BIDDING DOCUMENT

TENDER NOTICE No.: 19/ 2015 - 2016 / Biomedical Equipt./ IGIMS / Store

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

TENDER NOTICE No 19 /2015 – 2016/ Biomedical Equipt. / IGIMS / Store

Issued to:

Cost of Document: Rs.

Paid By: Cash: Receipt No.:

Demand Draft: No.:

Issuing Bank:

(Authorized Signatory)

INDIRA GANDHI INSTITUTE OF MEDICAL SCIENCES,

SHEIKHPURA, PATNA - 800014.

INDEX

IMPORTANT DATES

Last date for Purchase of Bidding Document	Can be downloaded from Institute website
Last date for submission of completed bidding document	15 / 03 /2016 up to 4 PM. by registered/speed post/ Courier only
Date of opening of technical bid	16/03/2016 at 11.30AM P.M. in conference hall IGIMS, Patna.
Date of demonstration of equipment	To be informed to the qualified bidders qualifying after opening of technical bids.

INDIRA GANDHI INSTITUTE OF MEDICAL SCIENCES,

SHEIKHPURA, PATNA -800014 (Bihar, India)

Sl. No. OF TENDER: _____

FILE NO. : Tender No.: _____

Tender form issued in favour of:

_____
_____

Dear Sir,

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

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

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

3. I/We have gone through all terms and conditions of the tender documents before submitting the same.
4. I/We hereby agree to all the terms and conditions, stipulated by the I.G.I.M.S. - Patna including delivery, warranty, penalty etc. Quotations for each group are being submitted under separate covers, and sheets and shall be considered on their face value.
5. I/We have noted that overwritten entries shall be deleted unless duly cut & rewritten and Initialled.
6. Tenders are duly signed and stamped.(No thumb impression should be affixed)
7. I/We undertake to sign the contract/agreement, if required, within 15 (Fifteen days) from the date of issue of the letter of acceptance, failing which our/my EMD/Bid deposited may be forfeited and our/my name may be removed from the list of suppliers

Yours faithfully,

(Signature of Bidder with full name and address)

CHECK LIST FOR TERMS AND CONDITIONS

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

Sl. No.	Terms & Conditions as per Bidding Document	Page No.	Remarks
1.	**Status of Bidder:** • Manufacturer or Authorized Agent of the Manufacturer • Whether Public Undertaking, Public Ltd., Private Ltd. Company or Proprietary Firm/partnership firm • (Please attach Notary certified **MANUFACTURER'S AUTHORISATION FORM as per FORMAT placed at Annexure – III)**		
2.	**Power of Attorney as per Annexure - V** in favour of person to sign, submit and negotiate the bid.		
3.	Certificate towards market standing of minimum 05 years in the area of supply and or maintenance of bio-medical equipments.		
4.	Certificate for sole ownership / partnership		
5.	Statement of financial standing from bankers		
6.	Statements of turnover per year for last three successive years duly certified by the Chartered Accountants.		
7.	**Notary certified User List** (List of Govt. /Semi Govt., Reputed Pvt. Hospital) where quoted model of the items has been supplied and installed.		
8.	**Notary certified Supply** order copy (Minimum 3nos. or more) issued by Govt./Semi Govt.//Reputed Pvt. Institutions/organization for the quoted items. (same model)		
9.	**Notary certified Performance certificate** of the same supplied machine (of quoted make and Model) issued by **Head of the deptt. or Institution** after a minimum period of six months of installation		
10.	Prerequisite (if any) for installation of the Machine, if any, to be provided by the Institute.		
11.	Whether rates quoted are inclusive of all taxes or not.		
12.	Whether rates are quoted as per format mentioned in the Bidding Document or not.		
13.	Affidavit to the effect that the bidder is not blacklisted by any Govt. agency or have no pending case either Civil or Criminal against them.		
14.	Affidavit, to the effect that the bidder is not supplying the quoted item(s) to any other Govt. /		

	Pvt. Organizations / Institutions / Hospitals at the rate lower than the rate quoted against this tender.		
15.	**Quality Assurance Certificate** like ISI, ISO-9002, IP/BP, CE, FDA (US) or any other (please specify)		
16.	**Bid Security** amount deposited is enclosed or not. If yes, please mention the details.		
17.	**Original Technical Catalogue** of the quoted model		
18.	Certificate, to the effect that bidder will maintain the quoted item(s) during Warranty period of three years including all spares, accessories, consumables etc., (Please mention the name of the item / items with price, which are not supplied by the bidder free of cost with frequency of replacement)		
19.	Certificate, to the effect that bidder has quoted its rate for Comprehensive Annual Maintenance Contract inclusive of labour, spares, consumables, accessories etc. on per year basis for a further period of seven years after expiry of warranty period of three years in the **price bid**. (Please mention the name of the item / items with price, which are not supplied by the bidder free of cost with frequency of replacement during Comprehensive Annual Maintenance Contract period in the price bid)		
20.	Acceptance of all terms / conditions towards **after sales / services** as mentioned in the bidding document.(Clause No- 13 of " Instruction to Bidder " & clause no- 3, 4 and 5 of Condition of contract.)		
21.	**Compliance Statement** with relation to the technical specification as mentioned in the bidding document duly supported by the original catalogue. The bidder must quote specification in the compliance column Mere writing" Complied shall not be accepted.		
22.	**Compliance Statement** with relation to the terms & conditions as mentioned in the document.		
23.	**PAN and copies of Income Tax Returns** for the last three years.		
24.	Duly attested copy of sales tax/Vat registration certificate.		

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

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

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

(Name of the Bidder with signature & seal)

ELIGIBILITY CRITERIA

01	Manufacturers or their authorized dealers/Indian subsidiaries/direct importers having a place of business in any of the States of India are eligible to participate in this tender.	Mentioned Page no.
02	The bidder and manufacturer of the equipment offered should be in the business of the supply and installation of same / similar equipment for the last five calendar years.	
03	(a) The manufacturer should have completed at least 05(Five) nos. installations of the quoted items in Govt. /Pvt. Institutions /Hospitals in India. The installations mentioned by the manufacturer in their offer must be functional and performance certificate for the same issued by the user concerned also be attached with the offer. (b) The bids quoted as the authorized representative of the manufacturer meeting the above criteria 02 (a) should have also supplied and installed at least 03(Three) nos. installations of the quoted items in Govt. /Pvt. Institutions/ Hospitals in India in last five years from the last date of submission of tender. The installations mentioned by the authorized representative in their offer must be functional and performance certificate for the same issued by the user concerned also be attached with the offer.	
04	The Bidder should be public undertaking /Autonomous Body /Public Ltd./Pvt. Ltd. Company or proprietary firm /Partnership Firm and should be in medical equipment business since last five years in India. The Bidders having manufacturing facility in their name in India for the majority of the items offered by them shall be given preference.	
05	The Bidder (manufacturer or their authorized agent) should have had average annual financial turnover of Rs. 50 Lakh during the last three years ending s 31st March 2015.	
06	Bidders who have the capability to attend repairs of these equipment within the time mentioned in this bidding document and who are willing to provide stand by equipment or replace the faulty equipment if the repair/down time extends beyond 72 hours from the time of reporting of the fault within the next 48 hours (total down time should not exceed 5 days in one instance). The bidders who have the capability to ensure the uptime mentioned in this document (Documentary proof shall be submitted on the after sales facilities and expertise of the bidder.)	
07	Bidders are not offering the equipment of a firm /company that has been blacklisted by Indira Gandhi Institute of Medical Sciences – Patna or blacklisted/debarred by any other State / Central Government's organization.	

Note:

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

INSTRUCTION TO BIDDER

GENERAL INSTRUCTIONS T0 BIDDERS

1. **Tendering System**

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

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

PART - II titled as PRICE BID

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

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

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

4. The "Bidding Document" along with terms and conditions, technical specification can be obtained from the office of the Store Officer, IGIMS, Patna on payment of Rs. 2000/-(Rs. Two thousand only) Non –refundable for each Group 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 alongwith the completed documents in the form of demand draft in favour of Director , IGIMS, Patna, payable at patna towards cost of the " Tender documents" Bidder is required to attach seprate D D for the same in a seprate envelop super scribed with " cost of bidding document" if the cost of tender document is not submitted by the bidder, his offer shall be outright rejected .

6. Last date for submission of bidding document is 15/03/2016 by speed/Regd. post/ Courier only

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

Earnest Money2% of the cost of Equipment required to be submitted along with tender by Demand Draft from any scheduled Indian Bank (valid up to one year from the date of technical bid opening.) only along with the tender favoring Director, I.G.I.M.S. – Patna (payable at Patna). No interest is payable on EMD/ Bid security.

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

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

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

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

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

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

h. The EMD shall be in one of the following forms:
i.; A demand draft in favour of Director, I.G.I.M.S. – Patna (payable at Patna);

OR

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

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

9. Bidder(s) should mention the DGS & D registration, if registered, and attach photocopy of DGS &D registration certificate Photocopy of Income tax & sales tax clearance certificate should be enclosed.

