run time of minimum 21 minutes

- Should be of reconditioned with no memory effect
- Should have capability to safety features like shuts off current to battery terminal when

• hand piece is not connected Sterilization case (1 set) Should accommodate all hand piece, attachment and accessories for auto save

• Should be supplied with following blades free of cost Sternum blades 50 in number

Should have US FDA as well as CE Certification for the said equipment• Should have ISO Certification

• Service and support The company must have their service centre in India and the regional service support

- The company must provide a loaner support in case equipment is under warranty or under CMC

Company has to provide training and education for equipment handling to all CSSD,

• Biomedical staff and OT Staff Company must have to do minimum two times preventive maintenance in one year with company trained engineer

18. Harmonic Scalpel

ULTRASONIC CUTTING AND COAGULATING DEVICE WITH ADVANCE BIPOLAR VESSEL SEALING SYSTEM

- System should have a universal single generator to connect Ultrasonic energy and Advanced RF (advance bipolar) energy instruments.
- Ultrasonic and bipolar energy in the system must work separately and at no point in combination and should deliver pure ultrasonic energy and RF energy separately.
- Ultrasonic energy system should have light weight tranceducer for open surgery separate from laparoscopic surgery.

- Ultrasonic energy should be capable of sealing 7mm blood vessel
- RF energy should be capable of sealing 7mm blood vessel.
- System should have automatic instrument recognition
- System should have the ability for software updates via USB memory stick.
- System should provide Class 1 protection against electric shock
- System should have a single footswitch for operating ultrasonic energy or advanced RF energy instruments
- System should have the ability to select handswitch or footswitch activation or both for Ultrasonic and advanced RF energy instruments and the ability to change selection during use
- System should not have minimal lateral thermal spread more than 1 mm.
- System should have onscreen warning display system for generator overheating, generator software upgrade, handpiece errors and instrument errors
- The hand piece for the system should come with an inbuilt transducer.
- System should be compatible for open surgery and for laparoscopic surgery.
- System should have different power settings levels with power level display for ultrasonic energy instruments.
- System should be equipped with advanced RF energy technology that provides temperature controlled energy delivery and temperature should not exceed 100*C.
- System should have Advanced RF Energy hand instruments that provide tissue / vessel seal strength to withstand bursting pressure of 7 times the systolic pressure.
- All hand probes for open and lap procedures should be able to simultaneously cut and coagulate tissues.
- System should have changeable length ultrasonic blade/hook for open surgery.
- System should have (45 to 90 degree on both side) RF articulating probe for laparoscopic surgery for easy access to anatomically difficult surgical sites.

- System should comprise of the following

Hardware:

1 Generator
2 Footswitch & Cable

Accessories:

1 Tranceducer
2 Tranceducer (light weight for open surgery)
3 Generator Cart
4 Adaptors for ultrasonic

Open Surgery Instruments (Ultrasonic cutting and coagulation device).

1. 9cm shaft, curved, tapered tip for precise dissection, seals 5 mm vessels, as well as lymphatic with16 mm active blade & 240-degree activation, triggers support multiple hand positions.
2. 17cm shaft, curved, tapered tip for precise dissection, seals 5 mm vessels, as well as lymphatic with16 mm active blade & 240-degree activation, triggers support multiple hand positions.
3. Ultrasonic hook with changeable length from 10-14cm for open surgery.

Open Surgery Instruments (Bipolar advance vessel sealing device):

1. Hand probes with 5mm shaft diameter, 25cm long with 5mm tip width.

Laparoscopic Surgery Instruments (Ultrasonic cutting and coagulation device):

1. 5mm Lap Hand Activated Curved Coagulating Shears capable of sealing blood vessels upto 5mm in diameter, 36 cm shaft length, ergonomic handle.

2. 5mm Lap Hand Activated Curved Coagulating Shears capable of sealing blood vessels upto 7 mm in diameter, 36 cm shaft length, ergonomic handle.

Laparoscopic surgery instrument (Bipolar advance vessel sealing device):

1. Articulating Laparoscopic probe probes with 5mm shaft diameter, 35cm long with 5mm tip width, Probe should have ability to rotate 360* and articulate 45*to 50* both sides.

19. Portable USG

A state of art fully digital, compact portable Colour Doppler Ultrasound machine is required suitable for vascular access (CVC placement, PICC, DVT), Nerve blocks (Lower as well as Upper Extremity), E-FAST examination, AAA Exam, small parts, applications in adults and pediatric patients, abdominal examination and also suitable for echocardiography, interventions etc. as per GTS.

General Technical requirement For TE :

General Technical Specification (GTS) for Portable Ultrasound with Colour Doppler System

A state of art fully digital, compact portable Colour Doppler Ultrasound machine is required with following technical features.

1. The unit should be compact, lightweight and portable.(weight less than 15 kg)
2. It should be suitable for vascular access (CVC placement, PICC, DVT), Nerve blocks(Lower as well as Upper Extremity), E-FAST examination, AAA Exam, small parts, applications in adults and paediatric patients, abdominal examination and also suitable for echocardiography, interventions. Multiple preloaded application presets should be available.
3. The unit must have real time compound imaging for improved contrast resolution and eliminating ultrasound artefact to achieve optimum image quality on convex & linear transducers
4. The unit should have automatic gain adjustment for B mode.
5. Adequate scanning depth must be available.
6. System should support broad band probes spanning with frequency range from 1 - 14 MHz (+1 MHz)
7. Imaging modes of Real time 2D, Colour Doppler, Pulsed wave Doppler, Continuous wave Doppler, Power (energy) Doppler should be available.
8. Controls for 2D mode: Total gain, depth, dynamic range, auto gain
9. System should have fast boot up to scanning as essential in critical and emergency situation in ICU.
10. Unit must be sturdy, resistant to breakage & damage.
11. Controls for colour Doppler: PRF, colour gain, position and size of ROI, steering of ROI, colour maps and colour invert.
12. Controls for pulsed Doppler: variable sample volume size from 1 to 5 mm or more,steer, PRF, baseline, gain, angle correction, spectral invert.
13. Cine memory on all modes.
14. DICOM ready system with print, save, modality work list for connecting to DICOM network.
15. Flat LCD/ TFT monitor of approx. 25 cm
16. Alphanumeric soft keys keyboard with easy access scans controls, sanitization of system keyboard must be possible to avoid cross contamination.
17. Onboard storage of at least 10000 images. Storage in BMP and AVI format should be possible. Sorting of database with patient name and date should be possible.
18. USB port for connectivity to computer.
19. Unit should function with 200-240 V, 50 Hz AC, 5 amp power outlets. Specify power requirement.
20. Must be able to operate both on AC and inbuilt battery. Inbuilt battery pack should be self-recharging and should last at least for 90 min when fully charged. Price of extra battery (optional) to be quoted.
21. Transducers:

i. High Frequency Linear transducer 6-12 MHz (+/- 1 MHz) for vascular access, small parts, vascular, musculoskeletal Interscalene, Supraclavicular, Axillary.

ii. Convex 2-5 MHz (+/- 1 MHz) for deep nerve access Specially Celiac , Epidural, Subgluteal Sciatic nerve & abdominal applications

22. US FDA and CE (European) approved.
23. Suitable indigenous Mobile Trolley/Cart for the offer portable Ultrasound machine shall be provided.

(a) 95% up time Warranty of complete equipment with provision for extension of Warranty period by double the downtime period.

(b) All software updates should be provided free of cost during Warranty & CAMC period.

24.Training module/gel/slab/phantom for needle direction & placement
25.Software for needle enhancement image
26. Add-on (Optional) items
27. The price of the following Add on (optional) items to be quoted separately:

a. Compatible Phased array 2-4MHz(+/-1MHz)for Adult Echocardiography as per GTS
b. Compatible Endo-cavity Transducer as per GTS

P10x- 4-8 MHz Ped Cardiac Transducer
HFL38x- Linear Array Transducer
Imported Trolley
Triple Transducer Connect

20. ICU Bed

1 ICU Bed Manual

ICU Beds are required in the Intensive Care for comfort of the patient and to facilitate comfortable transfer to and fro emergency/OT/Wards etc. It is also required to carry out point of care procedures including radiological procedures at the bedside.

2 Operational Requirements: -

The system should be manual operatable and adjustable for heights, trendelenburg etc.

3 Technical Specifications

a) Should have four section mattress base

b) Base frame & support frame should be made up of steel for long life & prevention from rusting.

c) Should have stepless manual adjustment for the following:- Height : 450-840 mm Back section : 0- 50 degrees Leg Section : 0-30 degrees

d) Should have stepless pneumatic/ manual adjustment for Trendelenburg (20-25° approx), antitrendelenburg (10-15° approx)

e) Should have a manual quick release mechanism for back section adjustment during emergency situation.

f) Should be equipped with four articulated half length tuck away side rails

g) Should be equipped with large castors (diameter 150 mm) with central braking and steering facility.

h) Mattress of the Bed should be made up of high density foam with Anti Microbial agent incorporated into all components that assists in Prohibiting growth of bacteria & fungi and easy to clean.

l) Should have bumpers at all four corners and place for fixing accessories

j) Dimensions of bed : Length : 2100 -2290 mm Width : 850 -1020mm Mattress Size : appropriate as per bed size

4 :System Configuration Accessories, spares and consumables

a) I.C.U Bed Mainframe -01

b) Bed Ends, detachable : 01 pair

c) Articulated half length tuck away side rails : 02 Nos.

d) IV Rods : 01 No.

e) Mattress 12 cm Thick : 01 No.

5: Environmental factors

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

b) The unit shall be capable of being stored continuously in ambient temperature of -20 -50 C andrelative humidity of 15-90%.

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

6: Standards, Safety and Training

a) Should be USFDA compliance

b) Electric Shock Protection level-Class-B

c) Electric current Protection- Class -1

d) 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: Documentation

a) Certificate of Calibration and inspection from the factory

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

c) List of important spare parts and accessories with their part number and costing

d) 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. Price of accessories should be quote separately

9:. Warranty / after sale service: -

Three year comprehensive onsite warranty of entire system (Spares and labour) including all accessories. This will be followed by 7 years CMC. In case down time exceeds 5%, penalty in the form of extended warrantee, double the number of days for which the Equipment goes out of service, will be applied

To Supply with some minor Changes in the side rail, mattress and wheels.

Group-C: G. I. Surgery

1. UPPER & LOWER GI VIDEO ENDOSCOPE

The Endoscopy system must be Suitable to **produce High Resolution & High Magnification Images** of GI Tract with ability to detect early cancers and pre –neoplastic lesions by optical image enhancement system.

"The system must have the facility to provide the images with optical chromo endoscopy **by three different light bands (Multi Band)**".

HIGH DEFINITION VIDEO PROCESSOR

Special Features:

- **System should be on High Definition Platform , Max resolution 1080p**
- Should provide full screen image with wide angle.
- Fully compatible to the color systems PAL & NTSC
- Individual contrast and brightness adjustments in 3 levels
- Should be equipped with special communication system with Xenon Light source to control all the features of light source with scope remote switches e.g. brightness, air flow etc.
- Digital Zoom Function
- **Should be Equipped with chromo endoscopy (S- Technology/NBI/I-scan) facility.**
- **Should be equipped with PIP feature and should be able to produce side by side display of live white light and chromo endoscopy images.**
- **Should have USB interface at front panel for Image & Video storage & rear for compatible USB Printers**
- **Should have following HD out-puts**
  HD-SDI- 1no.
  DVI- 2 Nos

Light Source:

- High-Intensity 300 watt Xenon (with a lamp of life of 500Hrs Minimum) OR Equivalent LED light source (with an average lamp life of 30,000 hours).
- Color temperature of 6000 K - like daylight - guarantees color fidelity
- Should have integrated air insufflation Pump to perform video GI endoscopy procedures.

CO2 Insufflator: FROM SAME OEM

Compatible Co2 Insufflator (separate unit or inbuilt in Light Source) to perform all kind of GI therapeutic Procedure should be Supplied.

HDTV 16: 9 widescreen Monitor LED- 26 Inches

The monitor should have:

HDTV display in original 16: 9 HDTV format.
1080 p/ 50 & 1080 p/60 displays possible.
LED crystal display.
Max. Resolution of 1920X1080.
Screen diagonal – 26".
Desk top with pedestal.
Should have the facility of PIP mode.

Specifications

HD TFT Flat Screen Monitor with stand size 26",
Aspect Ratio 16:9 HD format
Brightness: 500 cd/m2
Maximum viewing angle: 178° vertical

Contrast ratio: 1400: 1
Reaction Time – 8ms
Rated power: 115 watts

Power Supply 100-240 VAC

Screen Dimensions: 643 x 396 x 87mm

Video Inputs: 2* DVI-D, 2* 3G SDI, 1* S Video, Composite 1* RGB/VGA, 1* RS

232,1* RJ 45 Interface.

Output: 1* DVI, 1* 3G SDI, 1* S-Video

Accessories External 24VDC Power Supply, Mains Cord, Pedestal.

Certified to: EN 60601-1, protection class IPX 1

Gastro videoscope

- Built in HDTV compatible CCD with close focus observation capacity
- Should have optical enhancement technology i.e. NBI / BLI / OE i SCAN
- Fully immerssible in disinfectant solution

Field of view	:	140 degree or more
Direction of view	:	0 degree, forward viewing
Depth of field	:	must be 2-100 mm or better
Distal end outer diameter	:	9.2 mm or less
Insertion tube outer diameter	:	9.2 mm or less
Tip Bending rage	:	Up 210 deg, Dn 90 deg, Lt & Rt 100 deg.
Working length	:	1030 mm or more
Channel inner diameter	:	2.8 mm or more

Colonovideoscope

- Built in HDTV compatible CCD with close focus observation capacity
- Should have optical enhancement technology i.e. NBI / BLI / OE i SCAN
- Fully immerssible in disinfectant solution
- Auxilary water jet for mucosal cleaning

Field of view	:	140 deg or more
Direction of view	:	0 degree, forward viewing
Depth of field	:	2-100 mm or better
Distal end outer diameter	:	13.2 mm or less
Insertion tube outer diameter	:	12.8 mm or less
Tip Bending range	:	Up & Dn 180 deg, Lt & Rt 160 deg.
Working length	:	L : 1680 mm I: 1330 mm or more
Channel inner diameter	:	3.7 mm or more

Equipment Cart

Should be from the same endoscope manufacturer company and have following specifications -

Equipment cart, rides on 4 antistatic dual wheels, 2 equipped with locking brakes (front), 3 fixed shelves, 1 with handles, mains switch in vertical beam, 1 drawer unit with lock, integrated cable conduits in both vertical beams, 1 set of non-sliding stands for units, double rear panel with integrated electrical sub distributors with 12 sockets, holder for power supplies, potential earth connectors and cable winding on the outside, 1 camera holder, 2 equipment rails sidewise, 2 handles sidewise Dimensions: Equipment cart: 530 x 1455 x 645 mm (w x h x d), shelf: 430 x 480 mm (w x d), caster diameter: 125 mm.

Special Note: All the quoted scopes should be compatible with all the features available in video processing unit and from same manufacturer only.

- Colour Printer (Ink Jet)- 1pcs with Blue tooth connectivity
- UPS
- Voltage stebilizer

2. MOBILE ELECTRO-HYDRAULICOPERATION THEATER TABLE

- MobileORtablewith**electricalhydraulicdriveviaintegratedbatteries**and mainspowersupply.
- Provision for adjustment of base locked / unlocked via hand control unit by means of a four post**, self-levelling hydraulic lockingsystem.**
- OR table in standard configuration of the tabletop generally capable to support a max. patient weight of 450kg or more in normal orientation for all articulating patient positions and 225kg. or more in reverse orientation for all articulating patientpositioning.

- Maximum tabletop height: 1050mm or better and minimal tabletop height: 650mm orbetter.
- It should be used for future ORintegration.
- OR tabletop should be equipped with unobstructed intraoperative access for the C-arm over the full length. Tabletop can be subdivided into 4sections:

  1. Head rest, with up / downarticulation
  2. Back rest,detachable
  3. Seat plate with perinealcut-out
  4. Split Leg rest,detachable

- The tabletop should be equipped with a powered kidney elevator for 110mm or more between the back and the seat plate to enable stronger flexion to the patient'sbody.
- Thebacksectionshouldbecompletelydetachabletoallowtheuseofseveralpositioningaccessories.
- The Table should be designed completely without X-ray interfering crossbars, for large scale application abilities of theC-arm.
- Guide rails underneath the tabletop should allow for inserting of X-ray cassettes over the complete length, including the area of the central seatsection.
- OR tabletop surface should be of radiolucent – Phenolic for superior imaging andstrength.
- TheLegPlateshouldbemotorizedandSplitinnaturewiththefacilityofdualabductionandlegspread forMISsurgerywithCrashPreventionfeaturetoavoidaccidentaldamageoftheBaseand/orLegplate in low heightpositions.
- The adjustments of hydraulically powered motions can be controlled electrically from outside the intervention area via cable connected hand control and hand pendant withbacklight.
- The Table should have full manual back-up. All powered functions can be controlled manually via an additional control unit. Foot pump should be integrated in the table, which can be operated manually by a retractable foot lever in case of anyfailure.
- In case of any technical failure, all table adjustments can be operated independently by activating the auxiliary control unit & footlever.
- There should be integrated software for controlling the crash into table base or into floor when standard tabletop sections are attached.
- There should be maintenance-free batteries, with a capacity for approx. 50 - 80 surgical operations or one week of operation. The battery charge-level can be monitored electronically and should be indicated optically on the handcontrol.
- ORtableadditionallyequippedwithintegrated**powerdriveunit**toprovideeaseofmanoeuvring when moving the table over longerdistances.
- Forinstanttroubleshootidentification,theTableshouldhavetheprovisionofRS-232PortforDevice Control & Computer Assisted Error Diagnosis for Easy and FastService.

