INDIRA GANDHI INSTITUTE OF MEDICAL SCIENCES, SHEIKHPURA, PATNA-14.

Tel.: 0612 – 2297631, 2297099, Fax: 0612 – 2297225, Website:
www.igims.org

Notice Inviting Tender

***E-tendering mode only on website-* www.eproc.bihar.gov.in)**

E-Tender Notice No. 04/2020-2021/Bio Medical Equipt /IGIMS/Store

01	Name & address of advertiser:	:	Director, IGIMS, Sheikhpura, Patna -14 P.O.-B.V. College, Patna 800014
02	Date of issue of E-Tender notice.	:	15/ 05/2020
03	Period for download of tender document	:	From 18/05/2020 to 30/06/2020 up to 12.00 hours through above website
04	Date, Time & Place of pre bid meeting:	:	15/06/2020 at 03.00 Noon at IGIMS (2nd Floor, New administrative building), Patna.
05	Last date & Time for uploading tender:	:	30/ 06/2020 up to 17.00 Hours
06	Last date, time and place for submission of Technical bid by Speed/Registered post/ Courier only	:	01/07/2020 up to 16.00 Hours, at Director IGIMS,- Patna-800014, P/O-. B. V. College Patna
07	Date, Time and Place of opening of Techno Commercial bid	:	02/07/2020 at 14.00 hours on **www.eproc.bihar.gov.in**
08	Date, Time and Place of opening of price bid	:	Date & Time will be communicated later Subsequent to approval of techno commercial bid Place: www.eproc.bihar.gov.in

Sl. No	*Group*	*Name of Equipment*	*Cost of Tender Document*	*Earnest money to be Deposited.*	*Bid processing fees to be paid on-line (non-refundable in Rs.)*	*Completion period*
01.	**A: RIO**	**1: OCT ANGIO (NON INTERVENTIONAL)**	**Rs. 2500.00**	**Rs.2,00,000.00**	**Rs.1180.00**	**8-12 Week**
		2: PHOROPTER WITH AUTOREF WITH HIGH END SLIT LAMP		**Rs.1,00,000.00**		
		3: 810 NM DIODE LASER FOR TREATMENT OF GLAUCOMA		**Rs.50,000.00**		
		4: APPLANATION TONOMETER		**Rs.10,000.00**		
		5: RETCAM WITH LIO		**Rs. 75,000.00**		
		6: Advance Combined		**Rs. 75,000.00**		

		Phacoemulsification System				
		7: SPECULAR MICROSCOPE		**Rs.20,000.00**		
		8: COLLAGEN CROSS LINKAGE		**Rs.20,000.00**		
		9: LASIK LASER WITH CORNEAL TOPOGRAPHY WITH MICROKERATOME (1EACH)		**Rs.5,00,000.00**		
		10: Microscope for posterior segment surgery		**Rs.2,00,000.00**		
		11: Specifications for Vitrectomy Machine		**Rs.2,00,000.00**		
02.	**B: Orthopaedics**	**1: ARTHROSCOPY SYSTEM**	**Rs. 2500.00**	**Rs.2,00,000.00**	**Rs.1180.00**	**8-12 Week**
		2: Navigation system for TKR & THR		**Rs.1,00,000.00**		
		3: Tissue Bank		**Rs.71,000.00**		
03.	**C: Urology**	**1(a): Adult Cystoscope & Resectoscope, Cystolitholithotripsy and urethrotome**	**Rs. 2500.00**	**Rs.50,000.00**	**Rs.1180.00**	**8-12 Week**
		(b): Slender TURP set		**Rs.20,000.00**		
		2: Paediatriccystoscope / Resectoscope		**Rs.20,000.00**		
		3(a) :Semi Rigid Ureterorenoscope		**Rs.10,000.00**		
		(b): Standard Nephroscope		**Rs.10,000.00**		
		(c) :Mini Nephroscope		**Rs.10,000.00**		
		4(a) : Flexible URS		**Rs.15,000.00**		
		(b) : Flexible Video URS		**Rs.15,000.00**		
		5(a) :Specification for Flexible Cysto-Nephro-Fibroscope		**Rs.20,000.00**		
		(b) : Flexible Video Cysto-Nephroscope:		**Rs.50,000.00**		
		6(a) :Holmium Laser 40 Watt		**Rs.75,000.00**		
		(b): SPECS OF 100 WATT LASER		**Rs.2,00,000.00**		
		(c): HOLMIUM LASERS 120 WATTS		**Rs.4,00,000.00**		
		7(a): 4K ENDOVISION SET		**Rs.2,00,000.00**		
		(b): 4 K with 3D Endovision System		**Rs.4,00,000.00**		
		8: Urodynamics		**Rs.2,00,000.00**		
		9(a): Ballistic Lithoclast		**Rs.20,000.00**		
		(b): Ultrasonic and Ballistic Lithoclast.		**Rs.50,000.00**		
		10: Ultrasonic Cutting & Coagulation and Integrated Advance Bipolar for 7mm Vessel Sealing		**Rs.75,000.00**		
		11: Electro Hydraulic Operation Table		**Rs.75,000.00**		
04.	**D: Haematology**	**1: FLOW CYTOMETER**	**Rs. 2500.00**	**Rs.50,000.00**	**Rs.1180.00**	**8-12 Week**
		2: HPLC		**Rs.1,00,000.00**		
		3: Fully automated Capillary Electrophoresis system		**Rs.25,000.00**		
		4: DECA-HEAD MICROSCOPE		**Rs.25,000.00**		
		5: Aggregometry		**Rs.10,000.00**		
		6: Real Time PCR Specification		**Rs.20,000.00**		
05.	**E: Physiology**	**1: 4 channels digital EMG, NCV, EP system**	**Rs. 2500.00**	**Rs.30,000.00**	**Rs.1180.00**	**8-12 Week**
		2:Video EEG with Polysomnographic System		**Rs.50,000.00**		
		3: Autonomic Function Lab		**Rs.1,00,000.00**		
		4: Advanced PFT LAB		**Rs.25,000.00**		

09. For participation in the above e- tender process the bidders are required to get themselves Registered as per details given at www.eproc.bihar.gov.in so that the user ID, Password and Digital signatures are issued to them and may please contacted on 7542028164, 0612-2523006 for any query.