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

11. The Bidder's shall have to submit the following documents (Certified by Notary) in technical bid: -

a. User List (List of Govt. / Semi Govt., Reputed Pvt. Hospital) where quoted model of the items has been supplied and installed.

b. Performance certificate of the same supplied machine (of quoted make and Model) issued by **Head of the deptt. or Institution** after a minimum period of six months of installation.

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

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

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

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

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

12. Installation & site plan:-

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

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

13. After Sales Service Conditions:

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

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

c. Guarantee/Warranty Terms:

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

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

iii. All the equipments including the accessories supplied as per the technical specification as mentioned in the bidding document should carry comprehensive warranty (including all spares, accessories and consumables) for a period mentioned in this document in the first instance. During this period, the successful Bidder shall replace all defective parts / accessories / consumables and attend to all repairs/break downs and undertake stipulated number of preventive maintenance visits to every user installation site. The cost of spare parts for all replacements has to be borne by the successful Bidder during the period of comprehensive warranty. The items which are not covered under warranty should be clearly mentioned along with rate of the items . If any spares / accessories / consumables etc. are not replaced by the bidder during warranty period, bidder should mention it clearly with name of the items with frequency of replacement and its rate

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

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

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

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

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

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

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

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

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

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

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

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

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

Xvii;- The offered warranty includes:

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

d. <u>Comprehensive Annual Maintenance Contract</u>:

- The decision to enter into CMC or AMC will be determined on the basis of cost and complexity of the equipment by the Tender Inviting Authority, at its discretion, prior to the expiration of warranty period.
- The Comprehensive Maintenance Contract (CMC) is otherwise an extended warranty. All the terms and conditions agreed by the successful Bidder for executing the comprehensive warranty of the equipment shall be extended during the period of CMC, only difference being the payment of CMC charges is absent during the period of comprehensive warranty.
- The cost of CMC, accessories and spares, reagents and consumables as in case may be quoted along with taxes applicable, if any. The taxes to be paid extra, to be specifically indicated. In the absence of any such stipulation the price will be taken inclusive of such taxes and no claim for the same will be entertained later.
- Failure/refusal on the part of the successful tender supplying/installing the equipments to enter into CMC with the Tender Inviting Authority, at the end of the Comprehensive Warranty Period, if the Institute, as the case may be, desires so, shall lead to forfeiture of performance security and may also result in the blacklisting/debarring of the Bidder.
- The successful Bidder shall also indicate the rates for the CMC in price bid form and such rates are binding on the successful tenders after the expiration of the warranty period. The yearly rates for CMC shall remain the one and the same as quoted in the price bid form for the extended years.
- Cost of CMC (excluding taxes, if any) will be considered for Ranking/Evaluation purpose.
- The payment of the agreed CMC charges will be made as per frequency for payment after satisfactory completion of said period, on receipt of service report/ break down report from the user.
- The Bidder shall also have to submit whether periodic replacement of consumable items are required for proper functioning of their quoted machine/Equipment? If yes they should

submit the list of such consumables along with price list and frequency of replacement per year if the same is not included in quoted Comprehensive Annual Maintenance Contract charges per year.

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

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

15. Firm have to provide a minimum **UPTIME GUARANTEE** of 95% (95% of 365 Days) per year during the warranty period as well as during the Comprehensive Annual Maintenance Contract.

16. While calculating the total unit price of the item / system to be procured, expenditure to be incurred in maintenance of the quoted item / system including all spare parts for a total period of seven years after expiry of the warranty period of three years shall also be taken into consideration. Accordingly, it is mandatory for the bidders to submit the rate for Comprehensive Annual Maintenance Contract (with spares) for a minimum period of seven years after the expiry of warranty period of three years.

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

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

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

20. Proof of the official Indian agent certificate of the firm must be attached. (Notary Certified Photocopy)
21. In order to fully and optimally utilize the equipment, training to Para Medical Staffs and Doctors should be provided. In continuation to this training, separate maintenance training for the machine and the sub systems should also be given to the "Equipment Maintenance Engineer" and "Equipment Maintenance Technicians". All the financial commitments in this regard shall be met by the bidder(s).

22. Bidder(s) have to submit an affidavit to the effect that they have not supplied the offered item(s) to any Govt., semi Govt. / Pvt. Organization, Institution, Nursing Home etc. at the price lower than the price offered to I.G.I.M.S. – Patna.

23. All the claims regarding meeting the specifications shall be duly supported by appropriate, latest technical catalogues/brochures from the manufacturer. Simply stating that the equipment(s) meets the specifications is not sufficient and any such quotations will be summarily rejected. Computer printed documents or Photostat copy or laser printouts will not be accepted as technical catalogues / brochures.
24. Bidder might be required to demonstrate the system at the discretion of the institute.

25. Notification of Award/Letter of Intent (LOI)

a. Before expiry of the tender validity period, the Institute will notify the successful Bidder(s) in writing, by registered / speed post or by fax or by email (to be confirmed by registered / speed post immediately afterwards) that its tender for equipment(s), which have been selected by the Institute, has been accepted, also briefly indicating there in the essential details like description, specification and quantity of the goods & services and corresponding prices accepted. This notification is undertaken by issuing a Letter of Intent (LOI) by the Institute.

b. The successful bidder, upon receipt of the LOI, shall furnish the required performance security and submit an agreement in the prescribed format within ten days, failing which the EMD will forfeited and the award will be cancelled.

c. The Notification of Award shall constitute the conclusion of the Contract.

26. **Signing of Contract**

The successful bidder shall execute an agreement for ensuring satisfactory supply, installation, commissioning and the after sales service/support during the warranty period and during the Comprehensive Annual Maintenance Contract.

27. The Director reserves the right to accept or reject any or all tenders without assigning reasons.

28. The Director reserves the right to modify, add or delete any terms & conditions of the contract as and when required.

29. **Amendment of tender documents**:

a. At any time prior to the dead line for submission of Tender, the Institute may, for any reason, modify the tender document by amendment.

b. The amendment shall be notified and uploaded on the institute website www.igims.org only and such amendments shall be binding on them thereafter.

c. The Institute shall not be responsible for failure to inform the prospective bidders. Purchasers of tender documents are requested to browse the website of the Institute for information/general notices/amendments to tender document etc on a day to day basis till the tender is concluded.

30. The Dispute, if any, will be subject to Jurisdiction at Patna (Bihar).

Sd/-
Director,
I.G.I.M.S. - Patna

CONDITIONS OF THE CONTRACT

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

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

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

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

03. **Warranty Period**:

a. The "**Complete System**" shall remain under warranty period of **three years** from the date of satisfactory installation. The Complete System should include the basic unit and allied supporting components like UPS, Computer System, Printer, De-ionizer, Dehumidifier etc to be supplied by the bidder along with basic unit.

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

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

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

1 Year = 365 days
95% of 365 days = 347 Days per annum

e. The bidder shall compensate the uptime less than the specified above for **every additional day** of down time over and above 18 days stipulated above, warranty period will get extended by one week as penalty at no extra cost i.e. the extended penalty period will be equal to one week for every additional day of down time.

f. During warranty period, **bidder** will make the "**Complete System**" in satisfactory working condition. In case, any spare parts, accessories, PCB, consumables etc. needs replacement due to normal wear and tear, **bidder** will supply and install the same for which no additional payment is to be made with a validity to cover warranty period.

g. In case, the **bidder** is not able to provide services (and the items / accessories is not functioning as the reason thereof) due to natural calamity (act of God), Political unrest, Riot and fire at the user site, then in such a situation the warranty period will be extended by the period for which the item / accessories could not be operated because of supplier not been able to provide services.

h. During warranty period, in case of any alleged damage due to accident / human error, a committee under the Chairmanship of Director, I.G.I.M.S. – Patna with one member from the bidder and one member from the Institute will decide the authenticity of the claim. The decision of the committee shall be final and biding on both the parties.

04. **After Sales Services**: -

a. After expiry of the warrantee/Guarantee period of the equipment, the Indian agent will have to undertake the Comprehensive Annual Maintenance contract (with spare parts, accessories, consumables etc.) of the Complete System for the further life span of equipment. The life span of the equipment shall not be less than ten years. In special circumstances the total life span of the Equipment/ items may be reduced by the Institute.

b. The Complete System should include the basic unit and allied supporting components like UPS, Stabilizer, Computer System, Printer, De-ionizer, Dehumidifier etc to be supplied by the bidder along with basic unit.

c. During Comprehensive Annual Maintenance Contract, bidder shall provide at least **four maintenance visits per year** at regular interval for usual maintenance and supervision. If bidder fails to provide these maintenance visits at regular interval per year, a proportionate deduction in the form of penalty at the rate of 25% of contract amount per year will be deducted.

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

e. During Comprehensive Annual Maintenance Contract, **bidder** shall maintain and keep **95% uptime** per year of the "**Complete System**" as per calculation given below:-.