Accessories for each Table:

1.	Anesthesia ScreenwithClamp	1no.
2.	Standard Arm boardwithClamps	2nos.
3.	BodyRestraintStraps	2nos.
4.	RadialSettingClamps	8nos.
5.	ShoulderSupports	2nos.
6.	Knee Cruthces, Goepel with Clamps&Straps	2nos.
7.	Lateral Support SystemwithClamps	1Set.
8.	GelHeadStabilizer	1no.
9.	Yellofin Stirrup --	2 Sets

3. 4K LAPAROSCOPIC SYSTEM

- **4K imaging System should have integrated /separate unit of Camera Console, LED /Xe Light Source & Imaging Management System.It should have intuitive tablet controller to control fetaures of imaging system. The Tablet should have provision to drape in a cover for used in a sterile field. Camera console, LED/XE light source & Image Management System should have following features—**

A) 4K Camera Console:

- The Console should combine the latest technology, 4Kvision (2160p), 4K 3-Chip CMOS camera with 10- bit for 1 billion colorization.
- Built in Wi-Fi router for wireless connectivity
- One Console and One Unique Tablet Interface should simplify use, and programmable individual surgeon preferences to enhance the user experience.
- Camera rear Panel should have numerous input & Display Port/DVI Outputs/3G SDI Outputs.
- Camera should have resolution of 3840X2160 lines with Progressive scan Technology.

B) LED/XE Light Source –

- LED light source should have 30,000-hour Life span (14 years at 40 hours per week)
- Xe light source should have atleast 500 hour Life span.
- Should have 7 Year warranty against LED Engine.
- Compatible with Light Cables of Different Manufactures

C) Image Management--

- DICOM Capability -Pictures should be Exported to PACS
- Should have provision to Export data to Network (Shared Folder)
- Export of Images/Video to USB, I-Pad, Desktop, Laptop through Networking/Wi-Fi connectivity.
- Should have network based Live video streaming.
- Should have 128 GB or more Storage Space in Console.
- Surgeons should review, edit, annotate and tag stills and video recordings, as well as create and instantly transmit images, videos and educational postoperative reports to patients with help of IPad.

D) Ultra HD 4K Camera Head – 01 No

- 4K Camera head with resolution of 3840 x 2160 Pixel(8.3 Million Pixels)
- Camera Head should be of Titanium Housing and Hermetically Sealed for Autoclaving
- Camera Head should have Programmable Buttons to Set Surgeon Preferences.
- Titanium housing with 2 programmable buttons for 5 functions (4 individual presets + White Balance)
- 1.5x digital zoom
- Camera Head should have 7 Years warranty against autoclaving

2) UHD 4K Monitor – 1 No

- 50-58" 4K monitor with Resolution of 3840 x 2160 (4 times HD)
- Picture-in-Picture and Side-by-Side Display Modes
- Versatile Multi-Format Signal Support

3) Video Cart – 1 No

- Shockproof powder-coating
- Anti-Static roller set with cable guards Ø 125mm
- Detachable cable guards
- 4 lockable castors
- Isolating transformer 2000VA with earth leakage guard
- 5 storage shelves
- 1 extendable storage shelf approx. 150mm
- 1 storage shelf with handle
- Drawer
- Mounting position for central-monitor-mount
- Mounting position for articulation-monitor-arm
- Mounting position for tablet-arm
- Cable winding aid
- Foot pedal holder, Camera holder
- Fluid bag holder
- Tubing clamp
- Power column with 10x power cables and equipotential bonding cables

4) 4K Laparoscope 30° - 1 No

- 4K Laparoscope 30° should have diameter of 10 mm with length 300-330mm.
- The scope should be fully Autoclavable.
- Offer High depth of field focus with high 4k resolution all the way to the edge of picture
- Anti-reflective coated, high-quality glass cone (insight light post)

5) <u>Fiber Optic Light Cable</u> - 2 No

Fiberoptic Light Guide Cable fused at proximal end to maximize light transmission having diameter of 5 mm & length 2.5-2.7 mm

Sr. No.	Description	Qty.
	Basic Lap Instruments	
1.	VERESS Pneumoperitoneum Needle with spring loaded blunt style, LUER-lock, length 13 cm & 15 cm	1
2.	Trocar, size 11 mm, color code: green, consisting of: Trocar only, with pyramidal tip Cannula without valve, with insufflation stop- cock, length 10.5 cm Multifunctional Valve, Three part dismantel. With Washers pack of 10 (Threaded)	2
3.	Trocar, size 11 mm, color code: green, c consisting of: Trocar only, with blunt tip. Cannula without valve e, with insufflation stop- cock, length 10.5 cm Multifunctional valve, size 11 mm	1
4.	Trocar, size 6 mm, consisting of:Trocar only, with pyramidal tip Cannula without valve, with insufflation stop- cock, length 10.5 cm Multifunctional Valve, Three part dismantel. With washers pack of 10	2
5.	Trocar 11 mm diameter with thread and rotating insufflations, should have multifunctional valve to prevent damage of sharp instruments and tip lens while passing through the cannula valve. It should have stopcock for CO2 insufflation. The working length of the cannula should be 105 mm. Telescope Stopper.	1
6.	Trocar 6 mm diameter with thread and rotating insufflations, should have multifunctional valve to prevent damage of sharp instruments and tip lens while passing through the cannula valve. It should have stopcock for CO2 insufflation. The working length of the cannula should be 105 mm. Telescope Stopper	2
7.	. Trocar, size 11 mm, consisting of: Trocar only with blunt tip Cannula without valve, with insufflation stopcock, with 2 flanges for fixation of sutures length 13 cm Automatic valve Sliding Cone	2
8.	Forward-Oblique Telescope 30° enlarged view, diameter 10 mm, length 31 cm, autoclavable, fiber optic light transmission incorporated. connection for fiber optic light cable offset by 90°.	1
9.	Forward-Oblique Telescope 30° enlarged view, diameter 5 mm, length 29 cm, autoclavable, fiber optic light transmission incorporated, connection for fiber optic light cable offset by 90°.	1
10.	Injection Needle, LUER-lock, diameter 1. 2 mm, size 5 mm, length 36 cm.	1
11.	Reducer 13.5/10 mm	1
12.	Reduction Sleeve, 11/5 mm	1
13.	KELLY Dissecting and Grasping Forceps, rotating, with connector pin for unipolar coagulation, size 5 mm, length 33-36 cm -1, double action jaws, consisting of: Plastic Handle, without ratchet Outer Tube, insulated Forceps Insert, Three part dismantel.	1
14.	KELLY Dissecting and Grasping Forceps, rotating, with connector pin for unipolar coagulation, size 5 mm, length 42-45 cm double action jaws, consisting of: Plastic Handle, without ratchet Outer Tube, insulated Forceps Insert, Three part dismantel.	1
15.	Click Line Dissecting and Grasping Forceps, rotating, with connector pin for unipolar coagu- lation, size 5 mm, length 33- 36 cm, right angled, double action jaws, consisting of: 33151 Plastic Handle, without ratchet, with larger contact area 3	1
16.	Click Line Dissecting and Grasping Forceps, rotating, with connector pin for unipolar coagu- lation, size 5 mm, length 42-45 cm, right angled, double action jaws, consisting of: 33151 Plastic Handle, without ratchet, with larger contact area 3	
17.	Click Line Dissecting- and Grasping Forceps, rotating, with connector pin for un ipolarcoagu- lation, size 5 mm, length 33- 36 cm, """alligator jaws"", double actio n" jaws, consisting of: 33151 Plastic Ha ndle without ratchet, with larger contac	1
18.	Click Line Dissecting- and Grasping Forceps, rotating, with connector pin for un ipolarcoagu- lation, size 5 mm, length 42-45 cm, """alligator jaws"", double actio n" jaws, consisting of: 33151 Plastic Ha ndle without ratchet, with larger contac.	1
19.	Click Line BABCOCK Grasping Forceps, rot ating, with connector pin for unipolar c oagulation, size 5 mm, length 36 cm, atraumatic, jaws with multiple teeth, fenestrated, long, single action jaws, consis ting of: 33151 Plastic Handle, without r	1
20.	Click Line BABCOCK Grasping Forceps, rot ating, with connector pin for unipolar c oagulation, size 5 mm, length 45 cm, atraumatic, jaws with multiple teeth, fenestrated, long, single action jaws, consis ting of: 33151 Plastic Handle, without r	1
21.	Bowel Grasper, rotating, with connector pin for unipolar coagulation, size 5 mm, length 36 cm, double action jaws, consisting of: Plastic Handle, without ratchet, with larger contact area Outer Tube, insulated.	2

22.	Bowel Grasper, rotating, with connector pin for unipolar coagulation, size 5 mm, length 45 cm, double action jaws, consisting of: Plastic Handle, without ratchet, with larger contact area Outer Tube, insulated.	2
23.	CROCE-OLMI Grasping Forceps, rotating, dismantling, insulated, with connector pin for unipolar coagulation, with LUER-Lock connector for cleaning, single action jaws, atraumatic, fenestrated, curved, size 5 mm, length 36 cm consisting of: Plastic Handle, without ratchet Metal Outer Sheath, insulated Forceps Insert, Three part dismantel.	2
24.	CROCE-OLMI Grasping Forceps, rotating, dismantling, insulated, with connector pin for unipolar coagulation, with LUER-Lock connector for cleaning, single action jaws, atraumatic, fenestrated, curved, size 5 mm, length 45 cm consisting of: Plastic Handle, without ratchet Metal Outer Sheath, insulated Forceps Insert, Three part dismantel.	2
25.	METZENBAUM Scissors, rotating, dismantling, insulated, with connector pin for unipolar coagulation, with LUER-Lock connector for cleaning, double action jaws, curved, length of blades 15 mm, size 5 mm, length 36 cm consisting of: Plastic Handle, insulated, without ratchet Metal Outer Sheath, insulated Scissors Insert for use with trocars size 6 mm, Three part dismantel	1
26.	METZENBAUM Scissors, rotating, dismantling, insulated, with connector pin for unipolar coagulation, with LUER-Lock connector for cleaning, double action jaws, curved, length of blades 15 mm, size 5 mm, length 45 cm consisting of: Plastic Handle, insulated, without ratchet Metal Outer Sheath, insulated Scissors Insert for use with trocars size 6 mm, Three part dismantel	1
27.	single use scissor insert Pack of 10 (1X10)	1
28.	Suction and Irrigation Tube, anti-reflex surface with two-way stopcock, for single hand control, size 5 mm, length 36 cm	1
29.	Suction and Irrigation Tube, anti-reflex surface with two-way stopcock, for single hand control, size 5 mm, length 45 cm.	1
30.	OLSEN Suction or Irrigation Tube, with protection basket, with trumpet valve, size 10mm length 36Cm.	1
31.	OLSEN Suction or Irrigation Tube, with protection basket, with trumpet valve, size 10mm length 45Cm.	1
32.	Dissecting-Electrode, L-shaped, size 5 mm, length 36 cm, with connector pin for unipolar coagulation, consisting of: Outer tube, insulated Plastic handle Electrode L-shaped With Trumpet handle	1
33.	Coagulating and Dissecting Electrode, L-shaped, with connector pin for unipolar coagulation, size 5 mm, working length 36 cm	1
34.	Coagulating and Dissecting Electrode, L-shaped, with connector pin for unipolar coagulation, size 5 mm, working length 45 cm	1
35.	KOH Macro Needle Holder, ergonomic axial handle with disengageable ratchet, ratc het release on the right side, left curved jaws, with tungsten carbide insert ø 5 mm, length 33 cm	1
36.	KOH Macro Needle Holder, ergonomic axial handle with disengageable ratchet, ratc het release on the right side, left curved jaws, with tungsten carbide insert ø 5 mm, length 45 cm	1
37.	KOH Macro Needle Holder, ergonomic pisto l handle with disengageable ratchet, ratchet release on the right side, straight jaws, with tungsten carbide insert ø 5 mm, length 33 cm.	1
38.	KOH Macro Needle Holder, ergonomic pisto l handle with disengageable ratchet, ratchet release on the right side, straight jaws, with tungsten carbide insert ø 5 mm, length 45 cm.	1
39..	Needle holder self-rotating function 5 mm , 33 cm	1
40.	Claw Forceps, rotating, size 10 mm, length 36 cm, 2 x 3 teeth, single action jaws, consisting of: Metal Handle, with MANHES style ratchet Outer Tube, insulated Forceps Insert, Three part dismantel.	1
41.	Sterilization Tray for 2 Telescopes (Same manufacturer)	1
42.	Sterilization Tray for instruments (Same manufacturer)	1
43.	Articulated Stand , reinforced version , U shaped with One mechanical central clamp for all five joint functions with quick release coupling for instruments and Telescope.	1
44.	**Instrument Oil,** 50 ml, silicone-free	1
45.	**Wadding Silver Polish** "duraglit"	1
46.	**Cleaning Brush,** round, rigid, outer diameter 16mm for working channel diameter 4 – 14 mm, length 55 cm	1
47.	**Cleaning Brush**, round, rigid, outer diameter 11 mm, for working channel diameter 3 – 9 mm, length 35	1
48.	**Cleaning Brush**, round, rigid, outer diameter 7 mm, for working channel diameter 2.5– 5 mm, length 35 cm	1
49.	**Cleaning Brush**, round, rigid, outer diameter 2.5 mm, for working channel diameter 2– 2.4 mm, length 35 cm	1
50.	**Brush** flat for cleaning jaws	1
51.	Nathamson Liner retractor, 5mm, Medium size – 1	
52.	Autocorrecting needle holder – 5mm, length 36 cm	1

4. INTRAOPERATIVE VIDEO-CHOLEDOCHOSCOPY

SPECIFICATION	**Quantity**
TECHNICAL SPECIFICATION	1

□ Distil tip outer dia: 8.5 Fr.	
□ Angle of view: 90deg.	
□ Direction of view: 0 deg.	
□ Deflection of distal tip: 270 deg up and 2700 deg. down	
□ Working length: 70 cm.	
□ Instrument channel: 3.6 fr	
Come in standard set	
Should be sterilizable with ETO & FO GAS, steris and sterrad	
Case	1
Pressure compensation cap, ETO cap	1
Leakage tester , with bulb and manometer	1
Cleaning brush	1
Applicator and guide tube,	1
Biposy Forceps, 3Fr, double action, Flexible 100cm	1
Grasping Forceps, 3Fr, double action, Flexible 100cm	1
Stone basket sterile, for single use, 2.5fr, length 120cm	1
Luer Adaptor with seal	1
Seal, for instrument port	1
Cleaning Adaptor, for instrument ports	1
Not in Standard Set	
Three part laparoscopic autoclavable BERCI Grasping Forcep with silicone pads, 360 degree rotational sheath, size 10 mm, length 36 cm, long, double action jaws, with metal handle, can be dismantled with the press of a button.	1
Silicone pads compatible with BERCI forcep insert, package of 10	1
Should have Cholangiography Catheter Guide, for catheters with max. size 2.4 mm, with distal angulation distal 90 angulation downwards	1
OLSEN Cholangiography fixation forceps clamp with channel for catheter 6fr, length 27Cm, for use with trocar size 6mm	1
Micro Knife, straight, distendable, size 5 mm, length 31 cm	1
Micro-Knife, pointed, distendable, length 31 cm, size 5 mm	1
Two way stopcock, for contrast medium and saline solution	1
Tubing, flexible with 2 LURE-Lock, connectors	1
PART- : - CAMERA CONSOLE TECHNICAL SPECIFICATION	
a. Connect with integrated and digital image processing module for use with flexible video endoscopes with standard HD/ full HD.	1
b. Power supply 100 - 120 VAC/200 - 240 VAC, 50/60 HZ, it should have mains power cord with length 300 cm.	1
c. DVI-D connecting cable, length 300 cm connecting cable, length 100 cm USB flash drive(32 GB), USB keyboard, with touchpad	1

5. SPECIFICATION OF URETEROSCOPE

1. Uretero- Reno scope-1 pcs

It should have the following features:

- Direction of view should be 5-12 degree.
- Distal end outer diameter should be around 8.0-9.0 Fr.
- Working channel diameter should be 400-450mm.
- Single/dual working channel- incorporated/detachable instrument port with sealing system and quick release lock, 2 channels.

- Working channel diameter should around 5-7 Fr.
- Semi-rigid type.
- Angled eye piece
- Atoclavable.
- Atraumatic tip design.
- 2 Lateral irrigation port.
- Built – in maintainance free stop cocks.
- It should be supplied with following items
  a) Self-sealing cap- 10no.
  b) Autoclavable instrument tray.
  2. Grasping forceps for stone fragments, double action jaws, 3-4 Fr, Flexible/Rigid,autoclavable, length 55-60 cms-2pcs.
  3. Grasping forceps for large stone fragments, double action jaws, 5Fr, Flexible/Rigid, length 55-60cms-2 Pcs.
  4. Accessories (for each scope)
     a. Handle-1
     b. Membrane sea (Pack of 10)-2
     c. Membrane retainer, standard-1
     d. Membrane retainer with luer-1

Stone therapy with laser, ultrasound, electro-hydraulic or ballistic lithotripsy should be feasible. Rigid auxiliary instruments should go through the straight instrument channel. Use of flexible axillary instruments or two different instruments such as laser fibre of electro hydraulic probe and stone extractor to stabile and retrieve the stone fragments should be possible.

All instruments should be CE and FDA approved.

6. SPECIFICATION FOR NEPHROSCOPE

The system should have following:

- Telescope: OTY 1 no. each.
  a) 20 – 22 Fr. Autoclavable, with >12 fr working channel and having working length or more than 30mm
  b) Should have maintenance free stopcocks.
- Sheaths and hand instruments
  The system should have quick snap on mechanism. Sheath should have matt finish for staying of lubrication get reduce friction trauma to patient. Maintenance free stopcocks needing no lubrication.
- Rotatable outer sheath:QTY 1 no each.
  a) Should be 24-26 fr for compatible telescope 20-22fr, autoclavable, with >12 fr working channel with standard hollow obturator.
- Hand instrument:QTY 2 no. each.
  a) 380mm-400mm grasping forceps, toothed.
  b) 380mm-400mm grasping forceps, with fenestration.
  c) 380mm-400mm grasping forceps, three nail.
  d) 380mm-400mm biopsy forceps for collecting samples of biopsy.
  e) 380mm-400mm compatible knife to be used with nephroscope.
  f) Compatible scissors for use with nephroscope set.
  g) Sickle knife for use with nephroscope set.
- The eye piece should be compatible with standard endovision camera head.
- Accessories- standard
- Storage and transportation tray.
- All instruments must be CE and FDA certified wherever applicable.