10. Detailed NIT can be seen on website **www.eproc.bihar.gov.in** and on **www.igims.org.**

The undersigned reserves the right to accept / reject any or all tenders without assigning any reason.

Director
IGIMS, Patna

Ref: dated: /05/2020
Copy forwarded to: Administrative Officer for advertisement in National News papers/ Suptt. Engg. (B M E) for uploaded at the Institute Website/F& Chief accounts Officer for information& Necessary action.

Director
IGIMS, Patna

Bidding document for-

Group A : Supply, Installation & Commissioning of Biomedical Equipt. for RIO
Group B : Supply, Installation & Commissioning of Biomedical Equipt. for Orthopaedics
Group C : Supply, Installation & Commissioning of Biomedical Equipt. for Urology
Group D : Supply, Installation & Commissioning of Biomedical Equipt. for Haematology
Group E : Supply, Installation & Commissioning of Biomedical Equipt. for Physiology

BIDDING DOCUMENT

E-TENDER NOTICE No: 04/2020- 2021/Bio-Medical Equipment/IGIMS/Store

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

E-TENDER NOTICE No: 04/2020- 2021/Bio-medical Equipment/IGIMS/Store

Issued to:

Cost of Document: Rs.2500/-

Paid By: Cash: Receipt No.:

Demand Draft: No.:

Issuing Bank:

(Authorized Signatory)

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
Date, Time & Place of pre bid meeting	15/06/2020 at 03.00 Noon at IGIMS (2nd Floor, New administrative building), Patna.
Last date for submission of completed bidding document	01/07/2020 up to 4.00 PM. by registered/speed post/ Courier only
Date of opening of technical bid	02/07/2020 at 14.00 P.M. in Conference Hall IGIMS, Patna.
Date of demonstration of equipment	To be informed to the qualified bidders qualifying after opening of technical bids.

INDIRA GANDHI INSTITUTE OF MEDICAL SCIENCES,

SHEIKHPURA, PATNA -800014 (Bihar, India)

Sr. No. of Tender: _____

FILE NO. : Tender No.: _____

Tender form issued in favour of: _____

_____

Dear Sir,

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

_____

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

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

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

Yours faithfully,

(Signature of Bidder with full name and address)

CHECK LIST FOR TERMS AND CONDITIONS

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

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

	tender.		
15.	**Quality Assurance Certificate** like ISI, ISO-9002, IP/BP, 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/ 5 years as mentioned against each item including all spares, accessories, consumables etc., (Please mention the name of the item / items with price, which are not supplied by the bidder free of cost with frequency of replacement)		
19.	Certificate, to the effect that bidder has quoted its rate for Comprehensive Annual Maintenance Contract inclusive of labour, spares, consumables, accessories etc. on per year basis for a further period of five/seven years after expiry of warranty period of three years in the **price bid**. (Please mention the name of the item / items with price, which are not supplied by the bidder free of cost with frequency of replacement during Comprehensive Annual Maintenance Contract period in the price bid)		
20.	Acceptance of all terms / conditions towards **after sales / services** as mentioned in the bidding document.(Clause No- 13 of " Instruction to Bidder " & clause no- 3, 4 and 5 of Condition of contract.)		
21.	**Compliance Statement** with relation to the technical specification as mentioned in the bidding document duly supported by the original catalogue. The bidder must quote specification in the compliance column Mere writing" Complied shall not be accepted.		
22.	**Compliance Statement** with relation to the terms & conditions as mentioned in the document.		
23.	**PAN and copies of Income Tax Returns** for the last three years.		
24.	Duly attested copy of GST registration certificate.		

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

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

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

(Name of the Bidder with signature & seal)

ELIGIBILITY CRITERIA

01	Manufacturers or their authorized dealers/Indian subsidiaries/direct importers having a place of business in any of the States of India are eligible to participate in this tender.	Mentioned Page no.
02	The bidder and manufacturer of the equipment offered should be in the business of the supply and installation of same / similar equipment for the last five calendar years.	
	(a)The manufacturer should have completed at least 05(Five) nos. installations of the quoted items in Govt. /Pvt. Institutions /Hospitals in India. The installations mentioned by the manufacturer in their offer must be functional and performance certificate for the same issued by the user concerned also be attached with the offer. (b) The bids quoted as the authorized representative of the manufacturer meeting the above criteria 02 (a) should have also supplied and installed at least 03(Three) nos. installations of the quoted items in Govt. /Pvt. Institutions/ Hospitals in India in last five years from the last date of submission of tender. The installations mentioned by the authorized representative in their offer must be functional and performance certificate for the same issued by the user concerned also be attached with the offer.	
03	The Bidder should be public undertaking /Autonomous Body /Public Ltd./Pvt. Ltd. Company or proprietary firm /Partnership Firm and should be in medical equipment business since last five years in India. The Bidders having manufacturing facility in their name in India for the majority of the items offered by them shall be given preference.	
04	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 2018.	
05	Bidders who have the capability to attend repairs of these equipment within the time mentioned in this bidding document and who are willing to provide stand by equipment or replace the faulty equipment if the repair/down time extends beyond 72 hours from the time of reporting of the fault within the next 48 hours (total down time should not exceed 5 days in one instance). The bidders who have the capability to ensure the uptime mentioned in this document (Documentary proof shall be submitted on the after sales facilities and expertise of the bidder.)	
06	Bidders are not offering the equipment of a firm /company that has been blacklisted by Indira Gandhi Institute of Medical Sciences – Patna or blacklisted/debarred by any other State / Central Government's organization.	

Note:

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

INSTRUCTION TO BIDDER

GENERAL INSTRUCTIONS T0 BIDDERS

1. **Tendering System**

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

PART - I titled as TECHNICAL BID shall contain the complete technical specifications and details on the 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 Two year from date of 1st satisfactory installation and acceptance of the equipment. Repeat Supply Order will be placed as per requirement of the Institute of all the quoted and approved items. The rate contract may be further extended for period of one year as decided by Director, IGIMS-Patna.