1 Year = 365 days
95% of 365 days = 347 Days per annum

f. The bidder shall compensate the uptime less than the specified above for **every additional day** of down time over and above 18 days stipulated above, warranty period will get extended by one week as penalty at no extra cost i.e. the extended penalty period will be equal to one week for every additional day of down time.

g. During Comprehensive Annual Maintenance Contract, **bidder** will keep the "**Complete System**" in satisfactory working condition. In case, any spare parts, accessories, PCB, all type of consumables etc. needs replacement due to normal wear and tear, **bidder** will supply and install the same for which no additional payment is to be made. .**If any spares / consumables / accessories etc. are not covered under Comprehensive Annual Maintenance Contract charges, it should be clearly mentioned with frequency of replacement and with rate. The validity of rate of such items should also be mentioned clearly. What will be the rate of escalation on the quoted rate after expiry of the validity of rate of such item must be mentioned.**

h. The payment of Comprehensive Annual Maintenance Contract will be made on half yearly basis after submission of satisfactory functioning report of the Complete System by the officials authorized by the Institute.

i. In case, the **bidder** is not able to provide services (and the items / accessories is not functioning as the reason thereof) due to natural calamity (act of God), Political unrest, Riot and fire at the user site, then in such a situation the Comprehensive Annual Maintenance Contract will be extended by the period for which the item / accessories could not be operated because of supplier not being able to provide services.

j. During Comprehensive Annual Maintenance Contract, in case of any alleged damage due to accident / human error, a committee under the Chairmanship of Director, I.G.I.M.S. – Patna with one member from the bidder and one member from the Institute will decide the authenticity of the claim. The decision of the committee shall be final and biding on both the parties.

05. **Performance Security**

a. There will be a performance security deposit amounting to 10 % of the total value of the equipment excluding taxes, which shall be submitted by the successful bidder within 10 days from the date of issuance of "Letter of Intent".

b. The contract duly signed and returned to the Institute shall be accompanied by a demand Draft or Bank Guarantee in the prescribed format.

c. Upon receipt of such contract and the performance security, the Institute shall issue the Supply Orders containing the terms and conditions for the execution of the order.

d. Failure of the successful bidder in providing performance security as mentioned above and / or in returning contract copy duly signed in time shall make the bidder liable for forfeiture of its EMD.

e. The Performance security shall be denominated in Indian Rupees or in the currency of the contract as detailed below:

i. It shall be in any one of the forms namely Account Payee Demand Draft or Bank Guarantee issued by a Scheduled bank in India, in the prescribed form as provided in this document endorsed in favour of the Institute.

ii. Institute will release the Performance Security without any interest to the successful bidder on completion of the successful bidder's all contractual obligations including the warranty obligations & after receipt of certificates confirming that all the contractual obligations have been successfully complied with.

06. Delivery period/Liquidated Damage: -

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

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

07. Payment: -

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

a. In case, the equipment is purchased in Indian Currency then the payment will be made as per following scheduled.

b. 90% payment will be released against delivery and successful installation of the equipment & balance 10% will be released on submission of 10 % Bank Guarantee of the total cost of ordered value. This Bank Guarantee will be released after expiry of guarantee period.

c. L. C. will be opened only after receipt of the 10% bank Guarantee of the total cost of equipment (with a minimum validity to cover up the warranty / guarantee period), confirmation letter of all our terms and condition, submission of agency certificate in favour of Indian agent whohave submitted and quoted the price, name of the Bankers abroad; intimation about country of origin and 10 copies of Performa

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

08. **Validity of Price:-**

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

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

10. **Packing & Marking:-**

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

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

12. Insurance: -

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

13. Installation & site plan:

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

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

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

evaluation of the item whether UPS is suitable or CVT / Servo Voltage Stabilizer will serve the purpose.

15. Responsibility:-

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

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

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

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

19. Penalties for non-performance

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

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

20. **Termination of Contract**

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

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

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

d. Termination for insolvency: If the successful bidder becomes bankrupt or otherwise insolvent, the Institute reserves the right to terminate the contract at any time, by serving written notice to the successful bidder without any compensation, whatsoever, to the successful Bidder, subject to further condition that such termination will not prejudice or affect the rights and remedies which have accrued and / or will accrue thereafter to the Institute.

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

21. **Fall Clause**:

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

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

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

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

Sd/-
Director,
IGIMS - Patna
.

CHAPTER:

Schedule of the Requirement.

SCHEDULE OF THE REQUIREMENT

Sl No	Name of the Department	Name of the equipment
Group	Name of Department	Name of Machine Equipments
A		**As mentioned in the NIT**

ANNEXURES

Annexure - I (a)

PRICE SCHEDULED FOR DOMESTIC GOODS OR GOODS OF FOREIGN ORIGIN

LOCATED WITHIN INDIA.

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

Total quoted price in Rs. ……..
In Words: ……
Note:

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

Place: Name:
Date: Business Address;-

Signature of Bidder;-

Seal of the Bidder;-

Annexure: I (b)

PRICE SCHEDULED FOR GOODS TO BE IMPORTED FROM ABROAD

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

To be paid in Indian Currency (Rs) : ……..
Total Tender Price in Foreign Currency:……
In Words;-……

Note:-

1. If there is a discrepancy between the unit price and total price THE UNIT PRICE shall prevail.

2. The charges for Annual CMC after warrantee shall be quoted separately as per price scheduled.

3. The Bidder will be fully responsible for the safe arrival of the goods at the named port of entry in goods condition as per terms of CIP as per INCOTERMS, if applicable

Indian Agent;-
Indian agency commission: % of FOB

Name:
Signature of Bidder;-
Business address;-
Signature of Bidder
Seal of the Bidder;-

Place;-
Date

Annexure - II

COMPREHINSIVE ANNUAL MAINTENANCE CONTRACT PRICES SCHEDULE

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

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

a) The rate of Comprehensive Annual Maintenance Contract as mentioned above should cover the Complete System. Complete System should include the basic unit and allied supporting components like UPS, Stabilizer, Computer System, Printer, De-ionizer, Dehumidifier etc to be supplied by the bidder along with basic unit.

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

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

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

e) Uptime Guarantee: 95% of 365 days

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

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

Seal and Signature of the bidder

ANNEXURE – III

MANUFACTURER'S AUTHORISATION FORM

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

No.

Dated:

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

Dear Sir,

Tender No :
Equipment Name :

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

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

3. We also hereby undertake to provide full guarantee/warrantee /Comprehensive Annual Maintenance Contract as agreed by the bidder in the event the bidder is changed as the dealers or the bidder fails to provide satisfactory after sales and service during such period of Comprehensive Warranty / Comprehensive Annual Maintenance Contract and to supply all the spares/ accessories / consumables etc. during the said period.

4. We also hereby declare that we have the capacity to manufacture and supply, install and commission the quantity of the equipments tendered within the stipulated time.

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

Date: (Name of manufacturers)

Place:

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

ANNEXURE – IV

BANK GUARANTEE FORM

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

WHEREAS _____ (Name and address of the supplier) (Hereinafter called "the supplier") has undertaken, in pursuance of tender no_____ dated _____ (herein after called "the contract") to supply The Director, Indira Gandhi Institute of Medical Sciences, (address) with ..... (description of goods and supplies).

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

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

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

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

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

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

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

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

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

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

ANNEXURE - V

POWER OF ATTORNEY

(On a Stamp Paper of relevant value)

I/ We……(name and address of the registered office) do 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 201_ For_____

(Name, Designation and Address)

Accepted

_____

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

Date : _____

SPECIFICTION AND ALLIED TECHNICAL DETAILS

Group-B(ENT)

a;

1. 2-Channel Diagnostic Audiometer

2. Shoud have Air conduction, bone conduction, High Frequency PTA, free field and speech audiometric testing
3. Pure tone, pulse tone, warble tone, narrow band, white and speech noise, Diagnostic Tests SISI, Decay, ABLB, MLB, Stenger,Speech tests from SD-memory card, CD or microphone
4. Provision of direct printout of the results
5. Provision to store report as PDF on USB
6. Provision of LAPTOP and PC-Interface via USB Port, NOAH compatible
7. The Audiometer must be capable of storing at least 900/1000 patient data
8. Apart from the above features, should also have following technical specifications:-
9. CE / FDA Marking
10. Briefcase mode should nat be considerable

    - Air conduction - -10 to 120dBHLheadphone and frequency
    - Bone conduction- -10 to 80dBHL
    - Free field :- -10 to to. 90 dBHL
    - Test frequencies:- 125 – 8,000 Hz, HF. up to 20,000 Hz
    - Level steps: 5 dB, 2 dB or 1 dB
    - **Masking signals**: narrowband noise, white noise and speech noise
    - **Speech tests**: SRT, WRS, UCL
    - **Standards:** IEC 601-1, IEC 645-1 class 2,IEC 645-2, type B According to medicalDirective 93/42/EEC
    - **LAPTOP / PC-interface**: USB
    - **Power supply**: Mains 100-240 V~, 50/60 Hz ± 10%