Group-D: Obstetrics & Gynaecology

1. TECHNICAL SPECIFICATION OF CELL SALVAGE & SCAVENGING SYSTEM (CELL SAVER)

System should be capable of processing blood collected from a surgical site to produce washed red blood cell to return to patient later on.

1. System should work on centrifuge principle and should operate on 0- 60000 rpm with variable speed wash.
2. System should have a smaller foot print with big lockable castor wheel and weight should be less (inclusive of accessories and cart) for ease of mobility.
3. System should be fully automated with single button operation with self-start capability and absolutely minimal user intervention.
4. The system has an in-built and regulated vacuum suction.
5. Centrifugal bowl capacity should be 100-250ml with two stage filling cycle.
6. The system has variable speed pulse wash cycle.
7. System should be approved by US FDA/BIS for autologous blood transfusion.
8. Three Suction options, on board:
   i. SMART SUCTION TECHNOLOGY (volume based)
   ii. Regulated on board suction,
   iii. Post-op suction.
9. A built in barcode reader to record disposable set, solutions and operator / patients information.
10. The ability to download data using a USB flash drive.
11. A color touch/soft key screen display.
12. The noise level of the device should be < 70 db.
13. Device should have effluent line sensor, reservoir level sensor and automatic bowl identification program.
14. RBC recovery should be more than 90%.
15. The device should have post-operative mode to work even after surgery by collecting the blood from the disposable tubing placed in the wound.
16. Completely automated postoperative operation.
17. The device generates the suction in the reservoir.
18. The device begins the processing cycles when an appropriate amount of blood solution collects in the reservoir.
19. System specification:
    i. Electrical Specification: Class I, type B, Ordinary, Continuous operation
    ii. Power-
        a. Voltage: 110/120 or 220/240 V
        b. Cycles: 50-60 Hz.
        c. Phase- Single
        d. Current- 11.6/0.8 amps (depending upon voltage selection)
        e. Fuses- 4AT/240V
        f. Power cord: 2 wire ground (earth) connection, 3 prong hospital grade.
    iii. Speed and flow rate specifications-
        a. Centrifuge- 0-10,000 rpm.
        b. Pump- 0-600 ml/min (+/-5%)
    iv. Vacuum- 200- 280 mbar
    v. Temperature Limit
        a. Operational: 10-30°
        b. Storage: 5-30°

vi. Humidity Range

a. Operational 10-95% non-condensing
b. Storage 10-95% non-condensing

20. Should be supplied with 10 sets of consumable accessories in addition to the offered disposable accessories by Supplier along with the one pack of machine.

21. Rates of consumable items should be quoted separately and the company would undertake to supply at the same price for three years, the same would be included in calculation of financial bid.

Group-E:LaboratoryItems

1. **Turnkey Project for Automation of Indoor Blond Collection Processes with Installation of APTL its Integration with HIS & Connectivity with existing Blood Transport system.**

Specification of Turnkey project for Indoor Ward Block Blood collection APTL system

1. Supply of a Blood Collection Support System that promises Safety, efficiency and error free Specimen labeling of Tubes.
2. Bench- Top System, that can be installed anywhere, without worrying about the design or layout.
3. Tray Feed :Manual
4. Number of Tube stocker: Maximum – 7 stocking chambers, or more (expendable as per Customer's requirement).
5. Each chamber having capacity to store up to 20 tubes.
6. Max number of Tube types supported :7 or more diferent kinds of tubes.
7. Total Tube Capacity: 140 Tubes(in 7 stockers).
8. Applicable Tube size: Diameter of 12 to 16 mm and Length of 75 to 110 mm with stopper.
9. Automatic Tube preparation: Useone tray for each patient.
10. Number of discharged Tray: At a time 1 Tray. Discharge of prepared tray is under control of the Laboratory staff.
11. Throughput/hour: Minimum 1400 Tubes/Hour.
12. Automatic Tube selection as per Test requisition of each patient.
13. Automated Barcode Labeling: It can stick labels precisely at the correct position and the position can be easily changed (if required) as per the Tube size; to adopt to various kind of downstream analyzers.
14. Automatic Patient ID Verification.
15. Automatic Tube selection.
16. Operator can Designate Order of Draw for the tubes.
17. Identifies & Prints all the Patient related information like name, Age, Sex, Analyzer type, Ward, Bio-Chemistry or Haematology, etc.
18. System can dispenses all the Tubes (and extra tables) for the Tests like Urine, Sputum or Stool(as per Patient Test requisition), along with the Summary of the work-list (in the form of a Patient kit).
19. Printing method: Direct Thermal.
20. System should support Interfaces with LIS/HIS.
21. UPS must be supplied as per the required spec of I KVA online.
22. Table and chair for APTL system must be provided With each APTL Units.
23. Vein Illumination device with table mounting system with each APTL unit.
24. Sample transport system connectivity with software each points connection for patient sample transport from Indoor to Laboratory.
25. Software support and Interface for APTL must be incorporated with existing sample Transport system.
26. APTL and Sample transport system must be integrated with the existing HIS and Blood sample transport system.
27. Please Quote Unit wise cost for Rate contract basis for our any additional Quantityrequirement.
28. Rates of each unit must be Valid for atleast 4 years for Direct ordering process under Rate contract.

Group-F:CTVS

1. SPECIFICATION OF HEART LUNG MACHINE-01 no.

1. Description of function

1.1 Heart Lung Machine is an apparatus through which blood is temporarily diverted, during heart surgery, to oxygenate it and pump it throughout the body, thus maintaining circulation until the heart and lungs are able to return to normal functioning

2. Operational requirements

2.1 BASIC EQUIPMENT will consist of the following unit

1) 5- Pump Console

2) Temperature Control Module (Hypo-Hyper thermia unit)

3) Monitors:

a) Pressure monitor – arterial and cardioplegia with transducers

b) Time – at least three timers

c) Temperature Monitor with at least two probes

d) Display of total volume of each infusion along with delivery time

4) a). Air- Oxygen Blender with hoses and Flow meter

b). CO2 Blender Optional

5) Safety Devices –

a) Level Sensor

b) Ultrasonic air sensor (optional)

2.2 ACCESSORIES will include

1. Stainless steel line clamps

2. Stainless steel intra cardiac suckers

3. Remote Control module for Temperature Control Monitor Instrument tray with mounting arm S.N. Technical Specifications

3.1 5- Pump Console

1. The unit should have 5-pump console compactly arranged with separate power supply and control modules. Should have easy access connectors for interchanging the pump.

2. Each individual roller pump should be capable of running independently on 180-270 V/50- 60 Hz or DC supply.

3. Should have a spill proof base.

4. The unit should be supplied with a Battery backup for at least two pumps, all safety systems and accessories for a minimum of 60 minutes. Switch over from main power to battery backup should be automatic and immediate. The battery unit should be built in to the pump base and it should be recharged automatically when the system is operating with main power supply.

5. Individual pump heads should have Harvey Roller pumps with facility for tubing to be used adjustable and easily changeable mechanism.

6. Individual pump heads should have display in digital –The total infusion volume in litres and delivery time, the flow rates in LPM and in RPM

7. Each Pump should have easy mechanism for occlusion setting for different thickness of tubes available in the market

8. Should have unidirectional hand crank facility as a critical safety feature hand crank loading should be from top for faster access.

9. The Console should have a compact base mount for the entire pump heads together, with pole and handles.

10. Should have variable, changeable tubing holders in each pump head

11. Should have movable oxygenator holder.

12. Roller pump should have a self diagnostic circuit with provision to detect and display critical alarm conditions. Optional Pulsatile module which can be mounted on any of the blood pump.

3.2 Should have a venous control module with single pole mast with electronic venous line occluder.

3.3 Should have a monitor mount with adjustable monitoring arm

3.4 Instrument tray positionable with long monitoring arm

3.5 Lightweight surface table; writing surface

3.6 **TEMPERATURE CONTROL MODULE (Heater Cooler Unit):**

Temperature control and Monitor system with Cardioplegia supply and remote Temperature display with the following features:

1. Simultaneous delivery of water for arterial and cardioplegia heat exchangers and to thermal blankets to be available from suitable ports.
2. To work with power supply of 220± 20 V 50 Hz.
3. Pressure regulated blanket ports maintaining the temperature of the arterial port.
4. Temperature display range of 0- 50 ° Celsius; remote accuracy of 0.3 ° Celsius and remote temperature display unit module with 3-temperature display.
5. Microprocessor based unit to control, cool, re-warm and maintain temperature.
6. Water outlet temperature of heat exchanger and blanket range 0-42° C.
7. Maximum flow performance of oxygenator heat exchanger supply port 15 – 22 LPM for fast cooling; 480mmHg maximum pressure; Blanket 1.5 to 2.5 LPM at zero head.
8. Built in lce Maker to provide 50 lbs of ice in about 8 hours from 25º C water.
9. Should be capable of providing ice water for cardioplegia independently with variable cooling rate
10. Rewarming facility with venous difference mode settable at 6 to 10 ° C gradients to hold the water bath temperature at higher than the venous blood temperature.
11. Temperature probe module for the operating ranges of 0-50° C.
12. Temperature probes to fit in standard oxygenators (bubble / membrane)
13. Optional remote control unit should be capable of taking 9 Temp. Probes and display temperature in digital readouts. Alarm limits setting for at least three probes at crucial sites.
14. Product should be US-FDA / European CE approved.

3.7 **MONITORS:**

PRESSURE MONITOR: Facility to monitor one arterial line pressure and one cardioplegia line pressures (total 2); along with necessary pressure transducers, cables six (2 x 3 = 6) and domes reusable, with accurate digital display and alarm facilities audio and visual.

TIME MONITOR: Facility for 4 time displays -- 2 for arterial and 2 for cardioplegia delivery. With stop, reset and start function.

TEMPERATURE: 6 temperature displays for patient monitoring and for cardioplegia monitoring with digital display in Celsius with 6 necessary compatible temperature 6 probes and 6 additional probes (6x2=12 probes) with 3x2 = 6 of them for nasal, rectal and oesophageal use

3.8 **AIR- OXYGEN BLENDER:**

To work at 50-60 PSI for membrane oxygenator with water trap attached with necessary hoses and connections of minimum of 5 meters length and with triple flow glass flow meters.

3.9 SAFETY DEVICES: Safety monitor should have optional capability for computer interface to retrieve perfusion data

ULTRASONIC AIR SENSOR: Ultra sonic air sensor to detect bubbles to work equally well with crystalloid and blood; should be possible to fit anywhere in the circuit easily.

LEVEL SENSOR SYSTEM: Ultrasonic transducers to work well with crystalloid and blood with adhesive pads, with alarm settings.

3.10 **ACCESSORIES:**

1. STAINLESS STEEL LINE CLAMPS for cardio pulmonary bypass 12 Nos.
2. Remote Control Module for the Temperature Control Monitor

   Optional remote control unit should be capable of taking 9 Temp. Probes and display temperature in digital readouts. Alarm limits setting for at least three probes at crucial sites.
3. Instrument Tray with Mounting Arm
4. At Least Two Thermal Blanket.
5. On Line Measurement of PH, PCO2*& HB FOR NEONATAL CARDIAC SURGERY

4. System Configuration Accessories, spares and consumables

4.1 12 Stainless steel line clamps

4.2 Remote Control module for Temperature Control Monitor

4.3 Instrument tray with mounting arm

4.4 Machine cover

4.5 System should be provided with appropriate furniture like adjustable revolving chair for the perfusionist to operate the system. The system should contain all the above accessories in Integrated or as separate accessories.

5. Environmental factors

5.1 The unit shall be capable of operating continuously in ambient temperature of 10 -40^0 C and relative humidity of 15-90%

5.2 The unit shall be capable of being stored continuously in ambient temperature of 0 -50^0 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 180-270VAC, 50-60 Hz,/440 V 3 Phase as appropriate fitted with special imported plug dedicated to the unit.

6.2 Resettable over current breaker shall be fitted for protection

6.3 Suitable UPS of with voltage regulation and spike protection for 60 minutes back up.

7. Standards, safety and training

7.1 Should be US-FDA or European CE approved product (Copy has to be enclosed)

7.2 Electrical safety conforms to standards for electrical safety IEC-60601 / IS-13450

7.3 One engineer should be posted for a week to impart training

7.4 Manufacturer should have ISO certification for quality standards.

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 available in stock with the supplier.

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 Preventive Maintenance Support as per manufacturer documentation in service/technical manual

2. SPECIFICATION OF CELL SAVER-01 no.

1. Description of Function

1.1 The Cell Saver system reprocesses blood for the patient and separates it into blood cells and plasma. Used in Surgical procedures in which there is rapid bleeding or high volumeblood loss. It can also separate and remove clotting agentsfor the plasma. In this manner, blood may be prepared for long term storage or may be re-infused back into the patient during surgery. This reduces the need for blood from donors.

2. Operational Requirements

2.1 Manual & Automatic operation

2.2 Compact, portable design

3. Technical Specifications

3.1 Spinning centrifuge

3.2 Built-in programming

3.3 Built-in safety features

3.4 Sound volume control

3.5 Automatic protocols

3.6 Set up guide

3.7 The equipment should have inbuilt and regulated vacuum pump to suck the blood.

3.8 Centrifuge speed should be adjustable from 0 to 10000 RPM with variable speed wash. The pump flow 25 to 1000 ml. per minute.

3.9 System should have smaller foot print with big lockable castor wheel and weight should be less then 35Kgs.(inclusive of accessories and cart) for ease of mobility.

3.10 System should be fully automated with single button operation with self start capability and absolutely minimal user intervention.

3.11 Centrifugal bowl capacity should be 125-150ml with two stage filling cycle.

3.12 System should be approved by US FDA for autologous blood transfusion.

3.13 The company should quote a price for buy back of the existing machine (one) on an "as is where is" basis including the physical shifting of the machine.

3.14 It should have display to show all information during the operation as pump speed, centrifuge speed and alert messages.

3.15 The equipment should be able to separate lost blood, anti coagulant, filter store concentrate and wash.

3.16 Beside the RMC separation and washing it should able to sequester plasma and platelet from salvaged blood in separate bags

4.System Specification, Accessories, spares and consumables

4.1 Electrical specification:
Class I type B, ordinary Continuous operation.

4.2 Power :
Voltage – 220/240V or 110/120
Cycles – 50-60 Hz.
Phase – Single.

4.3 Speed and Flow rate specification :
Centrifuge – 0-10000 rpm.
Pump – 0-600 ml/min (+/- 5%)
Vacuum – 200-280 mbar.

4.4 Temperature Limit :
Operational : 10-40^0
Storage : 5-30^0.

4.5 Humidity range :
Operational : 10-95% non-condensing.
Storage : 10-95% non- condensing.

4.6 30 .disposables should be provided with equipment
4.7 All consumables required for installation and standardization of system to be given free of cost.

5.Environmental factors

5 .1 The unit shall be capable of being stored continuously in ambient temperature of

05 - 30^0 C and relative humidity of 10-95%

5 1 The unit shall be capable of operating continuously in ambient temperature of
05 – 40^0 C and relative humidity of 10-95%

6. Power Supply

6.1 Power input to be 180-270VAC, 50 Hz Fitted with Indian plug

6.2 Suitable UPS of rating with spike protection, voltage regulation and for 60 minutes back up.

7. Standards, Safety and Training
7.1 Should be USFDA and European CE approved product
7.2 Manufacturer/Supplier should have ISO Certification for quality standards.
7.3 Comprehensive training for lab staff and support services till familiarity with the system.

8 Documentation
8.1 User/Technical/maintenance manuals to be suppliedinEnglish
8 . 2 Certificate of calibration and inspection.
8.3 List of Equipments available for providing calibration and routine maintenance support as per manufacturer documentation in service/ technical manual.
8.4 List of important spare parts and accessories with their part number and costing.
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.

3. SPECIFICATION OF IABP (INTRA AORTIC BALLOON PUMP)-01 no.

IABP (Intra Aortic Balloon Pump) - High End.

1 Description of Function

1.1 Intra-aortic balloon pump (IABP) is a mechanical device that is used to decrease myocardial oxygen demand while at the same time increasing cardiac output. By increasing cardiac output it also increases coronary blood flow and therefore myocardial oxygen delivery.

2 Operational Requirements

2.1 Microprocessor / microcontroller based system. System should be complete with Display Control system and pneumatic drive unit.

3 Technical Specifications

3.1 Pneumatics:

Drive system: Stepper motor driven bellows

Drive gas- Helium (Available with disposable canister or refillable cylinder.

Pumping Volume: 0.5 cc-50 cc Counter pulsation rate: 40-200 pulsations per minute

3.2 In Automatic Mode: System should be capable of automatically selecting appropriate trigger i.e. ECG or Pressure and also accurately select the inflation and deflation points, in automatic mode. In automatic mode of operation user should be in control of the deflation point. In Automatic mode Advance software should automatically adapt the timings for various rhythms and rate variations, without any user intervention. In Automatic mode it should automatically identify Arrhythmias and adopt R wave deflation mode for better patient support, without any user intervention In Manual mode the system allows user control of most of the pump functions.

3.3 Should be able to trigger on 7 mm Hg of Pulse pressure when used in Pressure Trigger mode

3.4 Single key start-up to make it fast, user friendly and easy to use

3.5 Should be able to display at least 3 wave forms as ECG, Invasive Pressure and Balloon Pressure wave forms

3.6 Large display for brighter and very good visibility from a distance in lighting conditions

3.7 On screen indication for Helium level in the cylinder and battery level for timely intervention and correction.

3.8 ECG inflation marker to indicate inflation period on ECG which can be useful when arterial pressure form is not available.

3.9 On screen indication of standby time and should give alarm after 15-30 minutes, to draw user's attention on the system being on standby

3.10 Optical Blood leak detect for early indication of blood coming into the balloon lumen due to IABC leak

3.11 Should have extensive Help Text available during start-up to make the system easy to use even for new users.

3.12 Should give extensive Help messages to correct the alarm conditions that are specific to the alarm condition. This should help the user to overcome the alarm problems immediately and with ease.