4. The "Bidding Document" along with terms and conditions, technical specification can be obtained from the office of the Store Officer, IGIMS, Patna on payment of Rs.2500/-(Rs. Twenty five hundred only) Non – refundable for each Group by demand draft favouring Director , IGIMS, Patna payable at Patna.

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

6. Last date for submission of bidding document is 01/07/2020 up to 4.00PM by speed/Regd. post/ Courier only and technical bid will be opened on 02/07/2020 at 14.00 PM in Conference hall IGIMS, Patna

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

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

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

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

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

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

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

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

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

OR

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

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

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

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

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

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

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

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

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

f. <u>Bidder must submit a compliance checklist along with the technical bid itself.</u>

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

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

Installation & site plan:-

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

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

11. After Sales Service Conditions:

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

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

c. Guarantee/Warranty Terms:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

xvii;- The offered warranty includes:

- Visits to the user institutions at frequencies prescribed as part of preventive maintenance.

- Testing & calibration as per technical/service/operation manual of the manufacturer or as per the period specified or as per the demand of the user.
- Quality Assurance tests (if applicable).

- The cost of labour for all repairs/ and all spares required for replacement during repairs all kinds of accessories, Probes, all types of sensors and transducers, Electrodes, Detectors, battery, battery for UPS, other vaccumatic parts etc wherever applicable and also the accessories and other devices supplied along with the equipments like stabilizer, UPS, AC, Computer, Compressor, Monitor, etc, which forms part of the equipment system, without which it cannot perform satisfactorily.

- The exclusion of warranty of any vital equipment parts will be compared with offers of other Bidders during evaluation of the bids and this may be taken into consideration in deciding the successful Bidder on the basis of expert advice.

- The Bidder shall provide up-time warranty of complete equipment as mentioned in this document, the uptime being calculated on 24 (hrs) X 7 (days) basis failing Warranty period will be extended for every additional day of down time equal to one week.

- All software updates, if any required, should be provided free of cost during Warranty period.

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

- The decision to enter into CMC or AMC will be determined on the basis of cost and complexity of the equipment by the Tender Inviting Authority, at its discretion, prior to the expiration of warranty period.

- The Comprehensive Maintenance Contract (CMC) is otherwise an extended warranty. All the terms and conditions agreed by the successful Bidder for executing the comprehensive warranty of the equipment shall be extended during the period of CMC, only difference being the payment of CMC charges is absent during the period of comprehensive warranty.

- The cost of CMC, accessories spares, and consumables as in case may be quoted along with taxes applicable, if any. The taxes to be paid extra, to be specifically indicated. In the absence of any such stipulation the price will be taken inclusive of such taxes and no claim for the same will be entertained later.

- Failure/refusal on the part of the successful tender supplying/installing the equipment's to enter into CMC with the Tender Inviting Authority, at the end of the Comprehensive Warranty Period, if the Institute, as the case may be, desires so, shall lead to forfeiture of performance security and may also result in the blacklisting/debarring of the Bidder.

- The successful Bidder shall also indicate the rates for the CMC in price bid form and such rates are binding on the successful tenders after the expiration of the warranty period. The yearly rates for CMC shall remain the one and the same as quoted in the price bid form for the extended years.

- Cost of CMC (excluding taxes, if any) will be considered for Ranking/Evaluation purpose.

- The payment of the agreed CMC charges will be made as per frequency for payment after satisfactory completion of said period, on receipt of service report/ break down report from the user.
- The Bidder shall also have to submit whether periodic replacement of consumable items are required for proper functioning of their quoted machine/Equipment? If yes they should submit the list of such consumables along with price list and frequency of replacement per year if the same is not included in quoted Comprehensive Annual Maintenance Contract charges per year.

12. Time Limits prescribed

Sl. No	Activity	Time Limit
a.	Installation & Delivery period	12 weeks from date of issuance of Supply Order
b.	Comprehensive warranty period	3 /5 years from the date of successful installation.
c.	CMC period	5/7 years
d.	Frequency of visits to all User Institution concerned during Warranty/CMC	One visit every three months (4 visits in a year) for periodic/preventive maintenance and any time for attending repairs/break down calls.
e.	Frequency of payment of CMC charges	Every six months after completion of the Period.
f.	Submission of Performance Security and entering into contract	10 days from the date of issuance of Letter of Intent
g.	Maximum time to attend any Repair call	Within 24 hours.
h.	Uptime in a year during warranty as well as during CAMC period.	95% of 365 days.

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

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

15. Supplier will submit undertaking for ensuring uninterrupted supply of spares during the total life span of the equipment's.
16. Indian agency commission and Installation charge if any will be paid in Indian rupees after successful installation and demonstration of the equipment's.
17. Principal's Invoice of the quoted items must be submitted with the quotations.
18. Proof of the official Indian agent certificate of the firm must be attached. (Notary Certified Photocopy)
19. In order to fully and optimally utilize the equipment, training to Para Medical Staffs and Doctors should be provided. In continuation to this training, 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).
20. Bidder(s) have to submit an affidavit to the effect that they have not supplied the offered item(s) to any Govt., semi Govt. /Organization, Institution, etc. at the price lower than the price offered to I.G.I.M.S. – Patna.
21. All the claims regarding meeting the specifications shall be duly supported by appropriate, latest technical catalogues/brochures from the manufacturer. Simply stating that the equipment(s) meets the specifications is not sufficient and any such quotations will be summarily rejected. Computer printed documents or Photostat copy or laser printouts will not be accepted as technical catalogues / brochures.
22. Bidder might be required to demonstrate the system at the discretion of the institute.

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

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

b. The successful bidder, upon receipt of the LOI, shall furnish the required performance security and

submit an agreement in the prescribed format within ten days, failing which the EMD will forfeited and the award will be cancelled.