Standard accessories

- Headphones DD 45 or TDH 39
- Bone vibrator B71
- HDA 300 HF Head Set
- Patient response switch
- 2 GB SD-memory card
- Gooseneck microphone
- Power cable
- Pad of audiogram forms
- Lap Top / Pc
- Ink jet Printer

b. Tympanometer

Diagnostic Impedance Audiometer with FDA and CE Marking
DEASIRABLES

1. Should have facility for Automatic Pump Control.
2. Provison to select the pressure ranges and pump speed.
3. Reflex test with tone and noise both IPSI and CONTRA.
4. Eustachian Test facility for both Perforated and Intact Eardrum.
5. Apart from regular probe tone of 226Hz, the instrument should also have the High Frequency Probe Tones of 1KHz.
6. Should Run on Mains and Battery
7. Should have internal Memory of More than 500 Patients

Technical Specifications and Accessories:-

Tympanometry mode

Probe frequency, intensity:- 226 Hz ± 1%, 85 dB SPL
High frequency:- 1000 Hz
Pressure range automatic:- + 200 to - 400 daPa,
manual :- + 200 to - 600 daPa
Volume range 0.1 to 6.0 ml
Accuracy:- ± 5% or ± 10 daPa
Test time :- < 4 seconds

Reflex Mode

Test frequencies:- 500, 1000, 2000, 4000 Hz ± 2%
Noise Stimuli:- WN / HP / LP
Test method:- IPSI and CONTRA
Intensities ipsi:- 70 to 105 dB HL
Intensities contralateral:- 70 to 120 dB HL with contra phone
Intensity setting:- automatic or manual

Reflex Decay Mode

Test time 13 sec., 10 sec. auto tone present

Eustachian Tube Mode

Pressure range + 300 to - 400 daPa

Printer:- Thermal printer
Display:- Graphic LCD-Display,
Power supply:- Mains 100... 240 V~, 50/60 Hz, 25 VA
PC Interface:- USB

Standard accessories:

Probe, contra phone, , ear tip set, calibration cavity with probe holder, mains cable and 50 rolls of 110 mm thermal paper.

C; DIAGNOSTIC TWO CHANNEL ABR (BERA) OAE(DP,TE & SOAE) AND ASSR

- Must be a Single Portable unit with possibility of all tests suitable for screening and measurement of ABR, ASSR and OAE
- Should be a diagnostic unit suitable for screening and measurement of hearing loss in patients for auditory pathway impairment.
- Should be a Single unit only to perform Single Frequency (Phase Coherence) & Multi frequency ASSR (Using F-test) both.

- Same Unit/Hardware Should screen and test for DPOAE, SOAE & TEOAE. Tests must display waveform, graphs and response spectrum for both ear apart from result as Pass/Refer
-
- Should be CE & FDA approved
- Should be possible to measure auditory evoked potential with Two Channel ABR/EP system for short latency, middle latency, long latency and cognitive EP (P-300, MMN) for pathway impairments.
- Should able to perform VEMP and EcochG Test.
- Should be able to present the stimulus in units of dBSPL, dBnHL and dBHL. Should also be able to have stimulus envelope shapes/envelopes of rectangular, Blackmann, Hamming, Hann, Bartlett windows
- Auditory stimulator should have Tone, Click, Chirp & Frequency Specific Chirp stimulation with left, right and double sided stimulation with stimulation level from 1 to 130 dB SPL and stimulus frequency rate from 0.1 to 50 Hz
- Should have High Pass Filter, Low Pass Filter and Notch filter, A/D converter 16 bit, Sampling rate per channel 200 to 80000 Hz, CMRR not less than 100 dB
- Should be portable and to be supplied with table mounting stand.
- Should create reporting in Microsoft word.
- Can be upgraded for Pure tone Audiometry(PTA).
- Should have the feature of Auto marking.
- Should create protocols for automatic testing.
- Unit should run from USB port of laptop/desktop, without separate connection to mains 220 V power supply to avoid supply voltage artifacts
- Should also be able to have stimulus type- Mixed modulation, Exponential Modulation, Three Carriers & frequency specific Chirp.
- Amplitude Rejection should be between 10-500µV.
- Should have High Pass Filter, Low Pass Filter and Notch filter, A/D converter 16 bit, Sampling rate per channel 300 to 80000 Hz.
- Accessories to include- cup EP electrodes, Insert earphone 3A, conductive paste and abrasive paste, Suitable Laptop, Printer, Trolley & Patient coutch.

D;. OAE and ABR Hearing Screener

- Improved backligt and panel that is easier to read
- Probe holder for safer handling
Impoved algorihms for faster test times
Storage capacity for up to 300 records
Wireless data transmission
software for easy data processing and printing
Choice of configuration
- OAE/ABR combination including
TE OAE and DP OAE

DPOAE and TEOAE available for complete
OAE screening
Automatic Operations for quick and easy
screening
- Probe fit and calibration
- 5 frequency pair available DPOAE
- 5 frequency bands available TEOAE
- Pass criteria set to NIH 2000 protocol
(configurable)
Programmable test frequencies for more

highly trained personnel (i.e. audiologist)
Set the environment to Noisy, Normal or Quiet to get the most accurate results
Real-time graphic test progress is available for accurate reporting
All test information is saved and stored for easy retrieval

ABR configuration

Automatic Operations for quick and easy screening
- Impedance test
- Probe fit and calibration
- Testing of up to 8 stimulus conditions per test
- Pass criteria set to NIH 2000 protocol
(configurable)
Ability to create a latency intensity function
Manual peak V scoring
Manual threshold search
Real-time graphic test progress is available for monitoring
Click and tone pip stimulus available
Stimulus rate of 32 to 62 stimuli per second
Stimulus level of 0 to 98 dBSPL

E;. ENDOSCOPIC SINUS MICRODEBRIDER & HIGH SPEED DRILL SYSTEM

Console & Footpedal

- Should be a versatile powered ENT system, that lets to choose just the power required for various ENT and Aesthetic related surgeries
- The system should be suitable for wide variety of procedures ranging from Rhinology, Transnasal procedures, Otologic procedures, Nasopharyngeal / Laryngeal / tracheal and Bronchial applications.
- Console should have in-built, user friendly interactive menu and illustrative help guide
- Should have a Touch screen monitor for better visibility of Speed and Modes.
- Should be able to adjust the irrigation levels and bur/blade speed with the touch screen control.
- The various parameters should be able to adjust either from touch screen panel or from the multifunction foot switch.
- Should be able to connect multiple hand pieces at a time like Debrider hand pieces (Upto 5000 RPM in Oscillating mode & 12000 RPM in Forward mode), Low speed Stapes drill (Upto 16000 RPM) ,High speed Otologic drills (Upto 80000 RPM) and Microsaws.
- Console should recognize various hand pieces and automatically adjust the settings.
- Should have in-built pumps for Irrigation (5cc / Min to 100cc / Max) .
- Should have multifunction ergonomically designed foot control with light emission for easy identification.
- Should be able to control Speed, Forward and Oscillation modes from Foot Pedal.
- Should be able to toggle between active hand pieces from the Foot control itself.
- Should have option for remote control Irrigation to operate from sterile area.
- Should have in-built Lens cleaning system for intra-operative cleaning of various Endoscope lens.
- Should have the provision to mount the console on various sizes of IV pole.

Debrider Handpiece :

- Should be able work up to the speed of 12000 RPM in forward rotation and 5000RPM in oscillation mode.
- Should have finger tip control to rotate only the tip of the blade up to 360 deg.
- Should have straight suction path to reduce clogging and allow efficient tissue removal.
- Should have integrated blade locking system to lock the blade tip rotation.
- Should have integrated side grooves and cable clips to provide better tubing management.
- Should have Titanium body to avoid rusting.
- Should be light in weight and ergonomically designed.
- Should have different varieties of debrider Blades like Straight and Curved blades range starting from 12 degree and available upto 120 degree.
- Should have rota table laryngeal blades from 2.9 mm – 3.5 mm & 4 mm. Length from 18 cm, 22 cm. 22.5 cm, 27 cm & 27.5 cm.
- Should have Tonsillectomy , Adenoidectomy , Inferior Turbinoplasty blades.
- Should have Tip-rotatable subglottic, tracheal, bronchial blades.
- Should have frontal sinus straight & curved burs, DCR burs.

Stapes / Middle Ear advance surgery Handpiece :

- Handpiece weight should not be more than 2 OZ.
- Should have variable speed footswitch control.
- Should be able to vary the speed up to 12000 RPM.
- Should be able work as an independent self-powered system and also have the option to work with the console.
- Oto-Flex burs should have color coding.
- Should have the application in Middle ear or Stapes footplate surgery.