3.13 Should be capable of removing condensation automatically without user intervention and should be maintenance free.

3.14 Should have Peripheral Vascular Doppler for detecting limb ischemia, which is attached to the main equipment

3.15 Should have automatic Altitude correction to make it safer for the use during Air Transport

3.16 Should have software which allows the user to monitor the IABP from any remote location via a modem

3.17 In-built Comprehensive Service Diagnostics to help the technician to locate the fault immediately

3.18 Should have capability to connect on the Hospital network

3.19 Integrated Printer OR Chart recorder to print the reports.

4 System Configuration Accessories, spares and consumables

4.1 System as specified-

4.2 System should be supplied with the following:

ECG cable with Refillable Helium cylinder compatible with the IABP system Qty: 3 Nos.

4.3 Intra Aortic Balloon Catheter for Adults, Size: 40 cc Qty: 2 Nos.

Reusable Invasive Blood pressure transducer system with pressure flush device system. Qty: 2 Nos.

5 Environmental factors

5.1 Shall meet IEC-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 -50deg C and relative humidity

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

6 Power Supply

6.1 Power input to be 220 V AC, 50Hz fitted with Indian plug

6.2 On line UPS of suitable rating with voltage regulation and spike protection for 60 minutes back up.

7 Standards, Safety and Training

7.1 Should be US-FDA/ European CE approved product (Copy has to be enclosed)

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

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

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

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

4. SPECIFICATIONS OF INVASIVE CARDIAC MONITORS-05 nos.

1. Description of Function

a. Capable of providing bedside monitoring of multiple parameters for adult, pediatric 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. Technical Specifications

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

5.SPECIFICATIONS FOR ICU VENTILATOR- HIGH END-02 nos.

The ventilator should be microprocessor based and work with hospital external high pressure line/ external compressor to be used in ICU for Adult, Paediatric and infant patients. It should be easy to use having a color inbuilt touch screen at least 12 inch or more in size with screen lock, intuitive menu structure, , Mode preset capability, Pressure bar graph/ breath indicator and prioritized alarms alongwith the following settings/ features :-

1. Ventilation Mode

Volume Controlled ventilation (Assisted / Control)	VCV
Pressure Controlled ventilation (Assisted / Control)	PCV
Synchronized intermittent mandatory Ventilation	V-SIMV AND P-SIMV
Pressure support ventilation (Spont, CPAP, PEEP)	PSV
Non invasive ventilation	VCV, PCV, SIMV, PSV
Volume assured pressure support	VAPS
Mandatory rate ventilation	MRV
Airway pressure release ventilation	APRV/BI-PHASIC VENTILATION
Pressure regulated volume control	PRVC
Continuous positive airway pressure	CPAP

2. Ventilation Settings & Ranges

Tidal Volume	20 ml to 2000 ml or more
Inspiratory Peak Flow	0 to 200 LPM (Compensated) [preferred]
Maximum Inspiratory Peak Flow	> 200 l/min (depending on gas supply pressure)
Respiratory Rate	upto 100 BPM

SIMV Respiratory Rate	1 to 60 BPM
Inspiratory plataeu	0 to 60 % of IT
FiO2	21% to 100%

Insp pause, Exp Pause, sustained exhalation, programmable sigh

Inspiratory Trigger (pressure and flow trigger)

Should have apnoea back up of atleast 20 seconds.

3. Monitored Parameters

Respiratory Phase & Type, Respiratory Rate, Exhaled Tidal Volume, Exhaled Min. Volume Total, I : E : Ratio, Peak Inspiratory Pressure, Average Pressure, Plateau Pressure , End Expiratory Pressure, % Oxygen Delivered, f/Vt (RSBI), etCo2(End tidal Co2)

4. Respiratory Mechanics Maneuvers

Static Compliance and Resistance ,

Low Inflation flow (LIP) and upper inflection point (UIP),

Some form of alveolar recruitment monitoring to be present to determine the right level of PEEP.

5. Displayed Trends Values for 72 hours atleast

6. Graphics Module with

Scalars

Flow vs. Time
Pressure vs. Time
Adjustable Time Scale.

Loops
Flow / Volume
Pressure / Volume

Facility for Freeze Screen

Individual Analysis of Each Curve
Loop Save and Overlay Function
Individual Analysis of Each Loop

Calculated Values

Inspiratory pause, Expiratory Pause

7. Should have audio-visual alarms alongwith appropriate message for

Inspiratory pressure (High), circuit, FiO2 (High/Low), Resp Rate, Tidal volume, minute ventilation,

8. The ventilator should have built-in programmable nebulizer

9. AC Power & Battery Indicators

- Loss of AC Power (visual)
- Charging, In Use, Low
- Main Battery in Use
- Should have at least one hour back-up

10. Self Test / Self Diagnosis

- Quick Self Test and Extended Self Test

11. Interface Port

RS - 232 Output and Remote Communication

12. Ventilator should be European CE and USFDA APPROVED

13. Scope of supply

Ventilator	– 1 No
Air supply unit	– 1 No (OPTIONAL)
Patient Tubing (adult)	– 2 Nos/unit
Patient Tubing (paed)	– 2 Nos/unit
Nebuliser Kit	- 50 Nos/ Ventilator

NIV Mask with harness (Reusable) - 2 Nos in each category/ Ventilator

Humidifier (F&P 810) with chamber - 1 No/ Ventilator

Bacteriological filters - 10 Nos/ Ventilator

Reusable mask(adult and pediatric) - 2 each

14. OPTIONAL ITEM

1. Air compressor(from the same manufacturer)

15. The quote should quote with 3 years comprehensive warranty (including labour and spares) and 7 years CMC (including labour and spares).

16. DEMONSTRATION IS MUST AS AND WHEN REQUIRED.

6.SPECIFICATION OF ACT MACHINE-02 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

7. SPECIFICATION OF ETHYLENE OXIDE STERILIZER-01 no.

1) Chamber - SS 316

2) Insulation of shell - 50 mm thk. R.B. fibre glass with aluminum foil.

3) Door - Single, SS 316, hinged type

4) Paneling - SS Box type design. PLC, temp. Controller, Compound gauge and switches will be located within the panel .

5) Mode of heating - Chamber will be heated with electric air heaters of 3 KW.

6) Vacuum pump - Diaphragm type vacuum pump provided to achieve high level of air removal for high sterility.

7) Gas Purging - **Two Cycle ,One for** cartridge puncturing and another ETO gas Gas Cylinder System should be available in PLC.

8) Sterilization Process - One no. sterilization cycle with inbuilt leak test will be provided, which will be completed automatically.

9) Stand - SS.

10) Accessories - 1 no. wire basket for chamber
1 no. air compressor of 1HP.

11) Chamber Size - 10-12" X10-12" X 20- 24"

12) Aeration time - pulsing system by vacuum pump within 40-60 minutes.

13) Product should be **CE** Certified.

14) Company should have valid ISO (9001-2008 & 2003-13485) certificate.

15) Company should have manufacturing experience more than 10 years.

8. SPECIFICATION OF EXTERNAL PACEMAKERS-SINGLE CHAMBER-06 nos.

Single 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.

9. SPECIFICATION OF EXTERNAL PACEMAKERS- DUAL CHAMBER-03 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.

10.SPECIFICATION OF SYRINGE INFUSION PUMPS-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%

Equipment Specifications for Syringe Infusion Pump

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 US FDA or CE approved 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.

11.PORTABLE HEAMODIALYSIS MACHINE-01 no.

a. Portable Haemodialysis Machine
Should have facility for acetate & bicarbonate Haemodialysis.
Machine should have facility for HD, SLEDD, Online HF & Online HDF.
Machine should have facility for paediatric HD & online HDF.
Machine should have special Paediatric user setup with more sensitive thresholds.
Machine should have Venous access monitoring system.
Machine should have facility to determine the venous needle disconnection (blood wet sensor).
Machine should have Blood volume monitoring system.
Machine should have automatic adaption of the ultrafiltration according to the measured relative blood volume change.
Machine should have 15" high-resolution TFT LCD with touch screen user interface. Monitor rotatable around the 3 axes.
Machine should have Display failure sensor.
Machine should have Operating status indicator.
Machine should have automatic & online priming facility.
Machine should have Automatic control of the substitution rate by considering blood flow & UF rate.
Machine should have online reinfusion facility.
Should have balancing chamber with closed loop system.
Should have automatic self -test facility.
Should be able of arterial and venous pressure monitoring.
Should have Ultrasonic Air bubble detector.
Should have integrated Heparin pump with flow rate from 1-10 ml/hr (0.1 ml increments).
Should have Facility of cumulative graphical display of treatment data and physiological trends including sodium and ultrafiltration profile.
Should have Blood pump delivery rate from 30-600 ml/min and the direction of rotation of the blood pump is monitored.
Blood pump should have separate switches for Blood system Start and Blood system Stop.
Machine should have online arterial bolus facility.
Should have variable dialysis flow rate from100 ml/ min-1000 ml/ min.
Machine should have flush option for Rinse of water supple line.
Machine should have Economical flow option for saving the Dialysate during preparation and reinfusion
Machine should have the smart dialysate flow function to regulate the dialysate flow depending on the blood flow automatically.
Should have volumetric concentrate dilution facility.
Should have conductivity measurement range: 12.8 – 15.7 ms/cm.
Should have temperature control range: 35 - 39°C in 0.5°C increment.
Should have volumetric ultrafiltration range 0 - 4 L hr, Pump volume accurancy: ± 1%
Machine should have isolated ultrafiltration process.
Should have facility of online preparation of bicarbonate dialysis fluid with dry bicarbonate cartridge.
Machine should have Blood temperature monitoring facility.
Machine should have inbuilt Blood pressure monitoring system.
Should have two ultrapure dialysate fluid filter, with retention capacity not less than 10^{-6} IU
Should have one touch fully automated integrated disinfection and decalcification.
Should have battery backup for at least 20 minutes in case of power failure.
Should have build in Online Clearance Monitoring for real-time measurement of urea clearance (KT/V) and plasma sodium
Should be upgradable to future software developments and can be linked with Patient Data Management System.
Should be upgradable to single needle with double pump,
Should be CE ("conformiteEuropeene")/US FDA Certified
Manufacturer should have all pediatric to adult range of disposables (Dialyzer, blood tubing and etc..) for dialysis treatment.
Bidder should supply 3KVA online UPS with 30 minutes backup for each machine.
b. Portable Water Treatment Unit
Should be compact preferably on wheels for easy movement.
Should be able to produce 125 litrs/Hours of permeate
Should be Microprocessor based
In build Capabilities to show on display for Permeate (Supply in liter/min, Temperature) & for
Raw water (Consumption in Liters/min & Pressure)
Should have build in dual column softener with fully automated brine, fill and clean cycles, also have a brine tank incorporated in the system.
Should have build in cartridge type Charcoal Filter.
Should have fully automatic disinfection system in place.
Should have build in cartridge filter of 10 Micron.
Should have programmable fully automated Rinse cycle for membranes wash.
Machine should run ONLINE mode of Permeate Supply, permeate supply is to be used to run dialysis machines directly without collecting permeate to tank it should be possible.
There should be a water saving system in place which adjusts the output to the number of machines in use and control yield accordingly.
Yield setting should be between 50to 70%.
Conforms to AAMI standards of purity for Hemodialysis use.

Machine should have 20 micron filter at water inlet.

12. SPECIFICATION OF SURGICAL LOUPE-02 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

13. SURGICAL HEAD WITH XENON LIGHT-02 nos.

Specifications:

1. Light source unit should be 300watts xenon light technology having four standard cable port which can be used with other cables and head band

2. Light intensity should be between 390-920 lumens, which can deliver bright light.

3. The colour temperature should be between 5700kelvin to 5900kelvin, which ensure the light intensity near to daylight.

4. Unit should have stand by switch which can remember the last setting used, and should be having smart fan technology; Light intensity should vary from 20-100% in 5% increment.

5. Unit should be able to display lamp and system age meter.

6. For future expansion unit should be compatible with head light camera system.

7. Unit should be supplied along with original company mobile floor stand. The said stand should have a forward facing basket and/or hooks to sore the cable and headlight when not in use.

8. Head band should be of maximum comfort with cushions having occipital basket and cranial support and should have extended linkage

9. The light spot size should be adjusted between 20mm-180 mm at various distances.

10. Unit should be supplied along with premium fully fused fiber optic cable having a length of 9 feet (2.75meter), which should have higher temperature resistance (421 - 485*c) and ensure bright light transmission.

11. Cable diameter should be 3- 5 mm which ensure it is light weight, and outer sheet should be translucent which provide full visualization of fiber integrity.

12. All four items Light, stand, head band, and cable should be from one company brand

13. The light company should be US FDA or European CE approved, which determine the higher quality of product quality.

Documentation, standards & Safety

1. User/Technical/Maintenance manuals to be supplied in the English with provision of onsite installation and demonstration.

2. Should be compatible with electrical supply available in IGIMS, Sheikhpura, Patna. It is the responsibility of the vendor/manufacturer to ensure that the product quoted is compatible for use in CTVS OT at IGIMS, Patna. Any suggestions in this regard may be enclosed as a report in the quotation as well.

3. Warranty for the Xenon light source should be three years and be a 1000 – 2000 hours for the xenon bulb (if the bulb goes off before 1000 hour it should be replaced free of cost). Minimum warranty on head band should be six months.

4. CAMC should be quoted for another Seven years. Terms and conditions of CAMC should be clearly mentioned.

5. If installations have been done in India, especially in government institutions, details of the department, institution, purchase/supply order and configuration should be provided

6. A point to Point Statement whether the product quoted conforms to each of the specifications listed above duly signed by competent authority, should be enclosed with the quotation

7. Demonstration of the product is mandatory and the quote may be rejected if not demonstrated.

8. For scheduling a demonstration please contact the Office of the Director, IGIMS

14. SPECIFICATION OF STERNAL SAW-02 nos.

Sternum Saw Hand piece:

1. Should have Safe Mode
2. Should have minimum 14000 CPM
3. Weight of hand piece with battery should be not more than 3.5 lbs
4. Should have Pistol grip Hand piece
5. Should have tool less mounting of accessories for all blades or attachments
6. Saw noise level should not more than 93db
7. Should be ETO / Autoclavable.
8. The sternal saw is light weight and provide clear line of sight.
9. The sternal saw operates through a flexible drive cable by an electric motor/ Battery.
10. The blade holding mechanism is chuck type assembly for quickly replacing the blades.
11. The saw should have a blade protector on it and blade protector should be easily replaceable. Additional 10 blades of sterna saw should be provided.
12. Foot/Hand switch permits variable saw speeds with waterproof and anaesthetic agent proof..
13. The system operates on be 220V/250Hz. Single phase.
14. Should provide minimum1 Nos. of sterile micro oil 300 ml.
15. Overheating cut off of motor with reset facility.
16. With different blades it should have maximum speed of 14000CPM
17. Should have option of Sternum Guard.
18. Should be provide with Battery kit and Battery Charger and the sterilization case
19. Should be CE certified and US FDA approved.
20. Demonstration of the product is must.

Battery Charger:

1. 220-240 volts charger and should have the feature to count the charging cycle for a particular battery.
2. Should have capability to identify the worn out battery
3. Should have to charge four batteries at a time
4. Should have an indicator to provide battery status for charging.
5. Should be able to check over autoclaved battery cycles (Number of Time and Total time)
6. Should have reconditioning features for battery
7. Should be able to charge different batteries with same charger.
8. Should be CE certified and US FDA approved.
9. Demonstration of the product is must.

Battery Kit:

1. Ni Mh batteries with low internal impedance to deliver higher current than other battery Types.
2. Ni Mh cells with capacity to produce more torque and non autoclavable with life of 300 approximate charging cycles.
3. Should have a run time of minimum 21 minutes
4. Should include Autoclavable outer housing

5. Shield to protect battery from the housing
6. 180 degree opening of battery housing for easy insertion of battery
7. Should have option for autoclavable batteries.
8. Should be CE certified and US FDA approved.
9. Demonstration of the product is must.

Sterilization Case:

1. Should accommodate all hand piece, attachment and accessories for autoclave.
2. Demonstration of the product is must.

15.SPECIFICATION OF REDO STERNAL SAW-01 no.

Saggital Saw (Redo) Hand piece:

1. Should have two speed controls with standard and fast mode. Free speed of 10000-12000 Cycle's per minute.
2. Saw Noise level should not more then 89db
3. Weight of hand piece with battery should be not more than 3-4 lbs
4. Blade mount should be adjustable to different angles with 360 degree rotation
5. Should have tool less mounting of accessories
6. The sternal saw is light weight and provide clear line of sight.
7. The sternal saw operates through a flexible drive cable by an electric motor.
8. It is able to be ETO Sterilized/autoclaved.
9. The blade holding mechanism is chuck type assembly for quickly replacing the blades.
10. The reciprocating blade has a 5mm stroke length.
11. The saw should have a blade protector on it and blade protector should be easily replaceable. Additional 10 blades of sterna saw should be provided.
12. Foot switch permits variable saw speeds with waterproof and anaesthetic agent proof..
13. The system operates on be 220V/250Hz. Single phase.
14. Should provide minimum1 Nos. of sterile micro oil 300 ml.
15. Overheating cut off of motor with reset facility.
16. Should be ETO/autoclavable
17. Should have safe mode.
18. Should be provide with Battery kit and Battery Charger and the sterilization case
19. Should be CE certified and US FDA approved.
20. Demonstration of the product is must.

Battery Charger:

10. 220-240 volts charger and should have the feature to count the charging cycle for a particular battery.
11. Should have capability to identify the worn out battery
12. Should have to charge four batteries at a time
13. Should have an indicator to provide battery status for charging.
14. Should be able to check over autoclaved battery cycles (Number of Time and Total time)
15. Should have reconditioning features for battery
16. Should be able to charge different batteries with same charger.
17. Should be CE certified and US FDA approved.
18. Demonstration of the product is must.