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

24. **Signing of Contract**

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

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

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

27. **Amendment of tender documents**:

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

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

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

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

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

CONDITIONS OF THE CONTRACT

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

Clearance charges at point of Entry / Air Port and on ward transportation charges with Insurance up to I.G.I.M.S. - Patna will be borne by supplier's Indian Agent for which this Institute will not pay the charges. The firm should quote as FOR IGIMS Patna including all expenditure in **Indian Rupees only**.

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

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

03. **Warranty Period**:

a. The "**Complete System**" shall remain under warranty period of **three/ five years** from the date of satisfactory installation. The Complete System should include the basic unit and allied supporting components like UPS etc. to be supplied by the bidder along with basic unit if necessary for running the system.

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

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

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

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

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

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

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

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

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

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

b. The Complete System should include the basic unit and allied supporting components like UPS, Stabilizer, etc to be supplied by the bidder along with basic unit if necessary for running the system.

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

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

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

1 Year = 365days

95% of 365 days = 347 Days per annum

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

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

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

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

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

05. **<u>Performance Security</u>**

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

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

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

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

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

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

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

06. Delivery period/Liquidated Damage: -

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

i. 1st extension for a month or a part thereof @ 2% per month .
ii. 2nd extension for an additional month or a part thereof @ 3% per month subject to maximum Limit of 20% of the order items.
iii. Cancellation.- If delivery is not done even after 2nd extension Institute shall have the right of cancellation of Supply order at its discretion. The institute may also cancel the supply order without giving any extension.

07. Payment: -

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

08. **Validity of Price:-**

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

09. **Part Supply**:

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

10. **Packing & Marking:-**

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

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

12. Insurance: -

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

13. <u>Installation & site plan</u>:

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

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

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

15. <u>Responsibility:-</u>

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

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

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

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

19. **Penalties for non-performance**

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

a. imposition of liquidated damages,
b. forfeiture of EMD/ Security money deposit,
c. termination of the contract,
d. Blacklisting/debarring of the bidder.

20. **Termination of Contract**

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

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

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

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

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

21. **Fall Clause**:

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

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

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

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

Director,
IGIMS - Patna.

CHAPTER:

SCHEDULE OF THE REQUIREMENT

Group -A- RIO
1:OCT ANGIO (NON INTERVENTIONAL)
2:PHOROPTER WITH AUTOREF WITH HIGH END SLIT LAMP
3:810 NM DIODE LASER FOR TREATMENT OF GLAUCOMA
4:APPLANATION TONOMETER
5:RETCAM WITH LIO
6: Advance Combined Phacoemulsification System
7: SPECULAR MICROSCOPE
8: COLLAGEN CROSS LINKAGE
9: LASIK LASER WITH CORNEAL TOPOGRAPHY WITH MICROKERATOME (1EACH)
10: Microscope for posterior segment surgery
11: Specifications for Vitrectomy Machine
Group –B- Orthopedics
1:ARTHROSCOPY SYSTEM
2:Navigation system for TKR & THR
3: Tissue Bank
Group –C- Urology
1(a):Adult Cystoscope & Resectoscope, Cystolitholithotripsy and urethrotome (b): Slender TURP set
2: Paediatriccystoscope / Resectoscope
3(a) :Semi Rigid Ureterorenoscope (b): Standard Nephroscope (c) :Mini Nephroscope
4(a) : Flexible URS (b) : Flexible Video URS
5(a) :Specification for Flexible Cysto-Nephro-Fibroscope (b) : Flexible Video Cysto-Nephroscope:
6(a) :Holmium Laser 40 Watt (b): SPECS OF 100 WATT LASER (c):TECHNICAL SPECIFICATION OF HOLMIUM LASERS 120 WATTS
7(a): SPECIFICATION OF 4K ENDOVISION SET (b): 4 K with 3D Endovision System
8: Urodynamics
9(a): Ballistic Lithoclast (b): Ultrasonic and Ballistic Lithoclast.
10: Ultrasonic Cutting & Coagulation and Integrated Advance Bipolar for 7mm Vessel Sealing
11: Electro Hydraulic Operation Table
Group –D- Hematology
1: FLOW CYTOMETER
2: HPLC
3: Fully automated Capillary Electrophoresis system
4: DECA-HEAD MICROSCOPE
5: Aggregometry
6: Real Time PCR Specification
Group –E- Physiology
1:4 channels digital EMG, NCV, EP system
2:Video EEG with Polysomnographic System
3: Autonomic Function Lab
4: Advanced PFT LAB

ANNEXURES

Annexure - I

PRICE SCHEDULED

LOCATED WITHIN INDIA.

1	2	3	4	5							6
				Price per unit (Rs.)							
Scheduled	Brief description of goods Make: Model:	Country of origin	Qty. nos.	Ex-factory/ex-warehouse /ex-showroom/ off-the shelf (a)	Excise duty(if any) % and value. (b)	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 - 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 equipment's tendered within the stipulated time.

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

Date: (Name of manufacturers)

Place:

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

ANNEXURE – IV
BANK GUARANTEE FORM

To

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

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

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

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

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

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

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

ANNEXURE - V

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 : _____

Specification & Allied Technical Details

Group-A: R.I.O.