Drill Handpiece :

- Should be ergonomically designed electrical Drill System with high Torque up to 38 mN-m and Power up to 120W
- Speed should be variable from 10,000 to 75,000rpm.
- Weight of the drill should not be more than 90gms and length should be less than 8.0 Cm with a diameter not exceeding 1.70cm
- Should have integrated cable to connect to console
- No Lubrication or seal should be required to run the motor
- Should have quick release and lock system for tools and attachments
- Should be suitable for Mastoid, Skull base and Neuro Otology applications
- Otology attachment of 7.5 cm length with straight & angled and attachment 7.0cm straight design for right balance in cutting efficiency, control, handling, and smoothness.
- An extensive selection of dissecting tools should be available in cutting and diamond surface in various diameters 0.6mm to 8mm
- In built irrigation should be available.
- There should be option to connect to skull base burs to access through endonasal approach

Trans Nasal Skull Base Burs / bipolar forcep :

- Should have burs enhance visualization with an endoscope and can help protect critical anatomy from a spinning bur shaft.
- Fully sheathed bur shaft to help protect surrounding tissue from spinning shaft

- 15° distal bend to enhance visualization when using an endoscope
- 13 cm length with slender hub and long tube for head and neck procedures
- Fully integrated irrigation to help cool bone and bur tube
- Inbuilt Suction should be available in Bipolar forcep
- Bipolar forcep should be available in straight sizes of 105mm & 170mm
- Up curve Bipolar forcep should also be available in 170mm
- Disposable suction tip should be available separately
- Bipolar cable should be universal in nature

F; Micro Debrider System for ENT Surgery

Specification

Console:
1. Console should be electrically operated and stand for the console should be provided.
2. Able to identify the connected handpiece.
3. Provide the power for microdill for stapes and high speed drill for Fess hand piece.
4. Have the display of the speed and mode of motion ie Rotation/oscillation.
5. The built in irrigation and coolant facility.
6. Console foot switch should have the facility to change the rotation of the hand piece.
7. Foot switch control.

(1) Microdebrider hand piece: Rotatable (2 Nos.)
1. Handpiece should be light weight for better handling and should be able to rotate the blade upto 360 degree during the surgery for precise disease removal.
2. Microdebrider hand piece should have built in suction to be connected on line during the surgical procedure.
3. Microdebrider blade should have the online irrigation facility.
4. Should be able to attach the various blades and burs required for various procedures like FESS, DCR, Polyps, laryngeal surgery, adenoidectomy.
5. Handpiece blades should have the forward and reverse motion for burs and the oscillation modes for the blades.

(II) Blades should have different types of operating blades as mentioned under
1. For FESS Tricut Blades 4mm.
2. For FESS Angled blades 40 dgree.
3. Blades for adenoid work.
4. Blades for laryngeal and subgottis work

Manufactured, designed, developed under FDA/European CE certification

G;; ENT Treatment Unit

- Atomizer-3
- Cold light source ,Dual Outlet & Head band
- Anti fog heater
- Instrument Tray
- Utility dust bin
- Bull lamp
- Automatic Suction
- Facilities for Ear syringing

General terms for all above instruments/equipments

1. All above instruments/equipments must be European CE/US FDA approved product.
2. Comprehensive training for lab staff and support services till familiarity with the system.
3. User/Technical/Maintenance manuals to be supplied in English for eligible instruments.

4. 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.

5. List of Equipments available for providing routine Preventive Maintenance Support as per manufacturer documentation in service/technical manual

6. Price of individual instruments and/ or full set should be quoted.

7. Prior Demo if needed.

8. Instruments should be made from High Quality Surgical Grade Steel

9. Instruments should have Laser surface or ebonized or equivalent finish to provide appropriate reflection lowering finish.

10. CO=/Catalogue number & article number should be mentioned on each and every instrument.

11. There should be country of origin/Manufacturing engraved on each and every instrument.

12. Company should have relevant experience in successful execution of similar work at least in five Institutes of national importance and central government Institutes.

13. Company should be at least in its 5 years of operations at the date of Submission of tender

14. There should be country of origin/Manufacturing engraved on each and every instrument.

15. Company should have relevant experience in successful execution of similar work at least in five Institutes of national importance and central government Institutes.

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H;-Endoscopic Set:

High Definition sinuscope	One	Telescope, HD,Autoclavable 0 Degree Direction of View - Diameter 4mm, length 15 to18 cms. Autoclavable
High Definition rigid Laryngoscope	One	Telescope,HD Autoclavable - Rod lens system - 70 Degree Direction of View - Diameter 10 mm, length 15-18cms
Rigid Otoscope	One	Telescope, 0 Degree Direction of View - Diameter 2.7mm, length 15 to 18 cms. -
Flexible nasolaryngoscope	One	• Field of view:- 85 degree or more • Direction of view:- 0^0 (degree) • Depth of field:- 5 to 50 mm or better • Distal end outer diameter:- 3.5 mm or less • Tip angulations range (degree):- Up 130^0 or higher, Down 130^0 or higher • Working length:- 240mm to 280 mm • Total length:- 450mm to 500 mm
Powerful Xenon Light Source	One	• A Powerful 300 Watt Xenon Lamp with emergency lamp facility • Automatically adjusts light intensity to achieve ideal illumination .
Fibre optic light Guide Cable	One	• An Autoclavable type Optic fiber light guide cable to be provided for better protection against mechanical and thermal stress • Length should be around 3 meter • The light guide cable should be autoclavable.
Full High Definition 3 Chip Autoclavable Camera Head :	One	• The full HD camera

		head should have resolution of 1920 * 1080 pixels. • Should have motorized optical zoom ranging from 0.9X to 1.8X and can be varied seamlessly. • Should have motorized focus function which can be varied steplessly from coarse to fine image. • Should have 3 programmable buttons which can be configured through the processor. • The camera head must be autoclavable.
Camera control unit:	One	• A full high definition processor should have resolution of 1920 * 1080 pixels. • Should have compatibility for selecting Progressive / Interlaced output • Should have a USB slot so as to take still pictures of Endoscope images
24'' or 26" Full High definition medical grade monitor :		• A Full HD medical grade high definition monitor with resolution of minimum 1920*1080 • -Should have 16:9 aspect ratio
Recording System.	One	• Consisting of Installer DVD, USB License dongle, video capture card, and USB Single foot switch. • Providing single USB capture Card which can be used in PC & Laptop also. • Desktop/Laptop • Colour Laser Printer
Trolley	One	Trolley should accommodate all Equipment

Group-C(Microbiology)

a;Specification for Real Time PCR with accessories

- A compact automated latest real time PCR system for in vitro diagnostic (CE-IVD marked & certified) application.\
- The table top open ended system on which diagnostic parameter for diseases like Influenza A&B, HBV, HCV, CMV, Inf, HIN1, MTbC,HSV1 & Dengue, Malaria ,chickenngunia 2 and genetic testing should be available with the manufacturer.
- Sample format should support Peltier blockOR Rotary Disc/chip based , enabling use of both 0.2 ml 0.06ml and 0.1 ml PCR tubes/ Strips with disc/well format.
- Temp range should be from ambient to 99^0C; temp Uniformity must be ± 0.02^0C
- Fast cycler with high ramping rate should be more than 10^0C for heating and 8^0C for cooling to enable fast cycling protocols.
- Excitation source should be with either multiple LED's or CCD with long life span and short optical path, supporting multiple wavelengths with minimum cross talks and detection by either PMT or photodiode.
- System should at least perform five colour/Duplex of multiplexing.
- System must be open or closed platform capable of performing chemistries like SYBR GREEN/TAQMAN, Hydrolysis probes, FRET, simple probes etc. Use of ROX dye to generate data is to be optional.
- The system should not require optical alignment or calibration, for easy transfer from one lab to other.
- System must allow use of sample volumes in the range of 10-100ul with Linear Dynamic Range should be of 10 orders magnitude
- System should be provided with appropriate analysis workstation, along with comprehensive software package and easy-to-use. Raw data export for validation purposes, various results report and export functions.
- System must be supplied with a high throughput Tissue Disruption system for processing of up to 192 samples at a time. System should be imported one with minimum 25 user in India as or additional item.
- The real time software should be provided with unlimited user licenses with individual user management and capable of digital signature /Logging Authority for very result file.

B;:- Specification of BOD Incubator

Sl NO	Name of the Machine			
01	B.O.D. incubator (Biochemical oxygen demand incubator) for culture of fungi at room temperature (20 ®C to 30®C)			
02	Size in cu FT 10	Inner dimension W x D x H 55 x 55x 90 cm	Capacity in LTR 285	No of Shelves 3
03	Temp range	5 to 60c with temp. setting fine and coarse knobs.		
04	Temp accuracy	+/- 0.5c		
05	Temp Uniformity	+/- 0.5c		
06	Power	220 volt		
07	Power failure alarm	Present		
08	Cabinet	M.S sheet, duly pre treated & finished with epoxy powder coated paint		
09	Inner chamber	Highly polished stainless steel		
10	Chamber	Duly insulated		
11	Shelves no.	3 (stainless steel trey)		
12	Outer door	Insulated & fitted with magnetic gasket for air tight closing for no temp loss with lock & key		
13	Inner door	Mode of unbreakable transparednt acrylic glass empanelled in Aluminium door frame for inspection of inspection of specimen without opening the door		
14	Cooling	CFC free		
15	Air circulation	Fan/ Blower		
16	Inner light	Door operated temp for illumination inside the chamber		
17	Safety thermostat	Provided		
18	Digital voltmeter	On the panel for reading of incoming voltage.		