Battery Kit:

10. Ni Mh batteries with low internal impedance to deliver higher current than other battery Types.
11. Ni Mh cells with capacity to produce more torque and non autoclavable with life of 300 approximate charging cycles.
12. Should have a run time of minimum 21 minutes
13. Should include Autoclavable outer housing
14. Shield to protect battery from the housing
15. 180 degree opening of battery housing for easy insertion of battery
16. Should have option for autoclavable batteries.
17. Should be CE certified and US FDA approved.
18. Demonstration of the product is must.

Sterilization Case:

3. Should accommodate all hand piece, attachment and accessories for autoclave.
4. Demonstration of the product is must.

16. SPECIFICATION OF SURGICAL INSTRUMENTS SET-02 nos.

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 **RYDERNEEDLE 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 cuttingforceps** – 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.

Group-G: Mobile Ophthalmic Unit

1. VEHICLE SPECIFICATION

Sl. No.	VEHICLE SPECIFACTION	TATA/MAHINDRA/EICHER
	MAKE	
	MODEL	
1	Fuel type	Diesel
	Engine no	497CR
	Warranty	3 Years/3 Lakh KM
	Gradeability	26%
	Engine Cylinder	4
	Cluch	330 mm dia
	Transmission	5 speed manual (5F+1R)
	Gear Box	GBS 40
	Max. Torque	400Nm@1300-1500 rpm
	Fuel Injection System	Common Rail
	Fuel Tank Capacity	160 Litres
	Max Speed	80 kmpl with speed Limiter
	Electricals/Battery	12V,150Ah,65 Amps
	Chassis frame	Ladder type frame with riveted/bolted cross member
	Max Width	2495 mm
	Wheel Base	5345 mm
	Engine Location	Front
	GVW	12670 Kg.
	Axle Configration	4 X 2
	Front Suspension	Semi-elliptical leaf springs, with telescopic shock absorbers
	Rear Suspension	Semi-elliptical leaf springs, with telescopic shock absorbers
	Tyres	9x20-16PR6+1 Tyres
	Turning Circle Diameter	20.5 m
	Overall Length	10401 mm
	Front overhang	1755 mm
	Rear Overhang	3200 mm
	Front Track	1964 mm
	Rear Track	1806 mm
	Driver Seat Type	4 Way adjustable
	Sterring Type	Power
	Sterring Adjustment	Rigid
	Instrument Cluster	Analog with LED display
	Service Brakes	Air Brakes
	Parking Brakes	Spring actuated acting on rear wheels
	ABS	Yes

(2.)Fabrication details For Mobile Ophthalmic Unit	
	Description:
Body shape & size	Slightly Round shape Body Overall Length-10450mm Over all Width-2500 mm Over all Height-2800 mm Internal Height-2000 mm EYE clinic Cabin Size-3900*2400*2000 cb mm(13 ft*8ft*6.5ft)
Body Skelton	Channel (4*2)-Sail make
	Rectangular Pipe -60*40,40*40,40*20 mm; thickness-14 gage (Galvanized pipe)
	Angle -1.25 inch,1.5 inch & 3mm thickness- standard
SplAttn	Complete Skelton –Treated By Red Oxide

Metal Sheet	GI metal Sheet-single stretch For Roof (Central Part) and Below the Window Portion-20 Gage(1 mm thikness);
	Side Lower portion of Body -14 gage Aluminum sheet
Floor	Plane Floor; Finished By Waterproof –ply board -17mm & PVC flooring (Responsive /LG make-2mm)
	PVC flooring colour-light blue finish; It is anti-skid & medicated
	Flooring -2 mm thick –Responsive/LG make
	At rear wheel- First we put colour coated sheet then 17 mm plywood
Insulation	Complete Body –insulated by Thermo-coal & Hit-lone; Three layer insulation;1st layer 12 mm Hitlone,2nd layer 30 mm thermocoal,3rd layer 6 mm hitlone
Interior	Complete Interior –finish by FRP (Fibre Re-enforced plastic)
	FRP moulded sheet supported by Metal re-enforcement
FRP	FRP of Binani make-double layer thickness -3 mm
	We apply Point adhesive & PU sealant to paste FRP
Window	One left & one right window in Eye testing cabin—either or open window as per customer choice
	Window Glass: Fixed/ open Glass window tinted-Green-Toughened (Not laminated)
Rear	Rear cabin as Lenses & Glass shop type outlet; Flap type door
Electrical	Electrical wire of Havelles (make-1.5mm,2.5 mm & 4 mm)
	Conceal wiring with proper flexible conduit/sleeves
	All switch & socket modular- Havelles/Anchor Roma make
Lights	Head Lights and Tail Lights standard; Two Fog Light at Front bumper
Light Bar	Public address system with Light Bar in Blue& Red colour Grand/Shiphon/Sholphin make- LED with 4 sound system
Blue light	Two revolving light at rear top on both side
Lights	12 volt light- 6 Number -LED/tube light 220 volt light 6 Number-LED /tube light
	All lights are LED with good illumination
Fan	Fan -12 v -carbonless –Parko/ Remmy -3 Number
	Fan -220 V –Olympus/Bajaj Make- 4 Number
Inverter	2000 va inverter with 200 Ah battery (Luminous/microtek)
	Inverter & battery -kept under chassis at right side with proper lock system
Power point	8 Number power point(2-2 on each side) with switches(6/15 Amp) for medical equipments –Electrical supply by Inverter
Head Rack	**One Number of head rack at either side to keep consumables &medicine**
Seat	Attendant Seat for 3 person with seat belt & back cushion ,if possible with both Chair unit
	Sofa Cum Bed type provision in Driver cabin as shown in Layout
Cabinet	Cabinet –as per requirement
	Cabinet made of Marine type board /ply and finished by Marino-AB+ laminate (Boverian beach colour)

Washing	Wash basin with all accessories Sanitizer and Tissue paper stand at each working table
Dust Bin	Two Number of Dustbin in Steel under Wash basin
Accessories	Sun-wizer before driver seating
	Mud-Flap
	Fire Extinguisher-2 kg;2 No
	Side View Mirror
	All equipment has to be kept in cabinet after eye camp
Table	Two working table for eye equipment
Seat	Two standard chair for medical staff and Two stool for patient
Dickey	2-3 dickey -provided under chassis for battery, inverter,
Generator and Power back (extra engine) for Air-condition	
Main Door	Entrance door at left Front side of vehicle with footsteps – comfortable ride by even senior citizen Door at rear Side –Flap type door (as per customer choice) with plastic Curtain in Rear lense Shop
	Plastic Flap to save cooling and dark colour curtain at Door to keep cabin dark at the time of testing (in Eye testing cabin)
	Footsteps -Finished by AluminiumChequered sheet
Branding	Name , Address, Logo of Ambulance & contact details in Radium on all side of vehicle (50 sqft)
	If customer need ,complete branding of Van by 3M radium / Vinyl-it will charge extra as per actual
Generator	Provision to install Generator of 6.5 Kva-Himalayan make ,on trolley that moves out for Fuelling and starting (Generator price not included)
Air- condition	Provision to install ductable Air-condition run on vehicle engine Air-condition work in only moving condition of Van (price of Air-condition not included)
Split Air- condition	Provision to install 1.5 Ton Split air-condition in Eye testing cabin and Split Air-condition -1 Ton in Rear lense shop(inverter technologybased) (both run by silent generator or out sourcing electricity)
Inverter	1000 Va inverter with 145 AH Battery (Luminous make)
	50 mtr long extension wire with socket for Charging inverter battery and out-sourcing electricity to van
Jack	Hydraulic Jack should be installed at below the Eye Clinic cabin (4 pillar/Leg system) to put the MMU in stagnant position during camp (Price ofJack not Included)
LED	Provision of 43'' LED on both side of Vehicle (LED price not included) on one side
Ophthalmic Chair Unit	1. Seat minimum height 550 mm 2. Seat maximum Height 710 mm 3. Up & down Stroke 4. Seat Rotation: 0 to 180˚ 5. Bck& Forward Movement: 95˚ to 175˚ 6. Net Weight: 189 kg 7. Load Lifting: 200 kg 8. Motor Available: 24V DC 9. Stabilizer required: 1 kva min. 10. Minimum area required: 8"x 10"
	Power Requirements: • AC Input: 230V AC 50 Hz • Fuses : 5A Slow Blow

	• Power in VA: 350 VA

Note:- Base Vehicle and Medical equipment's can be provided by

Customer Terms & condition:

1) **Delivery** : 6**0 days after purchase order andPayment**
2) **Taxes& Levies : Quoted extra in %**
3) **Warranty : 3 Year warranty for medical Equipment, one year except Glass & rubberpart; Warranty & service of Air condition & 7 Years CMC.**

2. Instruments for Mobile Ophthalmic Unit

Sl. No.	List of Equipment (To be installed)	
	Make	
	Model	
1	**NON MYDRIATIC FUNDS CAMERA :**	**Mydriatic and Non Mydriatic Imaging:**
	Photography Models	1. Color, Red Free and infrared imaging
	Focusing Mechanism	2. Auto- Focus & Manual Focus Wheel, ability to disable auto focus on a/Software
	Field of view	3.At Least 40 degrees Optical Magnification
	Diopter magnification	4. Compensation for Ametropia +35D…….-35D
	Light Source	5. Mydriatic mode: Cool white LED Non-Mydriatic mode: Infra-Red and Cool White LED ISO 15004 safety assured
	Levels of Illumination	6. Illumination levels controllable through software
	Regulatory Certification	7.CEI IEC6060-I, IEC6060-2, IEC62304,IEC62133 ISO15004-I-2, ISO10940, USFDA 510K
	AC power adaptor	8. 9V, 2A external CE marked medical grade adaptor
	Camera & Display Interface	9. Smartphone Camera with integrated smartphone based touch display
	Camera Resolution	10. Equal or greater than 80 Ip/mm at imaging plane traceable to ISO 10940 with at least 8 MP prixalresoluation
	Form &Construction	11. Fixed smartphone holder fixed to optical interface (W)(DHX)
	Battery & Back up	12. 7.0 V at least 1400 mAh Li-ion rechargeable battery
	Environmental	13.Operating Temperature 0 degree Celsious to 40 degree Celsius Relative humidity 10% to 95%
		14. iOS Operating System based , with built in Patient.
2	**Photo Slit Lamp:**	
	1. Slit width:0-8mm/0-14mm, continuous	
	2. Slit length:1-8mm/0-14mm,adjustable continuous	
	3. Slit angle:0 to 180 deg. Continuous both vertical and horizontal.	
	4. Decentering of slit image: +4 to -4 horizontal	
	5. Diaphragm sizes:0.2-8mm/0.2-14mm	
	6. Rotation :0.180 degrees.	
	7. Light source: halogen lamps/ Tungsten/LED	
	8. Slit tilt : 0-20 degrees.	
	9. Filters: cobalt blue, red free,neutral UV protection	
	10. Binocular microscope with standard objective and eyepieces	
	11. 5x------40x magnification in steps with drum rotation	
	12. 6--------40mm field of view	
	13. Movement (base movement (x,y,vertical), adequate chin rest)	
	14. Motorized table for slit lamp.	
	15. Attachment for Applanation tonometer.	

	16. Beam splitter and digital adapter.
	17. 8 GB SD/SDHC memory card and power cable
	18.Standard accessories: Spare Bulbs, Hurbey lens, Appalanation tonometer
	19. Suitable motorized stand.
	20. It should be Europeon CE & US FDA certified
3	**Auto Refractometre with Keratometer:**
	1. Objective ± subjective mode & measuring corneal astigmatism, low contrast glare acuity testing
	2. Measurable range- Sphere plus/ minus 20D, Cyl 0 to 7D, Axis 0 to 180, minimum pupil size 2mm, vertex distance 10.5,12.0,13.5 preferably wiot IOL mode and pront out facility
	3. High Accuricy measurements of corneal and contact lens radii determination of corneal astigmatism
	4. Distance independent co-independent measuring technique . Prism cells for contact lens measurement with power supply unit. Range 4mm to 13mm radius with 0.01mm increments. Halogen lamp illumination, steel ballsnstandard radius for calibration.
4	**Direct Ophthalmoscope:**
	1. Illumination:3.5V,2.8W Mini Halogen bulb
	2. Recharging unit: Input Voltage: 220V±10%V
	3.Input Frequency: 50Hz±1Hz
	4. Input Power:8VA
	5. Battery :Rechargeable BT224G
	6. Viewing Lenses:0,±1,±2,±3,±4,±5,±6,±8,±10,±12,±16,±20,-25,-35
	7. Apertures: Large Spot, Small Spot, Slit, Central Net, and Red-free New
	8. Weight:118g (Excluding battery)
	9. Total Weight: 340g
	10. Dimensions: 42mm x32mm x210mm
5	**Indirect Ophthalmoscope charger:**
	1. Apertures and filters: Can be "locked" into a desired position.
	2. Adjustment Levers: Also feature a " Friction-clutch" (Safety Clutch) to protect mechanisms from forced adjustment while in the "lock" position.
	3. Increased PD Range: From 46-74mm.
	4. Soft Touch Controls: All key adjustment controls feature soft touch surfaces for precise and positive adjustment control.
6	**Trail lenses set with trail frame:**
	1. Range of Binocular Pupil Distance
	2. Adjustment: 48-80mm PD
	3. Range of Monocular PD adjustment: 24-40mm
	4. Minimum Calibration Value:1mm
	5. Axial Calibration for Right Eye:45° through 180° to 135°
	6. Axial Calibration for Left Eye:120° through 0° to 60°
	7. Axial Calibration increases counter clock wise along the lens frame in increments of 5°
	8. Inner Diameter of Lens Frame:32.5mm
	9. Four lenses may be inserted in each side of frame simultaneously.
	10. Each Lans may be rotated around the entire 360° Displacement of the lens in relation to the position of lens
	11. Frame geometrical cener :< 0.3mm
	12. Nose pad adjustment length:0:14mm
	13. Nose Pad adjustment angle:0° to 30°
	14. Range of Temperature length adjustment:98:135mm
	15. Maximum width between the temples: 200mm 15. Weight:72g
	16. Trail Lens set:-Specifaction: Lenses contain Spherical +(+0.12D to+20D) Spherical -(-0.12D to-20D) Cylinder + (+0.12D to 6D) Cylinder + (+0.12D to 6D) Prisms(1 to 12) ACCESSORIES Slit, Red, Green, Pin Hole occiude.
7	**Vision Chart & Vision drum Paed:**
	1. Remote Control with Cord
	2. Compact & Light weight
	3. Pleasing colour to match all interiours
	4. Included colour deficiency test

	5. The Regular sequence of charts offered are- English,Hindi -Regional Language-C Chart- Dot Chart- All chart are available up to 6/4 vision (over correction)
	6. Regional language available
8	**Non-Contact Tonometer: Specification:**
	1.Measurement Range 0-60 mm Hg (0-30 mm Hg / 0-60 mm Hg 2.Pressure measurement: 1 to 60 mmHg (1 mmHg step)
	3.Working Distance 11 mm
	4.Measurement display TV monitor screen 5.R/L change-over ... automatically detected and displayed Up to three measurements of each eye can be displayed and printed out
	6. Measurement recording Built-in printer
	7. Measurement Mode: Auto start or manual (selectable) 8. Should have an error indication 9. Weight: less than 20 Kgs
9	**UPS: 2 KVA**
10	**Generator of Adequate capacity: 5 KVA**

NOTE

1. **The Make and model of the equipment with authority letter to be attached**
2. **The warranty of the equipment should be 3 years.**
3. **The firm has to quote CAMC for the equipment for the 7 years.**
4. **The firm should quote the price Separately for A and B.**
   a. **Vehicle + fabrication**
   b. **Cost of instruments**

Group-H: Central Library

1. Supply, Installation & Commissioning of RFID

TECHINICAL
SCOPE OF WORK:

01. Indira Gandhi Institute of Medical Sciences (Central Library Patna) intends to implement of RFID system to streamline its core library activities and anti-theft detection. For this purpose, it requires services of a competent entity which can understand the IGIMS, requirements and provide complete RFID system with installation and implementation .

02. Bidders are required to provide full details of RFID system. For Additional /More details bidder can attach separate sheet/Brochure/Documents in the Technical Bid with authorized sign and Stamp.

03. Technical Specification for RFID:-

Sr No	Item with specification	Qty.	Specification in detail
1	RFID Tags for Books (Self adhesive RFID tags for books)	**25,000**	Operating Frequency:13.56MHz, Dimensions 81 x 49 (I x W), Memory 1024 bits, with self adhesive backside. With Lifetime Warranty
2	RFID smart card Printer	**01**	Single Side Smart Card Printer (DTC 1250e) along with card printing software, printer Ribbon (Full Color-250 Prints/One Side), Cleaning Kit etc. Warranty/AMC 3 years.
3	SIP 2 integration with KOHA software	**01**	Integration of KOHA software with RFID (Bidder to link KOHA database with RFID details) (Software from RFID solution provider to link the transaction details to KOHA database)
4	RFID Smart Cards	**2,000**	**1024** Bits Memory, Frequency 13.56 MHz, Operation Mode Passive, Operating Protocol ISO 15696/18000-3, Size: CR80 with Gloss Printable Surface (Details to be printed on the smart card e.g. Student Name, PRN, Address, Parent Details etc)
5	RFID Staff Station	**01**	**COMMON FOR BOTH Sr. No.5 &6** Should provide option of having reader with Table top or underneath table/desk, shielded reader for restricted antenna fields. Power consumption: Max 30w Communication port: IP and Ethernet for Communication over web service Operation Temp: +10/+40 Frequency: 13.56MHz Antenna Power: Max 1 w Identification through IOS 15693/ISO 18000-3.1 The Staff station to be connected with existing PC and LMS without SIP2 or NCIP
6	RFID Circulation Station	**01**	
7	Library Security Gate single Aisle (EAS Pedestals)	**01 Set**	➢ The security gate must be made of Plexiglas and should be transparent. ➢ Two EAS Pedestal Library Security Gate (Quantity: One set) with in built Electronic control Unit. It should include two theft detection pedestals, 2 antennas for large detection field range of 1.35 mtr between two pedestals which are interdependent of each other and also have an overlapping protection zones providing additional security. ➢ Should have provision for Lights and buzzer. ➢ Chip compatibility: ISO 15693-3/ISO 18000-3 ➢ Detection Range: Upto 1 mtr (approx) between two Pedestals ➢ Communication ports: USB/UTP ➢ Tags with theft or security bits that are “on” must immediately trigger an alarm.