1: OCT ANGIO (NON INTERVENTIONAL) (1)

Specification:

1. Should be spectral domain or swept source optical coherence tomography with dye free OCT angiogram facility.
2. Should have High definition OCT scans provide precise detail of retinal tissue and pathology.
3. Should have multiple analyses with a single scan.
4. Scan patterns for retina should be 512 A Scan x 128 B Scan, 200 A scan x200 B Scan or better
5. Scan Pattern for optic disc should be 200 A scan x 200 B Scan or better
6. Scans for dye free angiography should be 3 x 3 mm , 6 x 6 mm and 9 x 9 mm Scan or better
7. High Definition scans: Length- 3/6/9 mm, 360 degree rotatable, minimum spacing between the lines 0.025 mm.
    a. 5 line high definition scan
    b. High definition cross hair scan
    c. High definition 1 line scans with 100 frames averaging.
    d. High definition radial scan
8. Scan pattern for anterior segment should be
    a. High definition cornea scan
    b. Pachymetry map
    c. Anterior chamber view scan
9. Retina analysis should have
    a. Macular thickness analysis OS/OD/OU
    b. Macular change analysis
    c. Detailed analysis for RPE Layer
    d. 3D
    e. Single eye summary with macular thickness and RNFL details for optic disc
    f. Montaging of macular scan and optic scan along with ganglion cell analysis
10. Optic disc analysis should have RNFL OU analysis, progression analysis, 3D analysis.
11. Anterior segment analysis should have High definition cornea analysis, anterior chamber measurement, angle measurements and goniometry measurements.
12. Dye free angiography analysis should have preset MAPS for superficial, Deep and avascular maps and Their combination to generate Retina death encoded map with layer displayed in different colours.
Also there should be provision to interpret the scans according to users preference of desired microns level , Should have angiography change analysis compared to prior visits, measurement for vessel density and fovea avascular zones should be available.
13. Should have retina registration and tracking to avoid motion artefacts and re scanning.
14. Should have motorized chin rest and alignment of patient image registration for precise rescanning during revisit.
15. Types of scans :
    a. Macular scan
    b. Optic disc Scan
    c. High definition scan
16. Scan speed should be 90000/second or more
17. Should have normative database for macular thickness and RNFL, Multi ethnicity
18. Should have 512 A Scans x 128 B Scans and 200 A scans x 200 B Scans or better.
19. Axial resolution should have 5µm (in tissue) or better.
20. A scan depth should have 2.0 mm (in tissue) 1000 data points or better.
21. Transverse resolution 25µm (in tissue) 1000 data points or better.

22. Should have 36 degree x 30 degrees or more field of view.
23. Focus adjustment range should be -20D to + 20D or more.
24. Should have internal and external fixation.

25. Minimum pupil size requirement is 3mm or better
26. Should have integrated colour flat panel display of 19 inch or better
27. Internal storage
28. Motorized table and printer should be supplied with equipment
29. Lenses for anterior segment which can be easily fitted to the main objective lens. (if applicable)

30. Should supply online UPS of sufficient capacity with 30 minutes backup to connect all the equipments supplied
31. **CE/FDA Approved**

2: PHOROPTER WITH AUTOREF WITH HIGH END SLIT LAMP (3)

Specification:

(2A): Phoropter:

SPEHERICAL POWER	Measurement Range Measurement Unit	-28.75 D TO +27.25 D 0.12D, 0.25D, 0.50D, 1.00D
CYLENDRICAL POWER	Measurement Range Measurement Unit	0D TO ±6.00D 0.25D ,1.00D
AXIS	Measurement Range Measurement Unit	0˚TO 180˚ 1˚, 5˚
INTERPUPILLARY DISTANCE	Measurement Range Measurement Unit	48.0 MM TO 80.0 MM 0.5MM TO 1MM
PRISM DEGREE	Measurement Range Measurement Unit	0Δ TO 20Δ 0.1Δ, 0.5Δ, 1Δ
PRISM ANGLE	Measurement Range Measurement Unit	0˚TO 360˚ 1˚, 5˚
VERTEX DISTANCE	12, 13.75, 16,018MM	
CROSS CYLINDER	AUTO CROSS CYLINDER(±0.25D)±0.25D CROSS CYLINDER, ±0.50D CROSS CYLINDER	
AUXILIARY LENS	P.D OCCLUDER, FORAMINOUS BOARD (Φ 1 MM), POLARIZATION FILTER (45˚/ 135˚)RED MADDOX (RIGHT EYE: HORIZON,LEFT EYE : VERTICAL), R/G FILTER (RIGHT EYE :RED FILTER, LEFT EYE : GREEN FILTER) DISPERSING PRISM (RIGHT EYE : 6ΔBU, LEFT EYE : 10ΔBI)	
PRINTER	THERMAL LINE PRINTER WITH AN AUTOMATIC CUTTER	
MONITER	10 inch LED MONITOR	
RATED SUPPLY	AC100 TO 240V,50/60HZ	
POWER CONSUMPTION	90VA	

(2B): Autoref-keratometer:

Refractive measurement range:

SPHERE	Measurement range	-30D~+22D (VD=12) -22D~+30D (VD=0)
	Unit	0.12D, 0.25D (Switching)
CYLINDER	Measurement range	0D~+10D (VD=0)
	Unit	0.12D, 0.25D (Switching)
	Mode	+, -, ± (Switching)
AXIS	Measurement range	0º~180º
	Unit	1º
Vertex distance		0, 10, 12, 13.5, 15 mm
Minimum pupil diameter measurable		Ø2.0 mm

Corneal curvature radius measurement:

CORNEAL CURVATURE RADIUS	Measurement range	5 .0mm~10.0mm
	Unit	0.01 mm
CORNEAL REFRACTIVITY	Measurement range	33.75D~67.5D (where corneal refractive index n=1.3375))
	Unit	0.12D, 0.25D (Switching)
DEGREE OF CORNEAL ASTIGMATISM	Measurement range	0D~±10.0D
	Unit	0.12D, 0.25D (Switching)
	Mode	mm, -D, +D (Switching)
AXIS ANGLE	Measurement range	0º~180º
	Unit	1º
Minimum pupil diameter measurable		Ø2.0 mm

PD measurement:

MEASUREMENT RANGE	85 mm (Near PD output)
UNIT	1 mm

Pupil diameter measurement:

MEASUREMENT RANGE	Ø2.0 mm~Ø8.5 mm
UNIT	0.1 mm

Electrical specifications:

- Built-in monitor body: LCD monitor
- Printer: Thermal line printer
- Power voltage/ frequency: AC 240V, 50/60 Hz

(2C): FIVE STEP SLIT LAMP:

Illumination type: Haag streit type tower illumination
Binoculars type: Galilean converging binoculars 8°
Eyepiece: 12.5 X Adjustment +/-8D
Magnification selection: 5 steps by drum rotation
Magnification Ratio: Field of view 6x, 34mm (5 steps only)
6x: 34mm (5 steps only)
10x: 22mm
16x: 14mm
25x : 8.5mm
40x: 5.5mm (5 steps only)
Interpupillary distance (PD range): 49-77mm
Slit Width: 0-12mm continuously variable
Slit length: 12mm (1.8-12mm, continuously variable)
Aperture Diameter: 0.2, 2, 3, 5, 9 & 12mm circle (1-12mm,
1mm square
Filters: blue, red-free, yellow, clear, neutral density, diffuser IR heat absorbing permanently installed
Slit vertical Tilt: 0°, 5°, 10°, 15° & 20°
Base travel: 107mm X-axis, 110mm Y-axis, 25mm Z-axis
Horizontal fine adjustment: 12mm
Table top dimensions: 405 x 500mm
Fixation lamp: Red LED
Illumination lamp: LED
Applanation tonometer
Ophthalmic chair unit with integrated refraction box with surgeons stool
CE/US FDA APPRROVED

3: 810 NM DIODE LASER FOR TREATMENT OF GLAUCOMA (1)

1. Wavelength 810 nm infrared
2. Cooling Air cooled
3. Exposure Duration CW-Pulse™: 10-9000 ms in 549 increments and continuous pulse up to 60 seconds
4. Exposure Interval CW-Pulse: 10-3000 ms in 542 increments and One Pulse
5. MicroPulse® Duration MicroPulse: 0.05-1.0 ms in 19 increments
6. MicroPulse Interval MicroPulse: 1.0-10.0 ms in 90 increments MicroPulse Duty Cycle Continuously adjustable from 0.5%-50%, and preset selections of 5%, 10%, and 15% duty cycles
7. Aiming Beam Diode laser, 635 nm nominal
8. Treatment Power 50-3000 mW, depending on delivery device
9. Display Color LCD Touch Screen Interface with Capabilities of treating Glaucoma using Micropulse Probe & Transscleral Cyclo Photo Coagulation Probe (G Probe)
10. Weight 3.9 kg (8.5 lb.)

FDA/CE approval

4: APPLANATION TONOMETER (6)

Specifications:

Measurement force	By leverage weight
R-Type	for tower illumination Slit Lamps
Measurement range	0 – 80 mmHg (0 – 10.64 kPa)
Approximation of the impact force on the measurement head for a 0 to 58,84 mN measurement range	Standard divergence: 0.49 mN ≤ 3s ≤ 1.5% of nominal value
Operating temperature range	from 10ºC to 35ºC
Measurement accuracy	≤ 0.49 mN
Net weights Type	0.69 kg (without accessories)

FDA/CE approval

5: RETCAM WITH LIO (1)

5A: RETCAM

Description of Function: Used for immediate assessment of retina and anterior chamber.
Product Quality Standard:

- Should be CE/USFDA/BIS approved model.

Technical Specifications:

- Should be supplied with interchangeable lens of 300, 1200, 1300, 800 and portrait lens.
- Should allow recording of the visual.
- Should be able to mark, locate and capture desire area of the image.
- Still photos should be able to capture during video recording.
- Computer system should be of latest processor, 500GB hard disk, 4GB RAM,
- 19inch monitor and recording in CD/DVD facility.
- Should have foot control, Fluorescent Angiography light box and dye.

5B: GREEN LASER (LIO)

LASER TYPE: Diode pumped, frequency doubled, true cw & solid state. (Medical Grade), 532nm.
THERAPY LASER POWER: Between1.3-1.5 W at the cornea
PULSE DURATION: 10-2500 ms (CW) (Single Pulse)
20-50ms (Multiple pulse option)
COOLING: thermoelectric/ air cooled
Pilot/ Aiming Laser: 635-650 nm Red diode laser (for Multi Spot The Aiming Beam Delivery
LIO: Continuously adjustable laser spot diameter from 50-1000 microns or Size : 50μm, 100μm, 200μ, 300μ, 500μ
It should be Light weight and portable.
ACCESSORY

- High quality Laser treatment contact lenses (standard focal/Grid, PRP 165)
- Micro Manipulator for slit Lamp
- High quality 20 Dioptre Lens for LIO - 2
- Laser Link FIBRE OPTIC Cable- 2 (for SL one & LIO one)

- Foot switch
- Elbow rest
- Laser safety eye glasses-3

6: Advance Combined Phacoemulsification System(1)

Console: The System should have Integrated Trolley System with Wheel for Movement with Foot Switch Pocket / Hanger. System must have Arm with Instrument Tray.

Pump System: Peristaltic/venture/dual.

Foot Pedal : Dual Liner / Linear Control foot switch.

Phaco System :

- Must be based on latest cutter technology to allow high cut rate
- Handpiece should be 4 to 6-Crystal , light weight
- Frequency of ultrasound Handpiece: 25 KHz to 40 KHz.
- Machine should have all platform - 2.8mm/2.2mm/ sub 2mm phaco
- Pulse mode, Burst Mode, Cold Phaco mode, Occlusion Mode should be there.
- Facility for adjusting duration between pulses : Burst mode with variable burst length from 10-500 ms
- Should Have Easy Phaco / Torsional /ellipsoid /similar updated Technology. Capabilities will be verify in the time of Demonstration.
- System Should have Pneumatically driven Duty cycle Based Conventional Cutter / Continuous flow or Bi Blade cutter. Cut rate should be min 3000 cuts/min (For anterior vitrectomy)
- Remote Control should be available.
- IV pole adjustment from Pedal & can be programmable.
- I/A Cassette should be reusable / Disposable.