Group-D- Pathology

A; Specification of Fully Automated Hematology Analyzer, 6 Part Differential

1. The instrument should be fully automated fluorescence flow cytometry based 6-part differential haematology analyzer offering automatic start-up, shutdown and sample-analysis.
2. The instrument should have random access discrete analysis modes for CBC +NRBC, CBC+DIFFERENTIAL+NRBC., CBC +RET+NRBC, CBC +RET +DIFF+NRBC
3. The instrument should have minimum 35 PARAMETERS reported:
   WBC, RBC, HGB, HCT, MCV, MCH, MCHC,RDWSD, RDW-V , PLT, NEUT %, LYMPH %, MONO%, EOS %, BASO %, NEUT #, LYMPH #, MONO #, EOS #, BASO #, PDW, MPV, PCT, PLCR, NRBC #, NRBC %, IG #, IG %, RETICULOCYTE%, RETICULOCYTE # ,LFR, MFR, HFR , IRF , RET-HE ,PLTO, IPF % TWO HISTOGRAMS – RBC, PLT and TWO SCATTERGRAMS
4. The instrument should have throughput of more than 90 samples per hour in differential mode and not less than 75 samples in specialized modes.
5. The sample aspiration volume for the complete differential blood count should not be more than 100 µl.

6. The instrument should have the following analysis modes , Manual – open mode, Capillary mode and optional Sampler mode.
7. The instrument should have Hydrodynamic focusing / impedance method for RBC/PLT channel.
8. The instrument should have Cyanide free Sls-hb /colorimetric method for the hemoglobin measurement
9. The instrument should be equipped with Fluorescence based semiconductor laser flow cytometry technology for enumeration of differentials and reticulocytes
10. The instrument should report NRBC with every CBC count and report corrected WBC count
11. Instrument should have options for auto sampler & integrated barcode reader.
12. Instrument should have facility for up gradation with additional clinical parameters
13. Instrument should be equipped with automatic rerun / reflex modes
14. Analyzer should be able to report Ret He (haemoglobin equivalent in reticulocytes) – useful parameter to differentiate Iron deficiency and anemia of chronic disorders
15. Analyzer must be able to report immature platelets
16. The instrument should report differentials in body fluid samples
17. Analyzer must be equipped with leucopenic mode
18. The instrument should have COMPREHENSIVE INFORMATION PROCESSING SYSTEM with: User-friendly Windows XP/ 7 based software. 100000 sample data with histogram and scattergrams storage. 99 QC files each with 300 points for QC can be stored.
19. The instrument should have minimum maintenance with Semiconductor laser has lower power consumption, higher stability, and longer life thus cutting down on maintenance cost.
20. The instrument should be EXTENSIVE QC FEATURES : Minimum one file for X bar M. Delta checks available for cumulative review. Option for online QC also available.
21. It should have high linearity of over 4 lacs for WBC's ,over 40 lacs for Platelets and over 500 NRBC's / 100 WBC's
22. The company supplying the instrument should have a good track record & excellent service and distributor network all over India .

B;SPECIFICATIONS FOR FULLY AUTOMATED 3-PART HAEMATOLOGY CELL COUNTER

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

C; SPECIFICATIONS for CRYOSTAT

1. Motorized coarse feed with Manual cutting
2. Intuitive touch screen user interface.
3. Reliable stepper motor technology delivers reproducible section thickness.
4. Chamber temperature control down to -35 degrees Celsius to accommodate a wide range of specimens.

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

D; Specification for Automated Tissue Processor

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

Group-E; (Gastroenterology)

A;TECHNICAL SPECIFICATIONS FOR ELECTROSURGICAL CAUTERY-

Description and Specification: -

A; System should be European CE and/or US FDA approved.

	Suitable for use during GI Endoscopy Procedure
	Should have mono polar cutting coagulation and blended current Facility and Bipolar configuration modefor polypectomy and papillotomy
	Should have time controlled cutting (Endo cut mode)
	Should have adequate safety feature
	Must be compatible with argon beamer system to be purchased in this tender
	Two pedal foot switch
	Patient plate with cable

	Should have display unit
	Should be compatible with endoscopic accessories from major manufacturer

B; **ARGON Plasma coagulation (APC)**

SHOULD CONSIST OF;-

01. ARGON BEAMER SYSTEM WITH TROLLEY WITH ARGON GAS SUPPLY SYSTEM, PATIENT PLATE AND DOUBLE FOOT SWITCH.
02. ELECTRO SURGICAL UNIT.
03. FLEXIBLE AUTO- CLAVABLE GIT PROBES.

ARGON BEAMER SYSTEM.

01. SYSTEM SHOULD BE SUTABLE FOR USE DURING VARIOUS G.I ENDOSCOIPIC PROCEDURES
02. ALL DISPLAY AND SIGNAL SETTING CAN BE SELECTED Individually
03. FACILITY FOR PROGRAME STORAGE POSITION FOR CUSTOMISED SETTINGS
04. ADEQUATE SAFETY FEATURE.
05. SHOULD CLEARLY MENTION ABOUT THE AVAILABILITY SUPPLY AND APPROX. PRICE OF ARGON GAS.)

ELECTRO SURGICAL UNIT.

- **SHOULD HAVE MONOPOLAR CUTTING, COAGULATION AND BLENDED CURRENT FACILITY AND BIPOLAR COUGULATION MODE.**
- **SHOULD HAVE TIME CONTROLLED CUTTING MODE (ENDO CUT) for polypectomy and papillotomy**
- **SHOULD HAVE ADEQUATE SAFETY FEATURES.**

FLEXIBLE G.I.T PROBES.

01. G.I.T flexible APC Probe 2.3 mm dia and working length about 2.2 meters.
02. G.I.T flexible A.P.C Probe 3.2 mm diameter and working length about 2.2 meters.
03. G.I.T Flexible A.P.C Probe Dia 1.6 mm and 1.5meter long
04. Appropriate connecting cable.

C; CAPSULE ENDOSCOPY SUSTEM

A COMPLETE SET INCLUDING THE FOLLOWING.

01. DATA RECORDER
02. WORK STATION.
03. CAPSULES.

WORK STATION.

01. WORK STATION WITH HIGH QUALITY COLOR INK JET PRINTER AND CUSTOMISED UP TODATE (latest) SOFTWARE.
02. SHOULD BE ABLE TO EXPORT DATA THROUGH J PEG IMAGE AVI MOVIES, HTML REPORTS.
03. DISPLAY SHOULD CONSIST OF IMAGE, LOCATION TRACK AND TIME BAR LATEST SOFTWARE.

DATA RECORDER.

RECORDING LENGTH APPROX 8 HOURS OR MORE.

CAPSULE

- **At least 10 small bowl capsules should be supplied with the set.**
- **Dimension should not be more than 26 mm x 11mm**

Group-F; (Obs& Gyne.)

C T G

Technical specifications for a Antepartum and intrapartum foetal Monitor (Cardiotocomachine)

1. Specifications for Antepartum and intrapartum Foetal Monitor (Cardiotocomachine)

- Cardiotoco machine must be a state of the art system manufactured by a reputed brand of manufacturer adhering to the following specifications.
- Cardiotoco machine should comprise of complete unit with printer and all the accessories
- **Monitor: it should be provided with**
  - **a.** Battery and main operation facility
  - **b.** Should have inbuilt LCD Screen/LCD TV monitor with facilities to display on screen fetal heart tracings and toco tracings
  - **c.** Should be compact, lightweight and should have inbuilt carrying handle and waterproof transducers
  - **d.** The unit should have

Fetal Heart Rate range 50-240bpm
External Toco range 0-127 relative units
Should have NST timer for antepartum applications

e. Highly sensitive ultrasound transducer which should be 1.5 MHz for less signa attenuation and good signal acquisition Ultrasound transducer should be a waterproof unit. Should have facility to connect any transducer in any socket for easy use. Preferably facility to switch between transducers when more than one transducer used.
f. Audible alert indication of fetal bradycardia and tachycardia
g. Ability to give an accurate and continuous trace and should be able to detec sudden beat changes upto 25bpm
h. External tocotransducer which should be a sealed waterproot unit with guard ring to reduce maternal respiration artefact
i. Patient event marker
j. Capability of automatic fetal detector
k. Digital numeric and text display alcng with audio signal of fetal movement Should have inbuilt keyboard entry screen for patient data entry, name etc. minimum 5 hour memory of traces with fast printing.
l. Should provide following accessories-Transducer belts, buckles, Main cables, interconnecting cables, ultrasound gel cables.
m. Inbuilt high resolution thermal/Laser printer with easily available cost effective paper
n. Should be either provided with trolley with wheels with locking facility for storage of transducers or the unit must have wall mounting and a protective cover with cabinet.
o. Should have facility to monitor twins at a time. Should be able to display both fetal heart traces clearly
p. Optional:
   1. Should have facility of connection of central monitor system
   2. Should have facility to record fetal hear rate pattern through fetal ECG
   3. Should have facility for intrauterine pressure monitor
   4. **Environmental factors:**

Shall meet IEC-60601-1-2: 2001 (of Equivalent BIS) General Requirements of safety for Electromagnetic Compatibility or should comply with 89/366/EEC:EMC- directive

5. **Power Supply:**
6. Power input to be 220-240V AC, 50Hz fitted with Indian plug
7. Should work on 220-240V AC as well as rechargeable batteries. Main adapter to be supplied