			➢ The Proposed system must item security even when the library Management system or network is off-line or not functioning. ➢ Should have suitable number of I/O ports for standard electronic counter, web cam, trigger, CCTV, Locking gates, etc. ➢ It must be Possible to easily remove the Anti Theft gates to allow Large objects like furniture to pass through (Optional) ➢ Should be supplied with an fully ROHS compliant Eco Reader to Save Power. ➢ Should be supplied with an fully ROHS compliant Eco Reader to saver power. ➢ Should support expansion to multi Aisle Gates. ➢ Certifications required: CE/EMC/UL/FCC ➢ (With advanced specifications and configuration)
8	Job work…… Books Tagging (Present stock of books with the IGIMS, as on the date of implementation)	**15,500**	Encoding of Books Details i.e. Accession No., Class No., etc. on RFID Tag and Shielding with institute Logo Sticker and re-shelving book back to its original location.
9	Wi-Fi RFID Handheld Reader for shelf Management	**01**	➢ Display with 3.5" QVGA touch screen, 240x320 pixels, 262k colours, Adjustable LED backlight, daylight readable, with numeric (alpha) Keypad, Battery Rechargeable, removable Lithium-Ion battery pack 2600 mAh @ 7.4V, 4800mAh @7.4V with pistol grip, Up to 30 hrs (standard battery) ➢ Desktop charging cradle with USB Connection ➢ External Power supply AC adapter for desktop charger: input 100-240 VAC, 1A, 50-60 Hz/ ➢ Nominal reading distance: 0-30cm., ➢ Reading speed: up to 30 tags per second. ➢ Has Identification for both Bar Code & HF RFID Labels.
10	Miscellaneous (Packaging and freight, etc)		Details regarding the packaging, shipping and freight, installation, etc, if any. LAN cabling provision, Power supply provision needs to be elaborated/indicated)

1. While above inclusions are to guide the core functionality expected, they may however be added/amended based on Indira Gandhi Institute of Medical Sciences requirement.
2. Indira Gandhi Institute of Medical sciences reserves the right to procure any items of Modules listed above or proposed by the bidder with necessary required customization/modification.
3. The Participating bidders are expected to be reputed organizations and having carried out satisfactorily similar assignments in the past.

Implementation:

To implement the solution at locations- as required by the University.

a) IGIMS, may implement the RFID in Phases.
b) IGIMS, may contact the organizations where RFID has been successfully implemented by the Bidder.

4. To ensure that the RFID implementation takes care of necessary security aspects such as safety of books, anti-theft, resource location, etc.
5. The Bidder is expected to take care of all the agreed deliverables (including periphery requirements if any) during the term of the project in a timely and smooth manner.
6. Data integration/migration from the existing library software (KOHA) to RFID of IGIMS, to ensure post-implementation the functioning to the library is smooth.
7. The bidder is required to depute adequate number of appropriate trained, skilled personnel at the user sites for required number of days during the RFID Project implementation.

2. Training to the Users/Staff:

1. To prepare training schedule of RFID System for staff/users and take approval from the IGIMS.
2. To train the designated technical and end user staff to enable them to effectively operate the RFID System.
3. To prepare operating and training manuals for RFID System and submit to the IGIMS.

3. **Warranty:**

The Bidder/Company/firm has to give full support for 3 (three) years after the RFID system goes live with no additional cost and should thereafter continue to extend maintenance service if desired, on Payment as per mutually agreed terms/as quoted.

4. **Insurance**

Till the time the installation is completed and handed over, all risks on the materials supplied, men involved in the installation & other properties of the vendor (including its resources, suppliers, contractor, public liability etc) will be under the responsibility of the vendor exclusively and in no way IGIMS will be responsible for any damages, physical/intrinsic etc. to the equipments, properties, Public liability etc. of the vendor

Group-I: Microbiology

1.LAMINAR AIR FLOW CHAMBER NO. 1

1. Operational requirements
   a. The basic equipment shall consist of a HEPA filter, pre filter, suitable blower assembly, necessary lighting, indicators and controls for the cabinet.
2. **Type of Flow**: Vertical – Re-circulatory
3. **HEPA FILTER**: Face dimensions: 4ft (L) X 2ft(W) X 6 ft The HEPA filter should have rated of 99.97% (or better) at 0.3 microns to provide product protection of class 100 or exceeding Class 100 requirement of Federal Standard 209E or Equivalent ISO within the work.
4. Pre Filter with Synthetic, non-woven polyster fibers having casing of enamel painted CRCA frame with Retention of 10-15 Micron and 90% Efficiency. Washable with an arrestance of 90% or better.
5. Dimensions: 32” (w) x 30” (D) x 33”(H)
6. Specifications
   - With Airbone particulate controller and UV microprocessor controller
   - Should qualify ISO 5 vertical laminar flow air standards
   - Must have 360 degrees visibility.
   - Integral polypropylene base for easy cleaning with thermoplastic construction.
   - Built-in Fluorescent light and slip hatch access port.
   - HEPA filter monitor automatically indicates when filter change is required
   - Study cart for mobility.
   - Metal-free polypropylene construction available.
   - UltraLow Particular Air filter.
   - IV bar, HEPA filter monitoring with audible/visible filter change alarms
   - Variable speed blower control and lab event timer.
   - One-Touch feature control
   - Switches and indicators: Individuals switches and indicator lamps for blower motor, florescent lamp and UV lamp.
   - Low noise level.
   - Should be suitable for Medial plate pouring, Non-Hazardous cell culture and sterile compounding.
7. System configuration Accessories , spares and consumables.
   - System as specified.
   - Spare HEPA filter and PRE filters- 2Sets Each, 2 Germicidal UV lamp
   - Other fitting required for attracting auxiliary services are 1. Electrical outlet socket (5ampere rating) qty.:(2nos). 2. Valves for gas service –one each for gas and vaccum.
8. Standards: Should be CE or FDA or BIS approved product.
9. Electrical connection :230 V , AC, 15 Amp
10. Separate lighted power ON/OFF indicator switches for blower and lighting.
11. Optional accessories:
    Height –adjustable lab chair, Ergonomic foot rest

2. LAMINAR AIR FLOW CHAMBER NO.2

1. Operational Requirement.

The basic equipment shall consist of a HEPA filter, pre filter, suitable blower assembly, necessary lighting, indicators and controls for the cabinet.

2. Dimensions : 96" (w) x 30" (D) x 37"(H)
3. With airbone particular controller and UV microprocessor controller
4. Should qualify ISO 5 vertical laminar flow air standards.
5. HEPA filteration with all polypropylene construction
6. Built-in Fluorescent lighting will all-white surfaces.
7. Custom sturdy cart or stand, Cup sink and vaccum fittings.
8. Desirable: Polypropylene base cabinet and Ultraviolet light source with full sash
9. Required Applications:
    - Should be suitable for Media plate pouring, non-Hazardous cell culture, sterile compounding and DNA/RNA extraction.
10. Warranty :1 year

3. AUTOMATED INCUBATOR (BACTERIOLOGICAL/MICROBIOLOGICAL)

No. required =5

- Should have double walled construction with complete inner chamber made of highly polished stainless steel.
- Outer chamber should be of steel sheet, finished with powder coated point.
- Should have insulation to maintain desired temperature.
- Inner chamber should be fabricated with ribs for adjusting shelves to convenient height and at least three shelves to be supplied.
- Shelves should be made of polished stainless steel sheet as per chamber.
- Doors should be insulated and fitted with heavy hinges and should have double hard glass window.
- Temperature should be thermostatically controlled in the range of ambient +10 deg C to 50 deg C
- Suitable air Ventilators should be provided.
- There should be Depth of about 32 inches, height of about 36 inches and Width of about 31 inches.
- Electrical requirement should be 230 V, 50 Hz
- There should be incubation and storage unit with temperature range below, humidity upto 98% R.H (at 37 deg C and CO_2 range of 0-20 vol.%)

4. FLUORESCENT MICROSCOPE

The optical system should be of color correction for infinity w3ith antifungal coating.

- Sturdy stand of anti rust material with long life built –in power supply LED illumination min 50000hrs. life provide cool light good for live specimen with input voltage from 110 -240 V, 50 Hz.
- Should provide a comfortable user sit in position for reducing user stress.
- 6 position objective nose-piece.
- 3 position Trinocular head with 10x22 m FOV eyepiece dipole displacement (+5 to -5) upper eyes lid (pair) intra with inter papillary distance of at least 50-70 mm adjustable to accommodate observer height.
- Co-axial coarse and fine focusing on rack and pinion. Tension adjustment control provided.
- Ultra hard Ceramic stage.
- Universal turrent type swing –out condenser for bright field, dark field, phase contrast studies with N.A. 0.9 -1.25
- 12. Objectives: Infinity plan achromatic 2/2.5x Infinity plan achromatic 5x NA 0.12 WD > 11.5mm Infinity plan achromatic phase 10x NA 0.25 WD> 11.5 mm infinity plan apochromatic phase 20x NA 0.50 WD> 1.1 mm Infinity Semi Plan apochromatic phase 40 x NA 0.80 WD 0.40 mm Infinity Semi Plan apochromatic phase 100 x oil NA 1.30 WD > 0.17 mm One extra lens according to the need,.
- Epi fluorescene illumination system and 100 W mercury illuminations, filter blocks for UV,blue and green excitation . The system should have filter blocks on a turrent.
- Polarizer and for transmitted light.
- Computer requirement :PC workstation with core i5 processor CPU, 19" & above LCD/ TFT monitor, 500 GB HDD, DVD Read /write , 2 GB RAM. Key board, Mouse.
- All consumables required for installation and standardization of system to be given free of cost.
- One additional mercury halogen lamp.

- The unit shall be capable of being stored continuously in ambient temperature of upto 50 deg C and relative humidity of 15-90%
- Power input to be 230 +/- 10 % V AC, 50 Hz fitted with Indian plug.
- UPS of suitable rating with voltage regulation and spike protection for 60 minutes back up.
- Certified to be compliant with Electrical Safety standard for Medical Equipment IEC – 60601-1-1 OR equivalent BIS OR international standard for electrical safety.
- User/ Technical /maintenance manuals to be supplied in English.
- List of Equipment available for providing caliberation and routine preventive maintenance Support.
- 3 years comprehensive warranty& well established service network AMC/CMC rates for next 5 years to be provided separately along with rates of fluorescent microscope . Digital Camera Fire wire digital Camera with the following features : Recent module with 7 mega pixel CCD camera with appropriate lens system mounted . Image analysis : system for capture, morphometry, thresh holding (grey level profiling) and analysis, annotation , etc.

5. SLIDE WARMER

Size – Medium to large.

Overall size	25" x 9" x 4" (640 x 230 x 100 mm)
Surface size	25" x 8"
Capacity	Approx . 66 slides
Power	200 Watts
Net Weight	19lb.
Voltage	110V, 60 Hz (Cat. #71320 – 10 , 71319 -10) 220 V , 50 Hz (Cat # 71320/-220, 71319-220)
Temperature	Room temperature to 75 deg C ; ± 2deg C
Quality Assured Firm	Should be certified by a reputed agency.

6. TISSUE HOMOGENIZER

No. required =4

1. The system should offer processing of a wide variety of samples, including animal and plant tissues, hard tissues like bones, which can be used to disrupted samples to release high- quality DNA, RNA and protein for subsequent purification and analysis.
2. Should offer fast simultaneously disruption 48 or 192 samples in minutes through high- speed shaking with tungsten/ stainless beads which heat and grind samples.
3. Processing of 2x 96 samples should take as little as 2-4 minutes.
4. Should have provision of effective disruption and homogenization using liquid nitrogen or in frozen condition.
5. Reproducible results with difficult – to – lyse tissues such as barks, seeds , bones, teeth etc.
6. Should have provision for complete isolation & sealing of samples while processing so that there is no chance of cross contamination.
7. Should be able to disrupt multiple biological samples through high- speed shaking in plastic tubes with steel tungsten carbide or glass beads.
8. Offer should include adapters:
   - Adapter set for disruption of 48 samples in 2 ml microcentrifuge tubes along with compatible stainless steel beads.
   - Adaptor set for 2x96 samples.
9. System should be open to accommodate any beads or tubes and reusable.
10. System should have the Digital settings and control or disruption time (10 seconds – 99 minutes) and vibration frequency (3 – 30 Hz).
11. The Vendor should have a good service and application support back up to provide an effective application support related to troubleshooting and support.
12. User list should be enclosed.

7. BIOSAFETY CABINET 2A

- Should meet the requirement of a Class II, Type, A2 biosafety cabinet having global standard for design, construction and performance of Class II BSCs.

- Should be capable for adequeate protection by direct connection to external exhaust and provide personal product protection from biological hazards and contamination as well as protection from volatile toxic chemicals.
- Size / Width – 6 foot (1.8 m)

Exterior Dimension (WxHxD) – 78 x71.5x31.6 inch
Interior dimension (WxHxD) – 72.5 x (25.7-29.2)x 25.2 inch
Working height of front window – 8 inches (20.3 cm)
Maximum opening height of front window – 21.75 inches (55.2 cm)
Damper – 10 inch diameter air tight damper.
Weight – about 720 lbs (32.7 kg)
Voltage – 115 V or 230 V
Frequency – 50/60 Hz
Filter specification – 99.99% @ 0.3 micrometers.
Ergonomics-
Sound Pressure level – 66
Receptacles - 2GFI duplex to 115 V, 2 single for 230 V
Service valves – up to 4 total (2 on each side wall)
Ventilation and Energy-
Exhaust flow measured with transverse (concurrent balance value) – 1265 CMF @ 2.2 inches w.g
Energy consumption – (operating set point)- 370
Heat emission at 25^{o} C ambient – 0.024
Inflow air Volume 414 cfm (703 m^3/h)

- Should have alarms , alerts and text messaging.
- Cabinet should have transparent sides, stainless steel, flat and indented work surfaces.
- Should have dual DC motors.
- Should have Energy efficient and sustainable Fluorescent and LED lighting.

8. 1-D & 2-D GEL ELECTROPHORESIS SYSTEM

[Quantity:1]

1. **Vertical Electrophoresis System (Small):**
   - Small Vertical electrophoresis unit, 10 well, 1.00 & 1.5 mm thickness, complete System should include 6 combos, 10- sets of glass plates, casting clamp assembly, Sample loading guide, electrophoresis module
   - Gel Size : 8.3 x 7.3 cm (WxL) approx.
   - Glass plate size :
   - -Inner – 10.1 x 7.3 cm approx.
   - -outer – 10.1 x 8.2 cm approx.
   - Same system should be able to perform also western blotting **(along with wet transfer module for western blot module**), 2D/tube gel electrophoresis& electro-elution with the help of different module.
2. **Verticle Electrophoresis System (Large):**
   - May run 1-2 gels of 18.5 x 20 cm size to perform SDS- PAGE and the second dimension 2-D using IPG.
   - Should accommodate 17-20 cm IPG strips
   - Casting clamp assembly
   - The central cooling core should be connected via recirculation ports to tap water or a cooled recirculation bath , or filled with coolant to act as a heat sink, providing smile – free patterns with as a little as 1.5 l of buffer.
   - Glass plates , spacers, and sandwich champs should be quoted with the module
3. **DNA or Sub marine Gel Electrophoresis**
   a. Small:
   - With 7 x 10 cm tray , mini gel caster,cell size (WxLxH): 12 X 26 X 6.5 cm approx. Base buffer volume : 270 ml. Suitable combs (5-20 well) should be provided.

   b. Large:
   - With 15x10 m tray, gel caster. System should include sub-cell unit, UV transparent tray, casting gates, and two 1.5 mm thick fixed height combs (15 and 20 well)
4. **Trans Blot Semi Dry Unit:**
   - The system should allowed fast, efficient and economical blotting without buffer tank or gel cassettes.
   - Spring mounted platinum coated titanium anode and stainless steel cathode plate Electrode will be preferred.
   - Maximum Gel size should be 24 cm x 16 cm.
   - The system should be capable to transferring multiple gels simultaneously.
   - Current requirement should be upto 3000 mA.

- **Special agarose gel support frame for performing southern blotting** in the same system as an add- on facility would be preffered.

5. **Gel Drying System:**
   - Drying Frame: Molded polycarbonate bottom frame, stainless –steel top frame(preferred) Dying Surface : 20 x 20 cm approx
   - Dryer capacity : Multple more than 2, each must accommodate 1 drying frame.
   - Dimensions (WxDxH): 27x43x 30 cm approx.
   - The system should run at 220 – 240 V, 50 Hz.
6. **Vaccum Blotter System:**
   - Should include compatible vaccum pump, vaccum regulator, base with vacuum stage, porous vaccum plate, reservoir seal O-ring , sealing frame , assorted window gaskets, lid, and should run at 220/ 240 V, 50 Hz
7. **Power Supply:**
   a. High Voltage
   - Programmable high voltage power supply for 5000 V/ 500 mA / 400 W with constant Volt / current / power operating mode with automatic crossover.
   - Built-in timer range – 0-999 min
   - At least four output terminal
   - Auto power recovery features will be preferred
   - The system should have " No Load Detection " capability.

   b. High current :
   - Should be a broadest range of power supply for broadest range of application
   - Programmable High current Power supply for 500 V/ 2.5 A/ 500 W
   - Constant Voltage / Constant current / Power operating Mode with automatic crossover features will be preferred.
   - Should have built-in Timer range ;0-99 hr, 59 min
   - No. of output jacks :04 (four) or more sets in parallel.
   - Auto power recovery will be preferred.
   - Programmable methods should be stored.
8. **Iso – Electric focusing System:**
   - Integrated Peltier cooling platform (-- 10 – 40^{o}C) , and programmable high voltage power supply.
   - Voltage : 0-10,000 volts approx, Current0-3 miliamperes (approx.) power :24 watts.
   - Immobilized pH gradient (IPG) strip chamber accommodates 7-24 cm length strips, ad 1-12 strips per tray.
   - User Interface control panel may contain 12 key alpha-neumeric keypad with 4 soft- keys and 3 function keys, back lit graphics display , and 4 lines by 22 characters.
   - Programmable parameters must contains : rehydration and focusing time, platform temperature, current limit per strip, voltage , and voltage ramping type for each step etc.
   - Choice of three voltage ramping profiles: Rapid , linear , slow (Preferred)
   - Should be equipped with programmable capacity.