I/A System :

- Non-contaminating fluidics system
- Reusable / Disposable IA Cassette.
- Vacuum : 0-600 mmHg, Aspiration Flow rate : 1 – 50 ml/min

Optional :

Acessories

- Phaco Hand Piece – 2
- Tubing (Autoclavable) / Cassettes (Disposable) - 30
- Phaco tip 2.8 mm - 4
- Phaco tip 2.2 mm - 4
- Wrench - - 2
- Sleeves 2.8mm- - 12
- Sleevs 2..2 mm- - 12
- I/A Bimanual-- 4
- Test chamber - - 4

European CE/FDA Approved

7: SPECULAR MICROSCOPE (1)

CORNEAL ENDOTHELLIUM PHOTOGRAPHY
PHOTOGRAPHY MAGNIFICATION: 200 X & above
PHOTOGRAPHY RANGE: 0.25 X 0.55 mm
RESOLVING POWER: MORE THAN 125 LINE/ mm
FIXATION TARGET: CENTRAL & PERIPHERAL
CORNEAL THICKENSS MEASUREMENT
MEASUREMENT RANGE: 0.400 - 0.750 mm
DISPLAY UNIT: 0.001 mm STEP DISPLAY
OTHER SPECIFICATIONS:
DIMENSIONS: 286 - 468 mm (W) X 445 - 592 mm (D) X 486 - 681 mm (H)
WEIGHT: Below 25kg
POWER SUPPLY: SOURCE OF VOLTAGE 100 - 240 V AC, 50 - 60 Hz
POWER SUPPLY: POWER OF INPUT 70 - 120 VA
OTHER FEATURES:

- **Should provide with substantial sixe increase of image.**
- **Should have** Instant image acquisition of the analysis result
- **Should have easy to read screen information & analysis software**
- **Colour diagram for showing various pathology**
- **Compact**
- **Touch panel monitor**
- **Laser printer**

CE/US FDA approved

8: COLLAGEN CROSS LINKAGE (1)

- Wavelength 365 nm ± 10 nm
- Average intensity 9.0 mW/cm2
- Energy dose 5.4 J/cm2
- Light emission continuous wave (cw)
- Working distance 40-50 mm
- Illumination diameter S = 7.5-8.5 mm, M = 9.5 -
- 10.5mm
- Electrical power 100 V – 240 V
- Patient positioning placed on bed
- Dimensions 30-35 x 3-6 x 3-6 cm
- System weight total:less than 8 kg,
- Timer 10 min
- Redundant UV-safety check should be there
- No statistical difference should be there in endothelial cell count or apoptosis for an illumination intensity of 9 mW/cm2
- The instrument should be with portable online UPS/CTV attachments.
- **DGCI/CE(EUROPEAN)/USFDA/BIS/ISI/CDSCO(which so ever is applicable for Medical Devices/Equipment) or equivalent certification should be present.**

9: LASIK LASER WITH CORNEAL TOPOGRAPHY WITH MICROKERATOME (1EACH)

9(a): LASIK

1. Integrated Argon fluoride (ArF) premix gas Excimer LASER with replaceable gas cylinders.

2. The Excimer Laser should be of International repute with European CE/ FDA approval.
3. Laser should be of Small spot size & Gaussian beam profile to produce high quality corneal ablation, aspheric beam profile.
4. Multiple Treatment Algorithms: Aspheric ablation profiles without any license fee as standard treatment/ PRK/ PTK and Customized treatments.
5. Machine should have up gradation facility of delivering Topography -guided laser procedure
6,.Pulse Duration = 5-20ns with precise and accurate controls over every single laser pulse.
7. Treatment range: correct a minimum range up to - 12 D (Myopia) to + 3 D (Hyperopic)and >5D (astigmatism) with reliable results. The system should have an International LASIK approval range with proven track records.
8. LASER beam delivery System to have Flying spot for high repetition speed frequency 250 Hz or higher.
9. System should be able to handle a maximum ablation size of 10mm (Optical zone up to a maximum of 8mm).
10. Eye Tracker : Multiple tracking system with Active eye tracking, IR1000 HZ & above, Limbus tracker, Pupil tracking
11. Simple LASER calibration: provision with Test Foil/PMMA plate
12. Imported High Quality Surgeon chair: portable with height adjustment & back support.
13. Motorized OT table bed with the compatibility to be used in conjunction with femto and the excimer laser.
14. Operating microscope with integrated HD video camera (without external attachment) & inclinable binocular tube, should be inclinable up to 0 -180 Degree.
15. The system should have Assistant Work station to facilitate high output of patient flow.
16. The system should have user friendly Patient Data Management for optimum adaptation to clinic-specific workflow.
17 . HDMI output possible.
18. Should have planning station
18. Wavelength 1043 nm or more
19. **US FDA/CE approved**

9(B): CORNEAL TOPOGRAPHY

- Scheimpflung based or combined(Scheimpflung with placidio)
- Should have functional database for Surgery planning , Keratoconus detection, Contact lens fitting
- Should have autofocus capability with eye tracking
- Should have anterior and posterior maps, elevation, refractive equivalent Posterior corneal surface; full (up to 10 mm) pachymetry, AC depth, white to white,.
- Should have pupil evaluation software
- It should supply topographic data on elevation and curvature of the cornea.
- Should measure the anterior and posterior surfaces from limbus to limbus.
- Should measure corneal thickness (pachymetry) graphically over its entire surface.
- Should have Expanded Basic Software, Software Package for Refractive & Cataract.
- Should be able to do Scheimpflug images for precise representation of implants, corneal rings, opacities for lens and cornea.
- Should give ambrosia pachymetry progression map
- Should have software to edit scheimplung image, pupil & limbus
- Should have PC compatible with highest configuration, USB interface. software should be DICOM compatible
- The instrument should be Upgradable with latest and newer facilities preferable
- The instrument should be with online UPS or CVT as per standard recommendation and with 5 year replaceable warranty and dust cover.
- **US FDA/CE approved**

9(C): MICROKERATOME

- System should have nasal cut facility on recipient during refractive procedure.
- System should have hands free linear cutting facility during Corneal Transplantation procedure.
- System should have pre-configured cutting set.
- System should have cutting depth: Epithelium flap, L95µm, L130µm, 160µm, 250µm, 300µm,
- 350µm, 375µm, 400µm, 425µm, 450µm, 475µm, 500µm, 525µm, 550µm, 575µm, 600µm.