Standard Safety and Training

1. Should be FDA,CE,UL or BIS approved product
2. Comprehensive warranty for 2 years and 5 years CMC after warranty including UPS
3. Comprehensive training for staff and support services till familiarity with the system
4. Manufacturer training for staff and support services till familiarity with the system
5. Should have local service facility. The service provice provider should have the necessary equipment's recommended by the manufacturer to carry out preventive maintenance test as per guidelines provide in the service/ maintenance manual.
6. Additional specialty software/hardware if any should be quoted separately as optional

Documentation:

1. The availability of above mentioned features and technical specification must be substantiated with authentic published documents from manufacturer or regulatory bcies.
2. User/Technical/Maintenance manual to be supplied in English
3. List of equipment's available for calibration and routine Preventive Maintenance Support as per manufacturer documentation in service/ technical manual
4. Certificate of calibration and inspection
5. List of important spare and accessories with their their part number and costing

Grouo-G; Biochemistry

TECHNICAL SPECIFICATION FOR FULLY AUTOMATED HPLC SYSTEM WITH BINARY PUMP-01

1. Integrated HPLC system with Binary Pump

Binary Pump

a. Ninary gradient Solvent delivery system.
b. Integrated HPCL system with dual pump.
c. Delay volume <200 Ul
d. Flow range of +/-0.00ml/min or better.
e. Adjustable upper pressure limit cut-off up to 6000 psi maximum 20 µl Loops.
f. Should be capable of multiple (more than 10) gradient curves.

Auto Injector

a. Should be able to inject different volumes Ranges 1µl to 5ml of sample.
b. Pressure limit set of 5000 psi, adjustable up to 7000 psi maximum 20µl, 50µl, 200µl Loops

Dual wavelength Absorbance UV-VIS Detector / Diode-array detector

a. Wavelength rage 190-700nm or more with suitable analytical & preparative flow cells.
b. Light Source: Deuterium (D2) Lamp
c. Measurement range: 0.0001 to 4,0000 AUFS

d. Integral Cuvette holder to be used as qualitative bench-top spectrophotometer (preferable)

Refractive Index (R.I.) Detector

a. Refractive Index Range: 1.00 to 1.75 RIU
b. Measurement Range: 7.0 X10-9 to 5.0X10-4 RIU
c. Temperature Control: Internal over: 30 to 55 degree C or above.
d. Temperature control chamber (Preferred)
e. IEEE/Ethernet/ RS-232: for use with existing of future data products.

Chromatographic Software:

a. User friendly technology to acquire.
b. Process and report LC analyses, converting high-quality and accurate results.
c. Using a single window, Software should provide simplified tools for:
    - Control of chromatographic instrumentation.
    - Acquisition of chromatographic data.
    - Interaction with and processing of data
    - Comprehensive reporting
    - Management of data and chromatography system
    - System Performance (Basic System Suitability)
    - Plate Count – USP, EP, JP
    - Retention Index – K Prime
    - USP Tailing
    - Symmetry Factor

Necessary Computer, colour Printer, Software & UPS to be supplied with the System

Additional accessories: COLUMNS

a. C185µm, C85m, gel filtration (Lower molecular weight range – 1: higher molecular weight range - 1)
b. Sample clean- Cartridge
c. Sample clarification kit required for organic & aqueous samples
d. Solvent clarification kit required with degassing unit.

D:- High Capacity Centrifuge-75 to 100 tubes

Centrifuge Machine-75 to 100 tubes

Table top model with swing out rotor
head 16 tubes of 15 ml glass tubes
• Digital speed indicator with 60 min.
count down timer
• Speed 4000rpm & RCF2750 with rotor head
• Dynamic breaks, Imbalance detector,
cut off in case of uneven load
• Step less speed regulator & safety lid interlock to prevent lid opening during operation

Group- I (Cardiology)

a;TMT Machine

Exercise stress testing systems offer a wide array of unique diagnostic software options to evaluate myocardial function. Automatic arrhythmia detection, ST-segment analysis, and T-wave alternans are a few examples. In conjunction with a treadmill or ergometer, these systems provide a controlled environment for the observation of the

effects of increases in myocardial oxygen demand: exercise-induced systolic hypotension, exercise-induced angina, and/or the appearance of a heart murmur during exercise.

2 Operational Requirements 2.1 System complete with PC, Software, TMT and necessary cables is required with Bluetooth enabled wireless ECG transmission module.

3 Technical Specifications

3.1 System should acquire and analyze 12 leads.

3.2 System should be based on Windows platform with 17|| color monitor having minimum resolution 1280 x 1024. 80 GB HDD, CD-RW, Mouse, UPS for analyzer.

3.3 Should provide standard Full Interpretation of Supine ECG with reasoning.

3.4 Display of real time 12 lead diagnostic qualities ECG waveform, average complexes beat of all 12 leads with superimposed color comparison along with digital value of ST level and slope. Print the graph on the recording paper.

3.5 Automatic detection, display, Storage and review of arrhythmia, Heart Rate, Double Product and METS. It should have online HR METs and ST running trends available on the screen during exercise.

3.6 System should have ability to manual edit of J & Isoelectric point during exercise. Filters for line frequency and special filters to reduce noise and baseline artifacts without compromising the ECG frequency response.

3.7 System should have full disclosure play back, review and storage of patient ECG raw data for unlimited numbers depending upon size of the hard disk. The unit should have the ability to readjust —J-ST|| interval measurement + 1 m sec points and generate a new report from stored raw ECG data.

3.8 System should provide multiple and customizable printing formats as per user‘s choice on A-4 size high resolution thermal printer for online real time printings. Compatible laser printer for printing reports on plain paper also to be supplied.

3.9 System must have ECG trigger output to interface with external automatic devices. 3.10 Heavy Duty Treadmill : Noise free TREADMILL with speed ranging from 0.5 to 20 kmph and grade of 0 – 22% with suitable servo stabilizer.

4 System Configuration Accessories, spares and consumables 4.1 System as specified 4.2 All consumables required for installation and standardization of system to be given free of cost.

5 Environmental factors None

6 Power Supply

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

6.2 Suitable Servo controlled Stabilizer/CVT

7 Standards, Safety and Training 7.1

Should be FDA and CE approved product

8 Documentation

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

8.2 Certificate of calibration and inspection.

8.3 List of Equipments available for providing calibration and routine Preventive Maintenance Suppo per manufacturer documentation in service/technical manual.

Holter System 1.

Holter system provides for 24/48 hours and **7 days** of continuous ECG recording and analyzing for detecting heart rate Abnormalities which may otherwise go undetected.
2 **Operational requirement**

	Should be able to record 24/48 hours and 7 days of 3 lead ECG waveforms on small Holter Recorders
	Should automatically detect and quantify different ventricular and supraventricular events , including atrial events (atrial fibrillation , isolated prematures , pairs , bigeminy , trigeminy , runs, shorts pauses, long pauses, bradycardia and tachycardia) and ventricular events (isolated ectopics, premature ectopics, interpolated ectopics late ectopics, R on T, bigeminy, trigeminy, couplets, triplets, and runs).
3	**Technical Specifications**
	The system should be PC based with PC Specifications (HP/Compaq / Dell) (1 no: Desk top ; 1 No Lap top – 15ll screen size min.) as following: Computer Processor: i5 core. Memory: 2 GB RAM, Network read facility. Hard Disk: 500GB hard disk CD-ROM / WRITER: 52x-speed drive or faster. USB: Universal Serial Bus port.Min.4 ports Monitor: Color Super VGA 22ll flat monitor capable of displaying 1280 x 1024 resolution. Printer: HP LaserJet 2300 or higher. Slot: Minimum one free PCI expansion for card reading. Software: Vista Ultimate or higher. Should be supplied with a desktop (1 No) and a lap top (1No).
	Should provide continuous 12 Lead ECG capability that allows viewing and printing of a 12 Lead ECG from three channel ECG recording at any time during the 24\48 hour recording. The same recorder should have the capability of having 3 lead ECG for 7 days
	Should employ multiple analysis modes, including prospective, paging and superimposition, retrospective and a combination of retrospective and prospective modes that analyses normal ECG and isolated abnormals automatically but stops on complex arrhythmia; Holter software should have HRV analysis, HRV time domain analysis, HRV spectral analysis, and QT
Should analyse three leads of ST segments with ST episode reporting and Heart rate variability on time and frequency domain	
3.5	Should provide unlimited normal, abnormal, and artefact templates with automatic classification, template matching and ability to merge \ unmerge on any template.
3.6	Should automatically stop on and display arrhythmia patterns, patient diary entries and ST episodes.
3.7	Should provide a histogram to view all R to R intervals, all normal to normal intervals, all normal to ventricular intervals, all ventricular to normal intervals, and all ventricular to ventricular intervals.
3.8	Should provide QT and Pacemaker analysis
3.9	Should create custom reports templates
3.10	Trend Graphs –HR, RR interval, RR variance, 12-lead ST, SVPB, VPB

3.11	**(III) Recorder specifications :** 1. Should weigh no more than 120 grams with battery and flash memory installed. 2. Should acquire simultaneous three channel ECG with software to convert three channels to 12 lead ECGs in the scanning device. 3. Should come with pacemaker software that automatically removes pacing arte facts and annotates the recording with pacing pulses. 4. Should Store 24 or 48 hours of ECGS with no data compression. 5. Should use only one no AAA alkaline battery to provide up to 48 hours of three channel recording. 6. Should have a LCD display of the patient's ECG during hook up to verify proper electrode application. 7. Should use only 3 leads to record a three channel ECG. 8. Should be water resistant. 9. Should synchronize the recording start and end time with the recorder time clock 10. Should have voice recording to store patient ID 11. Recorder should be tamper proof – i.e., even if the battery or CF is removed accidentally, ECG should continue normally after the battery or CF is replaced. 12. Low battery alarm facility (audio/ visual)
4	
Higher configuration computer and printer	**System Configuration Accessories, consumables**
5	The system should contain all the above accessories in integrated or as separate accessories Environmental factors The unit shall be capable of operating continuously in ambient temperature of 10 -40° C and relative humidity of 15-90% The unit shall be capable of being stored continuously in ambient temperature of 0 -50° C and D.