Additional items should be quoted:

- Sample enrichment / Pre-fractionation based on Iso-electric point in "Liquid ": Microrotofor Cell
- 2D software for Image Amnalysis.

In additional to institutes terms & condition following should be mentioned specifically.

1. Vendor should have **3 years available in last 5 years in the Eastern Zone of India (Enclose full list of users in India).**
2. Training on operation and routine maintenance for this instrument.
3. **The manufacturer has to stand guarantee for the relocation of the instrument once the permanent campus of IIT Bhubneshwar gets ready for operation. They must be in a position to dismantle the setup in present campus and re-install it to the new campus. Necessary for the same may be shown separately in their offer.**

Upon receipt of your quotation, the technical committee will have the review meeting. Selection mainly will be based on technical features:

9. REFRIGERATOR

No. Required -2

- Minimum gross storage Capacity- 310 to 330 lts.
- Model type – Double door
- Voltage range at 40 degrees centigrade – capable of working on 220 volts + 12% A.C 50 Hz
- Power Source – AC , 220 volts to , 50 Hz
- 5 methods of defrosting – Frost free
- Insulation – puff/Maxi 2 / Polyurethane
- Refrigerant Gas – CFC Free
- Compressor – Power saver compressor
- Accessories Required- adjustable shelves, chiller Tray, Temperature controller , Auto lamp on/ off features, should be supplied with all standard accessories per manufacturer catalog for the model supplied.
- Warranty- with 3 years Comprehensive Warranty.
- Stabilizer – should be supplied with 0.5 KVA capacities CVT without any extra cost. The CVT will also carry 3 years warranty.
- Colours Steel grey with metallic finish (Metallic Color)
- The Unit should comply with relevant IEC safety standards.

10. LABORATORY REFIGERATOR

(NO. REQUIRED=2)

- Should have durable rust free exterior with durable interior having adjustable shelves.
- Interior lighting with drip tray and defrosting arrangement should be present.
- There should be adequate circulation of air to ensure even cooling by DUCT system.
- Control panel with temperature alarm, on/of switch and digital thermometer should be present.
- Door with lock should be present. Inside of the door should be provided with racks. Door hinges and latches should be chromium plated. Door should be fitted with glass.
- Electronic automatic temperature control.
- Should be of 380 Ltr. Capacity with temperature range of 2-8ºC.
- Preferably roller mounted.
- Power supply of 220 V , 50 hz.
- Compressor unit should have three years warranty with five years comprehensive AMC.
- Service center should be in close proximity of the institute.
- Should have appropriate certification like CE/ISI.
- All electrical peripherals required for smooth functioning e.g voltage stabilizer should be provided with the instrument.

11. WATER BATH-DIGITAL

No. Required -4

- Equipment should be FDA/ CE certified or equivalent standard of repute.
- Capacity 15 L.
- Temperature range – ambient + 5º C to 99.9ºC
- Temperature stability.-- +/- 0.5ºC
- Internal dimensions – (W x d x h) mm – about 300 x 325x 200 mm
- Overall dimensions (Wxdxh) mm about 335 x 408 x 280 mm
- Net weight – about 9 KG
- Heater power – 1000 W
- Electrical supply – 230 V, 50 Hz , 1000W
- IP rating – about 31
- Lid of water bath should be of stainless steel.
- Double walled inside stainless steel and outside mild steel sheet painted in epoxy powder coating.
- Should have carrier rack for flasks and test tube racks.
- Should have cock for drainage of bath contents.
- All electrical peripheral required for smooth functioning e.g. voltage stabilizer should be provided with the equipment.

12. UPRIGHT FROST FREE VERTICAL DEEP FREEZER (-25^{O}C)

SI NO.	SPECIFICATION	REQUIREMENT	YES/NO
1.	Application	For storage of various biological products including , ATCC cultures, enzymes, chemicals or material testing components for a longer period of time	
2.	Unit	• Interior : Full stainless steel which can be easily cleaned and eliminates any possibility of cross contamination • Cooling Type : Direct cooling • Should be Vertical (Upright) type • Microprocessor – based. • Frost free • Refrigerant : CFC – free • Easy to read, LED control panel and alarm status with integrated diagnostics. • Doors with key lock • Built in Voltage stabilizer/ Battery back – up for 48 h or more • Castors for easy movability.	
3.	Capacity	Capacity ; 250 L or higher with a combination of sealed 5-7 pullout drawers / shelves of diferrent sizes that can be adjusted for storage flexibility .	
4.	Temperature	• Range – 10 _ -25ºC with temperature controller • Digital temperature display • LED display for temperature and temperature history which can be downloaded via a USB port • Caliberation facility	
5.	Alarms	Acoustic/ visual Safety alarms for • High/ low temperature, • Door ajar and • Malfunction system alarms	
6.	Optional Accessories	Racks for 50 mm boxes (incl. dividers),	

13. TECHNICAL SPECIFICATION FOR DEEP FREEZER

One -70 degrees deep freezer system with temperature control/display, temperature range : -50ºC to – 86ºC , capacity cu ft/liters :350 or more , cryo Box capacity 2" : 230 or more , max Shelf weight : 120 lbs/ 65 kg or more , Refrigation HP: Two 1.25 HP each , Voltage : 230 V,50/60 Hz. Heave gauge, cold rolled steel cabinets with a powder coat paint finish for a uniform exterior that resists chipping and rust , 5" (12.7 cm) foamed –in- place polyurethane insulation , vaccum relief port for easy access after door openings, easy to remove washable filter for protection from dust on the condenser and increasing refrigeration performance, single hand operation with an easy – to-use padlock – compatible , ergonomic door handle with integrated key lock, simplified installation with our new easy – roll 2" locking casters, four infer doors to reduce cold air loss and improve temperature recovery after door openings microprocessor control and monitoring system to ensure that all controls and display are easy to reach and read, power management system with low voltage surge protection and buck/ boost, safety – backup system for additional sample protection in the event of power of mechanical failure. Warranty for a minimum period of one year. Suitable voltage stabilizer to be supplied to support the instrument.

14. TECHNICAL SPECIFICATION OF PORTABLE HIGH VOLUME AIR SAMPLER

- Portable & light weight High Volume Air sampler
- Operating voltage : 220 -230 V, 50-60 Hz
- Flow range : 0-2 cubic meters per minute (m^3/min)
- Built-in rotameter for instantenous flow reading
- Contains 4" (10.16 cm) diameter filter holder assembly .
- Weight < 5 kg

15. TECHNICAL SPECIFICATION: HOT AIR OVEN

- Chamber capacity should of minimum – 420 liters.
- Body should be of stainless steel AISI 304 grade steel.
- Compatible with power supply should be of 220 V, 50 Hz
- Should be noise free and should provide soft air convention.
- Temperature control – The Temperature should be set between 5ºC to 250ºC.
- Cabinet should provide with a quick locking facility and heat resistant silicon gasket.
- Blower: An air circulation blower of adequate capacity shall be provided for uniform circulation of air.
- Instrument should be provided with a warranty period of 2 years and 5 years post purchase annual maintenance.

Group-J: Transfusion Medicine

1. STERILE CONNECTING DEVICE/ DOCKING DEVICE

Purpose of Equipment:

 Sterile Connecting Device is able to heat and cut two tubes and switch the connectivity of the two halves and weld them back, and do the cutting and welding in such a manner that it can be considered as sterile as a closed process.

Quality Standard:

 Manufacturing should be compliant with ISO 13485, and ISO 9001:2008.

 Should be compliant with European CE Class IIA or US FDA

 Equipment must meet electrical safety specifications of IEC 61010-1.

Operational requirements:

 Should ensure sterile connection between tubing to enable transfer of fluid/ blood from one container/ bag to another by welding the tubes between them effectively as a closed system.

 Should be compatible with all standard tubing with an external diameter ranging from 3.9-4.5 mm& internal diameter of 2.9-3.1 mm.

 Should have in built sensor to monitor the temperature to ensure optimal quality and strength of weld.

 Should be capable of welding Wet – Wet / Wet – Dry / Dry – Dry tubes

 Total process time should be minimum (approx 20 to 30 seconds).

 Requirement for tube length to be welding/docking should be as small as possible

 LED indicators to display the whole process with alarms.

 should ensure the complete sterility

 Should be attachable to leukocyte filters and should also be usable for plasma and platelet pooling

 There should be no particles or chemical residue created by welding process

 To be operational on 220 to 240 volts at 50 Hz. Single phase AC.

 One Set of full boxes consumables if any (eg wafers) should be provided with instrument and cost of replacement consumables should be quoted and supply should be readily available with the vendor till the CMC period.

Additional requirements:

 All equipment should specify qualifications for design, installation, operation and performance.

 Validation and calibration reports should have traceability to applicable national and international standards.

 Complete with comprehensive set of spare parts and a suitable capacity voltage stabilizer and surge protector with the charging set.

 Warranty for 3 years and CMC/AMC for Five years with spare parts availability.

 The make, rating, model, description, specifications, price quantity of each item should be furnished separately.

 Necessary catalogues, technical write up in English, should be attached with the offer both in hard and electronic copies.

 Performance, efficiency, other factors as applicable should be furnished.

 Demonstration and continued comprehensive training for lab staff and support services till familiarity with the system.

 Should provide electronic and hard copies of User Manual (English), Service manual (English) and Complete construction details with respect to material specification, thickness, finish etc.

 Should provide a set of equipments for calibration and routine Preventive Maintenance as per manufacturer documentation in service/technical manual.

 Should provide 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.

2. AUTOMATED COMPONENT EXTRACTOR

- The equipment can be used for automatic separation component using PRP as well as Buffy coat methods for preparation of leucoreduced platelets, platelet poor plasma and Red cells.
- Quality Standard:
    - Manufacturing should be compliant with ISO 13485, and ISO 9001:2008.
    - Should be compliant with European CE Class IIA or US FDA
    - Equipment must meet electrical safety specifications of IEC 61010-1.

- Should be an open system compatible with any brand of blood bag (Top & Bottom as well as Top & Top Outlet bags) made to international standards (DB, TBS, QBS).
- Should have more than 10 users selectable optical sensors to separate the components very accurately.
- The equipment comes integrated with Five Radio Frequency sealing heads and clamps.
- The equipment has a built in 3 electronic weighing scales to measure plasma, SAGM and Buffy coat.
- The equipment has a built in user friendly control panel and online interacting process display.
- The equipment has a facility to remove the air from the primary bag before plasma separation.
- The equipment should have 11 programmes for separation.
- The equipment should have angular press to avoid turbulence between layers with flow regular sensors.
- The equipment comes integrated with the software's, which records the detail of the separation with the help of barcode reader. The data transfer will be through Power Line Communication (PLC) for a cable free connectivity of machine with remote computer. The equipment can work as the stand-alone unit without losing its efficiency even if the computer connections are not available.
- Should have Top Angle press separation mechanism to avoid turbulence during separation.
- 13.Should operate with pneumatic controls with noise free compressor.

3. TUBE STRIPPER(Required 4 in No.)

1. Should have completely anti-rust, stainless steel body.
2. Should be lightweight.
3. Should ensure the uniform pressure while pressing to close and automatic recoiling of spring to release handle for opening.
4. Should have Screw- less rollers to avoid loosening of the rollers.
5. Should have extra sharp cutting edges.
6. Should behave ergonomically designed handle for better grip.
7. Should have roller guide to avoid any damage of tube.
8. Should have provision for manual tube sealing by aluminium rings.
9. Original literature of equipment should be submitted.

5. BLOOD COLLECTION MONITOR

1. Should have facility to preset total volume of blood to be collected and accordingly monitor and display amount collected. It should have facility to clamp to stop the collection of blood as soon as preset volume is collected and not allow over collection. Should have the facility for LIS integration (preferably wireless).
2. Battery backup should be > 8 hours with continuous work load.
3. Battery charger should be inbuilt.
4. Should be portable (Suitable for outdoor blood donation camps).
5. Should have standby / park mode.
6. Should be able to operate at 10 – 50ºC.
7. There should be digital display of preset volume, rate of collection and total time taken at the end of collection.
8. Oscillation 12 - 16 rpm
9. Should mix the blood with anti – coagulant solution during collection and ensure that only correct amount of blood is collected.
10. There Should be Visual display and audible alarm:
(i) when flow rate goes below 20ml / min or high flow rate above 180 ml / min
(ii) at the end of collection
(iii) when battery low
(iv) during pause function
(v) any abnormal condition
11. Every Bio-mixer should be provided with manufacturer provided carry box with handle.

12. Firm should supply the relevant calibration certificate for the equipment from NABL accredited Lab.
13. Original literature of equipment should be submitted.
14. It should have USFDA or European CE certification
15. Manufacturer should be ISO 9001 certified and should have ISO 13485 certification for quality standards. It shall meet IEC-60601-1-2 (Or Equivalent BIS) General Requirements of Safety for Electromagnetic Compatibility.
16. The biomixer should be able to integrate with LIS for data management.

6. DIELECTRIC TUBE SEALER(required 4 in Number)

(Bench top)

1. The system should be heavy duty and simple to handle.
2. System should gently seal the blood bag tubing of all manufacturers with no haemolysis
3. The sealing time should be within 2 seconds. It should be able to make at least 40 seals/hr.
4. Sealing triggering should be automatic.
5. The sealing length should be of at least 1 mm.
6. The sealing should provide a notch for easy detachment of the sealed tubing.
7. Should have an option of extended portable hand unit with coaxial cable of 1.5-2.0 meter.
8. Should have indication lamps for “Sealing Process” on handle as well as main unit and LED.
9. No warm-up time should be required.
10. Should ensure easy separation of tube segments after the sealing.
11. System should run on mains.
12. Should be light weight not more than 8 Kg.
13. Power input: 220-240V/ 50 Hz AC.
14. The quoted model should have FDA or CE certificate and copy of the same should be enclosed along with the technical bid.
15. Should have the ISO certification and the copy of the same should be enclosed along with the technical bid. It shall meet IEC-60601-1-2 (Or Equivalent BIS) General Requirements of Safety for Electromagnetic Compatibility.

7. TABLE TOP CENTRIFUGE

1. Must perform in wide temperature range (0-45°C) and in humidity of up to 90%.

2. The firm must supply swinging bucket rotor. Swing bucket rotor must accommodate at least 16 tubes of 12x100mm tubes.
3. It must have option of braking system so that the centrifuge stops within 60 ± 10 secs.
4. Noise level must be strictly less than 60 dB and documentary certificate for the same is to be furnished by the firm.
5. Max. Speed: up to 1,000 to 4000 rpm, maximum RCF must be ≥ 2000xg (Swinging bucket rotor)
6. Must have provision for setting the timer.
7. Must have inverter controlled Brushless Induction drive system
8. Safety features: Lid locking, Emergency lid release, Lid dropping protection, Automatic rotor recognition, Imbalance detector and shut-off, Motor overheating protection, Over speed sensors/detector must be available in the equipment.
9. Display: LED display with user-friendly soft-touch tactile buttons with easy to use User-interface.
10. Dimension: Must be < 20 inch (W) x < 30 inch (D) x < 20 inch (H) mm.
11. Centrifugation chamber must be made up of rust-free stainless steel for better durability.
12. Power Requirement: Single phase, AC 220/240 V, 50Hz. The equipment must be able to run on the existing electrical provision. Any additional electrical requirements must be specified by the firm.
13. Ambient temperature and humidity for operation: from 2 to 45 ºC with 10-90% humidity.
14. The firm must supply suitable separate sturdy tables for installing each of the centrifuges.
15. Firm must submit validation and calibration reports for speed, acceleration/deceleration and time which must have traceability to applicable national and international standards.
16. Fully detailed operator manuals must be provided.
17. Equipment should have USFDA or European CE certification.
18. Manufacturer should be ISO 9001certified and should have ISO 13485 certification for quality standards. It shall meet IEC-60601-1-2 (Or Equivalent BIS) General Requirements of Safety for Electromagnetic Compatibility.

8. DIGITAL pH METER

1 It must be microprocessor based for fast and accurate pH measurement with soft touch control panel (3 point)

2 It must measure pH range (0-14)

3It must have auto-calibration with 2 buffers

4 It must have built-in Auto buffer recognition

5. It must have pH and Temperature display

6. It must have refillable Triode 3-in-1 epoxy body combination pH electrode

7 It must run on 220-240 V 50/00 Hz

8 It must have automatic temperature compensation (0-100 deg C)

9 The firm should supply standard buffers 4,7,10 pH (250 ml each) with theequipment

10 The firm should supply 1 extra set of electrode

11. Original literature should be attached

12 Firm will have to supply the stabilizer if required along with the equipment free ofcost.

13. Original literature of equipment should be submitted

14. Equipment should have USFDA or European CE certification.

15 Manufacturer should be ISO 9001 certified and should have ISO 13485 certification for quality standards

9. BLOOD BANK REFRIGERATOR

1. Storage Capacity Showe 400 L city and should be able to accommodate 350-400 PRBC units.
2. Set temperature 4°C with temperature range 2°C to 6°C and adjustable withsetting accuracy of ±0.1°C
3. Refrigeration Non-CFC cooled refrigeration
4 Should have good insulation to maintain required temperature
5. Should have double walled glass door
6. Microprocessor temperature controller with intagrated audiovisual temperature and power alarm function with digital monitoring display
7. Safety features Audio alarm for at the following parameters should be there-temperature nuctuation & power failure of point sam, low alarm point Dooropening audio and visual display alarm

8 Independent safety thermostat 10 avoid negative temperatures
9 Should have battery backup for temperature and power alarm
10. Should have 1000 nos of seven days graphic temperature recorder along with data logging device. The cost of the temperature recorder chart paper will beincluded in the total cost of the equipment financial comparison
11 Internal temperature hold over time in case of power factor should be at least 1.5hours
12 Should have fluorescent light inside the Blood Bank Refrigerator with switch
13 Should have castor wheels with locking facility
14. While in operation the noise level must not exceed 90 dB
15. Original literature of equipment should be submitted
16 Firm should supply the relevant calibration certificate for the equipment from NABL accredited Lab
17. Firm will have to supply the stabilizer required along with the equipment free ofcost
18. Should be USFDA or European CE certified
19. Manufacturer should be ISO 9001 certified and should have ISO 13485 certification for quality standards It shall meet IEC 60601-1-2 (Or Equivalent BIS) General Requirements of Safety for Electromagnetic Compatibility

Hot air oven Multichannel pipette

10. BLOOD & COMPONENT BALANCE(2 in number)

1. Should be micro controller based Blood Bank Scale designed for weighing Bloodand blood Components

2. Should have LED/LCD display, displays the weight and volume with an accuracyof 1gm/Iml.

3. Should have weighing range upto 5 kg and accuracy of 1mg/1ml.

4. Should have easy conversion of weight to volume

5. Should display volume and weightof blood components

6. Should have Auto Calibration and Overload indication features

7. Should run on 230V ac and should have battery back up of atleast 1hour.

11. LAB AUTOCLAVE

1. Should be a fully automaticmicroprocessor based High pressure, high vacuu autoclave for sterilizing material including blood bag, disinfection of materials andwaste decontamination.

2. Should be top loading, have Rectangular, vertical chamber with wel insulated jacket, chamber Volume minimum 450 litres or more

3.Should have single sliding door to have pass trough system Door should have the following features a Electrically controlled having fully automatic function multiple safety arrangements. b. Sealing system should be based on silicone seal.e Should have at least 50 mm thick insulation materials on jacket and in doors to ensure low thermal losses Working temp of the door should be less than 45 deg C

4. Should be high grade Stainless steel

5. Should have preferably a built in Color touch screen

6. Should have audio visual alarm in case of undesired situation

7.Should have programmable Operators access level.

8. Should have pre programmed standard cycles and user programmable cycles.

9. Should have temperature adjustable from 121 Deg C. to 135 Deg C

10. Safe Working pressure range should be from 15 to 32 PHI (1.1 bar - 2.2 bar)

11. Should have complete monitoring of cycle operation and provided with at leasttwo pressure sensors and two Temp Sensors in addition to analog meters forchamber pressure, jacket pressure and steam generator pressure indication

12. The unit should be equipped with multiple safety mechanism for EmergencyStop over pressure safety valves for chamber and jacket over temp safety, steamtraps and electrical safety

13. The unit should include Non fade built in thermo recorder for step progress values during the cycle with time and date and alarm condition if any

14. Should have built in feature of Water Saving System for water conservation. Dated 30.08.2019

15. Should be supplied with complete set of high quality stainless steel trolleys andsterilization baskets a External trolley = 01 nos b Internal trolley with steel rollerShelves = 01 nos, and d sets of Sterilization baskets

16. All accessories & electric fitting must be supplied by the firm

17 Three compulsory visits for calibration and checkup irrespective of complaints inyear

18. The steam Generator should be also be made of Ti steel & the steam generator should be equipped with automatic cleaning facility

19. The equipment must have Integrated waste water cooling, integrated water saving device and draining facility.

20. The equipment should be having ports (RS 232 or equivalent) for LIS interface

21. Should be US FDA/European CE certified. It shall meet IEC-60601-1-2 (OrEquivalent BIS) General Requirements of Safety for Electromagnetic Compatibility.

12. COAGULATION ANALYZER

1. Theequipment should be table top four channel and random access Opensystem

2. The instrument should be able toprovide simultaneous measurement of Clotting

3. Principle of clot detection must either be turbidimetric turbo densitometric mechanical clot detection or LED optical detection methods

4. Technology should be insensitive to lipidemic, coloured, hemolyzed plasma andassaysturbid reagent.

5. It must be able to run minimum tests which should include but not limited to PT APTT Fibrinogen, Factor VIii and Factor VIII

6. The instrument must use spun plasma and preferably be able to use primary sample tube

7. The test analyses must be complete in -10 minutes. Throughput Hour should not be less than 30 samples

8. Instrument should be able to automatically detect sample and reagent positions

9 Instrument should have data storage capacity of minimum of 100 tests

10. Multi batch Q.C. Levey- Jennings graph should be available in the system

11 Automatic mixing for sample and reagents should be possible

12 It must be able to integrate with the blood bank software

13. Must have Battery backup for temperature recordings and alarms which is especially needed during power failure/fluctuations

14 Must be able to perform in an ambient temperature range of up to +45 ±1 °Cand Relative Humidity of 6090%

15. It shall meet IEC-60601-1-2 (Or Equivalent BIS) General Requirements of Safety for Electromagnetic Compatibility.

13. MULTICHANNEL PIPETTES:

Required 4 in Numbers

Provided with suitable racks

1 Volume (Meter) Range 10 to 1000 µL, Number of Channels 8: increments 0 2µ L
2 Volume (Metric) Range 30 to 300 µL Number of Channels 8; Increments 1 µL

Group-K: Trauma & Emergency

1. ANAESTHESIA WORK STATION WITH MONITOR

Specification of Advanced Anaesthesia Work Station with Monitor
Gas Management:

Three Gas system : Oxygen Air, Nitrous Oxide

Oxygen cylinder yoke and Nitrous Oxide cylinder Yoke

Pipeline inlet for Oxygen, Air, Nitrous Oxide

Oxygen Concentration: 25% to 100%

Electronic Gas Mixing measurement and display for accurate gas flows and mixing.

Pneumatic Oxygen Backup flowmeter

Auxillary Oxygen Flowmeter

Oxygen Flush between 35 lpm -70 lpm

Will have an additional optional receptacle for accepting/ integrating Anesthesia Gas monitoring module.
Colour coded high pressure tubings 5 meter long for oxygen, nitrous oxide and air with suitable pipeline connectors.

Hypoxic guard to ensure minimum 25% oxygen across all O2-N2O mixtures.
Oxygen failure warning device. All alarms to be audio as well as visual.

Should have 3 gas back up mechanical flow control in case of failure of electronics

Vaporizers:

Vaporizer must be isolated from the gas flow in the off position and prevent the simultaneous activation of more than one vaporizer.
Vaporizer shall mount to a Selectatec® manifold which allows easy exchange between agents.
Supplier must offer total vaporizer manufacturing capability- Sevoflurane, and Isoflurane. Isoflurane and Sevoflurane vaporizers to be standard accessories. Other vaporizers to be optional and price for each to be quoted.
Back bar to accept two selectratec vaporizers

Breathing System:

Breathing system shall be fully autoclavable to 134° C and natural latex free. It should he compact.
Total circuit volume shall not exceed2.7 L. including Absorber volume.

Breathing system shall have integrated Volume sensing and shall be of a type that does not require daily maintenance.
Ventilator bellows shall be integrally mounted to the breathing system. Should have Ascending Bellows design.

Bag to vent switch shall be bi-stable and automatically begins mechanical ventilation in the ventilator position.
Adjustable pressure limiting valve shall be flow and pressure compensated .

Machine shall provide circle mode breathing circuits.

Components coming in contact with patient gas shall be disposable or autoclavable.

FIO2 monitoring should be available.

Common Gas outlet Should be standard supply for connecting open circuit.

AGSS ready to be connected to hospital installed active system

Ventilation

The workstation should have integrated Anesthesia Ventilator system.

Ventilator based on flow valve technology with ICU features and modes of ventilation

Visible bellows for visual indication of leaks in the systems.

Ventilator shall have Volume Centrol and Pressure Controlled modes.

Dual Mode — PCV, VCV and PS needed for difficult lung ventilation, Obese patients laproscopy , beating heart , and neonatal.

Ventilator shall have a tidal volume compensation capability to adjust for losses due to compression, compliance and leaks, and compensation for fresh gas flow
The workstation should be capable of delivery of low flow and minimal flow anaesthesia

Ventilator shall be capable of atleast 120 L/min peak flow to facilitate rapid movement through physiologic "dead space' in the Pressure Control mode

SIMV and Pressure Support Ventilation with Apnea Back Up Ventilation should be offered
It should have a cardiac bypass mode. during cardiac bypass procedure to stop the system from alarming, and turns off automatically, when the ventilator is turned back on

Compliance Measurement and Trending (Preferable):Measures and displays the patient's compliance to offer an view of the patient's lung condition.
Vital Capacity & Cycling procedures (Preferable) : to automate the procedures for optimal Peep setting to recruit the lungs .
Tidal Volume: 20ml to 1500ml in VCV .TV = min 5 ml in PCV mode.

Rate : 4 to 100bpm

Electronic Peep : Off, 4 to 30cms H2O

Settable I:E ratios, Pause, Trigger (0.2-10 L/min). lnsp Pressure from 5 up to 50cms H2O

Ventilator shall be capable of 120 L/min peak flow .
Ventilator shall have a tidal volume compensation. Operates on a breath-by-breath basis and does not require special calibration.

Inspiratory pressure (Pinspired)

5 - 60 cm H2O

Pressure limit (Plimit)

12 to 100 cm H2O

Machine should have atleast 60 mins battery backup

Shall have integrated LED light strip that provides bi-level work surface illumination

Handle on side for easy positioning.

Machine should have mounting capability of one O2 and one N2O pin-indexed cylinder.

Display:

Around 12-16 " Color TFT Display with High visibility and highly visible alarm light mounted on the Anesthesia Workstation

Monitor should be Modular and flexible.

Colour touch screen display Up to 8 waveforms / 4 digit fields, 7 optimized user modes, Standard Adult, Pediatric & Neonate mode with OxyCRG

Trend up to 72 hours of graphic and numerical data

Should have an individual Battery backup, minimum of 2 hrs

ECG and IBP analog output. Should have arrhythmia and ST segment Analysis with ST Trend

Monitor should have Simultaneous Monitoring facility for 2xIBP & 2xTernp for all monitors

Basic Patient side module for Measuring Parameters like 5 lead ECG, NIBP, SPO2, RESP, 2xIBP, 2xTemp, EtCo2 (side stream), Anaesthesia Gas monitoring, Level of Depth of Anaesthesia monitoring and NM monitoring
Accessories - Standard use for ECG (2 in no.), SpO2 probes (2 each for adult & pediatric). NIBP(2 cuffs each for adult and pediatric & I for neonate), Temperature probes (1 for core and 1 for skin), IBP cables (2 in no with 10 pressure transducers and their one holder), EtCO2- 5 filter assemblies and 10 tubings, for anaesthesia gas monitoring, depth of anaesthesia monitoring(with 25 disposable leads),NM Monitoring cables Recorder option for printing the up to 4 waveforms and alphanumeric data, and trends etc .

Power:

Will work on electric mains

Anaesthesia workstation should have an individual battery backup of minimum up to 45mins on fully charged battery .

Should have integrated lighting for vaporizers and working table (optional)

Braking Mechanism

Front caster wheel should have a central baking mechanism

Following upgrades should be offered as options — (Quote unit prices in price bid)

Mainstream EtCO2 monitoring should be possible

Cardiac Output module for measuring the cardiac output using the thermo-dilution technique with four Invasive pressure channels.
Module for monitoring Cardiac Output with the help of PiCCO technique
Facility for Microstream EtCO2 with dedicated accessories for Adult, Paediatric & Neonates (25 each)

Anaesthesia workstation and monitor should US FDA/CE Approved.

2. SPECIFICATION OF DEFIBRILLATOR

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.

3. MULTIPARAMETER MONITOR WITH CENTRAL MONITORING STATION

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

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

4. PULSE OXIMETER

- Should have plethismographic wave form with numeric display for SPO2 and Heart rate on LCD/TFT display.
- Should have a SPO2 range of 0 to 100%.
- Should have SPO2 accuracy of ±2%.
- Should provide bar graph for pulse strength.
- Audio and visual alarm for both upper and lower SPO2, Heart rate.
- Should provide with adult reusable finger probe with technology from standard reputed companies.
- Beep sound and alarm sound should have separate volume control.
- Should have a minimum of 2 hours back-up time.
- Should be a portable, light weight and desktop model.
- Should work with input 200 to 240Vac 50 Hz supply.
- Should have safety certificate from a competent authority CE / FDA (US) Copy of the certificate must be attached along with the technical bid.
- If any accessories price should be cote separately.

5. Portable X-Ray Machine

Brief technical specification of 4KW Mobile X-ray machines

High frequency generator type 4 KW mobile X-Ray machine having following specifications:

Generator:-

Generator output: 4KW
Voltage output: 40 to 120 kV
Tube Current 100mA
mAs range: 0.5 to 200

Tube:-

Rotating anode type X-ray tube
Focal Spot size less than 2 mm
KHU: more than 150
Overload tube protection should be present

Trolley should have cassette holder
Single phase AC line

Breaking systems for the wheels should be present
AERS approved
QA test should be done by vendor along with certification in AERB

Warranty / after sale service: -

1. 3 years comprehensive onsite warranty of entire equipment (Spares, consumables, accessories and labour). This will be followed by 7 years CAMC.
2. During warranty period as well as during Comprehensive Annual Maintenance Contract Period, firm will maintain the system with all spares and accessories. During warranty and CAMC period, no additional amount is to be paid towards supply of equipment.
3. Physical damages will not be covered under warranty period as well as during CAMC period. To procure the accessories, in case of physical damages, bidders are required to quote unit price of each accessories.
4. List of consumable with price should be quoted separately, if applicable
5. List of accessories with price should be quoted for physical damages
6. Maintenance services during warranty and CAMC directly by OEM Engineer, not by channel Partner.
7. Tripartite agreement is mandatory with OEM, if bidder is third party.

Group-L: Hematology

1. DECA-HEAD MICROSCOPE

SPECIFICATION FOR DECA HEAD MICROSCOPE WITH IMAGING FACILIITY

MICROSCOPE BODY:

- Infinity corrected **APOCHROMATIC** Optical System Trinocular (three step light path divider) Research Upright anti-fungal treated Microscope with highly ergonomic Design for user comfort.
- Microscope body should have feature to create multiple (more than one camera port) cameras ports as required.

- **ILLUMINATOR**: Koehler Illumination of 14 watt high power LED (Minimum 50,000 hrs) / 12V 100W Halogen Transmitted light illumination with 10 Spare Bulbs, Light Intensity LED indicator and light preset switch for photography. Illuminator should be suitable for Indian voltage and intensity should be continuously adjustable.
- We prefer 12V 100W Halogen illumination.

- **TRINOCULAR TUBE:**
- **Field No. 25mm** or better, Three **position prism Trinocular tube**, 100% light for viewing, 20% - 80% viewing & photography, 100% light for photography.
- **EYEPEICE:**
- Paired eyepiece 10X magnification with Wide Field **F.N 25mm** or better, Focusable / diopter adjustment +/- 5 on both eyepiece or Better.
- **NOSEPIECE:** Interchangeable reversed turret type of 7 positionnosepiece.
- **STAGE:**
- Hard Coated Ceramic surface, anti-corrosive and anti-friction mechanical stage with right-hand low drive control with individual torque adjustment for X and Y axis. Should have two slide holder clips and stage should have upper limit stopper feature to avoid damage the slide/ objective lens.Stage rotation of 270 degrees with stage lock and stage tension management .

- **OBJECTIVE:**
- PLAN ACHROMAT 2X/0.06, WD 7.0mm or better
- PLAN ACHROMAT 4X/0.10, WD 30.0mm or better
- PLAN ACHROMAT 10X/0.25, WD 10.0mm or better
- PLAN ACHROMAT 20X/0.40, WD 1.0mm or better
- PLAN FLUOR 40X/0.75, spring loaded
- PLAN APOCHROMAT / SUPER APO 100X / 1.40 oil spring loaded
- Higher NA is accepted

- **Polarizer and analyzer** : Should provide required analyser and polarizer.

- **Condenser:**
- Swing out Achromat condenser (N.A 0.90/ 0.22), suitable for 2x - 100x

· Teaching Attachment:

· **Should have teaching head for ten persons (1+9) including main observer, binocular tube with 25mm F.O.V along with paired eyepiece 10X magnification, 25mm F.O.V, diopter adjustment +/- 5 on both eyepiece. Should have LED arrow pointer with intensity adjustment feature & having arrow pointer two color selection option with 360 degree rotation feature.**

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· **High Resolution Camera & Software:**

· Scientific grade High resolution CMOS / CCD color camera of Chip size (for CMOS: 34 X 22mm) / (for CCD: 2/3") or higher, resolution of at-least **15 MP** or more, 30-40 frame per second live display at 1 k X 1K resolution, **pixel size 6 x 6 micrometer,** Live cell imaging with binning feature. Camera should be capable to capture BF/PH/ weak Fluorescence/ DIC/ polarizing /dark field images with good quality projection compatibility without blurring the image quality. Microscope, camera and imaging software should be from same manufacturer. No Memory card slot kind camera accepted. Image display and image data save on computer. USB 3.0 PC connection.

· **SOFTWARE**: Should have licensed measurement software with image analysis and recording features .

· **COMPUTER:**

· Branded Computer / Data station: Licensed - Windows 10 Professional OS, with processor i-7, 16GB RAM, 2 TB HDD, 1GB Graphics card, screen color 21", keyboard, mouse, UPS.

· Dedicated 1KVA offline UPS for complete microscope unit for 15-20 min backup.

· **Certification:**

· Bidders should strictly quote latest model as per above specification. System should comply international quality standard with certification **USFDA, CE, ISO, UL.**

· **Microscope should be upgradable in motorized feature, 130 watt mercury fluorescence attachment and DIC application as required.**

· Microscope, optics, camera and software should be from same manufacturer for better compatibility & upgradability

· There should be provision for demonstration before final approval of equipment.

· **System should come with a minimum of 2 years warranty.**

- **Should have Microscope: Camera view observation 1:1.**
- **Should provide Relay Lens, Adapter with compatible 55" TV monitor.**

Director,
IGIMS - Patna.