B: TECHNICAL SPECIFICATIONS OF HOLTER SYSTEM

Sl. No.	Description of Function	M/S	
1.1	Holter system provides for 24/48 hours of continuous ECG recording and analysing for detecting heart rate abnormalities which may otherwise go undertected.		
Sl. No.	**Operational Requirements**		
2.1	Should be able to record 24/ 48 hours of ECG waveforms on small Holter Recorders		
2.2	Should automatically detect and quantity different ventricular and supraventricular events, including atrial events (atrial fibrillation, isolated premature, pairs, bigeminy trigeminy, runs, shorts pauses, long pauses, bradycardia and tachycardia) and ventricularevents (isolated ectopics, premature ectopics, interpolated		

	ectopics late ectopics, R on T, bigeminy, irigeminy, couplets, triplets, and runs).		

Sl. No.	Technical Specification		
3.1	The system should be PC based with PC Specifications (HP/Compaq/Dell) (1 no Desktop; 1 No. Laptop PC) as following:- • **Computer Processor**: Pentium IV; 733 MHz or higher. • **Memory**: 51 2 MB RAM or Higher. • **Hard Disk**: 80 GB or higher with at least 5 GB free space. • **Floppy Disk Drive**: 3.5" floppy drive. • **CD-ROM/WRITER**: 52x-speed drive or faster. • **USB**: Universal Serial Bus port. • **Monitor**: Color Super VGA 17" flat monitor capable of displaying 1280 x 1024 resolution. • **Printer**: HP Laser Jet 2300 or higher. • **Slot**: Minimum one free PCI expansion for card reading. • **Software**: Windows 2000 Operating System or Higher. Should be supplied with a desktop (1 No.) and a laptop computer (1 No.).		
3.2	Should provide continuous 12 Lead ECG capability that allows viewing and printing of a 12 Lead ECG from three channel ECG recording at any time during the 24/48 hours recording.		
3.3	Should employ multiple analysis modes, including prospective, paging and superimposition, retrospective and a combination of retrospective and prospective modes that analyses normal ECG and isolated abnormal automatically but stops on complex arrhythmia;		
3.4	Should analyse three leads of ST segments with ST episode reporting and Heart rate variability on time and frequency domain.		
3.5	Should provide unlimited normal, abnormal, and artifact template with automatic classification, template matching and ability to merge/ unmerge on any template.		
3.6	Should automatically detect and quantity different ventricular and supraventricular events, including atrial events (atrial fibrillation, isolated premature, pairs,		

	bigeminy, trigeminy, runs, shorts pauses, long pauses, bradycardia and tachycardia) and ventricular events (isolated ectopics, premature ectopics, interpolated ectopics late ectopics, R on T, bigeminy, trigeminy, couplets, triplets, and runs).		
3.7	Should automatically stop on and display arrhythmia patterns, patient diary entries, and ST episodes.		
3.8	Should provide a histogram to view all R to R intervals, all normal to normal intervals, all normal to ventricular intervals, all ventricular to normal intervals, and all ventricular to ventricular intervals.		
3.9	Should provide QT and Pacemaker analysis		
3.10	Should create custom reports templates with institution's logo		
3.11	Trend Graphs_HR, RR interval, RR variance, 12-lead ST, SVPB, VPB		
3.12	**(III) Recorder specifications:** ▪ Should weigh no more than 100 grams with battery and flash memory installed. ▪ Should acquire simultaneous three channel ECG with software to convert three channels to 12 lead ECG in the scanning device. ▪ Should come with pacemaker software that automatically removes pacing artifacts and annotates the recording with pacing pulses. ▪ Should Store 24 or 48 hours of ECGS with no data compression. ▪ Use AA alkaline battery to provide up to 48 hours of three channel recording. ▪ Should have a LCD display of the patients ECG during hook up to verify proper electrode application. ▪ Should use only 5/7 electrodes to record a three channel ECG. ▪ Should be water resistant should synchronize the recording start and end time with the recorder time clock.		

Sl. No.	**System Configuration Accessories, Spares and Consumables**		
4.1	PC with Pentium IV with specified configuration – 01 (original operating system software on CD)		
4.2	Printer (HP Laser Jet 2300 or higher/equivalent - 01		

4.3	Holter Analyser Software - 01		
4.4	Holter Recorders - 02		
4.5	Patient Cables -02		

The system should contain all the above accessories in Integrated or as separate accessories.

Sl. No.	**Environmental Factors**		
5.1	The unit shall be capable of operating continuously in ambient temperature of 10-40^{0}C and relative humidity of 15-19%		
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.		

Sl. No.	**Power Supply**		
6.1	Power input to be 220-240 VAC, 50Hz,/440 V 3 phase as appropriate fitted with Indian Plug.		
6.2	Resettable overcurrent breaker shall be fitter for protection		
6.3	UPS of suitable rating conforming to IS-3-2 shall be supplied for computer system		

Sl. No.	**Standards and Safety**		
7.1	Should be FDA or CE approved product		
7.2	Electrical safety conforms to stands for electrical safety IEC – 60601-1 General requirements and IEC -60601-2-25 safety of Electrocardiograms. (OR EQUIVALENT BIS Standard)		

Sl. No.	**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 calibration and Preventive maintenance equipments as specified in the Service/Technical Manual. Preventive maintenance has to be provide as per the manufacture guidelines.		

C;_ 2 D Color Doppler echocardiography-03

-State of the art, fully digital, 2D echocardiography color Doppler system for both adult and pediatric patients including all basic and specialized cardiac and vascular applications.

1. System should have following display modes, covering all basic and specialized cardiac and vascular applications.
    a. M-mode should also have angular / anatomical M-mode (any axis M-mode) facility, with up to 3 M-mode omnidirectional cursors. M-mode should also show quantitative segmental wall motion scanning facility.
    b. 2D with facility for real time contrast studies.
    c. Colour doppler, pulse wave Doppler, HPRF, fully steerable continuous wave Doppler.
    d. Should have tissue harmonic imaging capability with quantification.
    e. Contrast harmonic imaging with quantification facility should be present.
    f. Should have ECG gating with possibility of online as well as offline TDI and myocardial velocity with protocol templates for WM scoring and reporting with segmental wall motion analysis software for quantification of endocardial segmental motion.
    g. Color coded tissue doppler must be available with quantification for myocardial thickness, strain and strain rate imaging with facility for real time and off line calculation of velocity of myocardial segments. Should preferably be displayed after intracardiac cycle in one single image.
2. Transducers should have broadband harmonics and compound array probes. System to be offered with phased array cardiac probes for adult, pediatric and neonatal probes and a linear probe for peripheral vascular studies along with TEE probes for adult and pediatrics applications.
    a. All probes should be multi frequency.
    b. 1.5-5 MHz electronic phased array for adult cardiac study.
    c. 3.75-7.5 MHz electronic phased array for neonatal / pediatric applications.
3. Should have at least 19" high resolution LCD color display.
4. Should have Scanning depth of 30 cms or more.
5. Should have minimum 3 active ports.
6. Should have high frame rates of more than 500 FPS.
7. Comprehensive measurement and analysis packages and report pages for all routine and advanced cardiac application.
8. Cine loop memory of at least 10,000 frame / 200 sec.
9. 1000 patient data memory should be available.
10. System should have algorithms to improve 2D image quality including optimization for spatial and temporal resolution.
11. At least 60 GB onboard HDD for storage.

12. Should have integrated hard disk for image storage / recall with complete image management and post analysis on stored images.
13. Should have full Dicom support inbuilt, ready for connecting to remote server / laser camera.
14. Able to transfer images and clips to CD & DVD as AVI files.
15. Direct compatibility to attach inkjet / LaserJet printer along with a CD-RW must be available.
16. Should be quoted with B/W thermal printer with 100 rolls with facility for color print.
17. Image management system with latest computer-Pentium-IV dual core, 120GB, HDD, DVD writer, CDR W and colour laser. Appropriate on line UPS with 30 minutes backup
18. **It should be CE and FDA approved.**

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