- System should have hand piece with autoclavable cover.
- System should have auto clavable cable connecting to hand piece.
- System should have Glass Applinator for measure cutting diameter before cut.
- System should have suction ring of 19/8.5,19/9.5, 19/10.0
- System should have Re-lease key facility to dismantle the hand piece.
- Power Requirements Should be AC 100V - 240V, 50/60 Hz
- **US FDA/CE approved**

Additional requirement:

- The supplier should provide air conditioning, dehumidifier and UPS of adequate capacity to maintain the required atmosphere.
- 3 years warranty and 7 years CMC required.

10: Microscope for posterior segment surgery

1. Compact microscope body with high quality apochromatic Optics with 1:6 zoom ratio and magnification factor 0.4 to 2.4 or better.
2. Coaxial Illumination and retro illumination for very bright red reflex.
3. +2 Deg. Retro illuminations with continuous fading mechanism of co-axial illumination from 2 Deg. to 2+6 Deg or better
4. Inclinable 150-200 degree binocular tube with 10X/12.5 X magnification eye pieces with dioptre adjustments.
5. Objective with 200mm focal length for convenient working distance
6. Motorized foot controlled X-Y coupling with automatic re-centering with travel range of better than 55 mm x 55 mm.
7. Motorized foot controlled Zoom and focus.
    I. Magnification selection – continuous zoom
8. Should have illumination with halogen or Xenon or LED lamps housing and also have a second halogen or Xenon or LED illumination as back up lamp
    i. Xenon or LED lamp system should have Halogen Mode filter or similar to generate halogen like light.
9. Microscope Should Have Non contact wide angle Fundus Viewing system with image inverter to provide reinverted images during vitreoretinal surgery.
    1. Integrated Image Inverter
    ii. Intelligent automatic inversion activated by the position of the Non Contact Wide Angle System when required or foot switch controlled
        1. Non Contact Wide angle system for microscope objective with 200mm focal length
    iii. All the lenses and focusing unit (lens positioning unit) should be Autoclavable (Steam Sterilizabale)
    iv. Easy to use and manoeuvre
    v. Facility to swing in and swing out when system is not in use
    vi. Easy to install and remove from Microscope
    vii. Carrying Case to be provided
    viii. Separate Sterilization case for lenses to be provided.
    ix. Wide Angle Lens with 120 degree of FOV or better – 4
    x. Mid field lens -2
    xi. Condensing lens of Condensing Lens Assembly (CLA) -2
    xii. Fine Focus through Wheel/ Knob Or Motorised
10. Integrated Video camera with recording facility
    a. 4k HD Camera (1080p) or better
    b. Either a full High Definition (1080 pixel) or 4KVideo Recorder System or a computer system for full High Definition (1080 pixel) Video capture.

c. 42 inch 4K LED display unit for live surgery OR better.

11. Accessories
    a. 2 sets of Autoclavable sleeves for microscope knobs and lever.

12. Should have European CE/ US FDA/ BIS approved for the quoted model

11. Specifications for Vitrectomy Machine

Cutter	• Should have at least 7500 cuts/minutes • Must be based on Latest Cutter Technology to allow high cut rate without compromising the Out flow. • Should have simultaneous control of cut rate and vacuum
Vacuum	• Venturi pump with ability to achieve vacuum upto 600 mm of Hg or better through a cassette system OR Dual pump system with ability to achieve vacuum upto ≥600 mm of Hg through a cassette system.
IOP Control	• Should have the capacity to compensate the infusion pressure constantly with results in a more stable IOP.
Illumination	• Two or more separate light source • Independentat leastDual port Xenon/LED/ Metal Halide illumination system.
Other Features	• Should have the capacity to support 23Gauge, 25Gauge vitrectomy • Should have vented Gas forced infusion. • Automated Silicon Oil injection and removal facility. • Auto fluid air exchange. • Fully programmable footswitch with facility to change modes through footswitch. • Diathermy (Retinal) • Facility to toggle between a regular infusion pressure and higher alternate pressure (to ahchieve temponade effect) with footswitch. • Extrusion of subretinal fluid. • Programmability to store various parameters. • Linear, Pulse and burst modes for Phaco. • Phacofragmentation with ultrasound hand piece. • Phaco system integrated with the vitrectomy machine with the following fatures: a Facility to use variety of phacotips like Kelman, ABS & microtips b Linear, pulse and burst modes should be available for Phaco and Dual Linear Modefor vitrectomy should be available. • European CE or FDA approved. • Inbuilt or external, noiseless compressor must be provided. • Latest model to be quoted.

The following accessories are to be provided. They must be also quoted and rates to be provided inclusive of them either in pack or separately:

-VGFI Tubings-20
-Vitrectomy cutters, high speed 25G-20
-Trocar and cannula 25G, with infusion cannula – 20
-Endoilluminator 25G-20
-Cassettes-30, If required
-Silicone oil injection and removal cannula 25 G-10
-Gas autofill injection cannula-10
-Diathermy tips and cords 25G-4
-Spare bulbs for Endoilluminator-2
-Phacofragmentation titanium tips-2

-Phacoemulsification titanium tips, sleeves-2
-Phacoemulsification handpiece-1
-Phacofragmentation Handpiece-1**,(if phacofrag handpiece is same as Pahcooemulsification Handpiece make Phacoemulsification Handpiece Total Quantity-2)**
-Irrigation and aspiration handpiece bimanual- 4 set
-Irrigation and aspiration tubings-30
- Safety filter for operating microscope
-25 Ga sutureless chandelier endoilluminator with preloaded trocar and canula-10
-- High quality stand for machine if needed with standard accessories like surgical tray and motorised bottle pole

Group-B: Orthopaedics

1: TECHNICAL SPECIFICATION FOR ARTHROSCOPY SYSTEM

General Specifications:

1 Should be USFDA Certified.

2 All the Electronic equipments should comply with Electrical safety conforms to standards for electrical safety.

3 All the equipment's power input should be 220-240 V AC, 50 Hz fitted with Indian plug.

4 Warranty 3 years + 7 years CAMC for equipment, and 5 years warranty for hand instrument.

5 Price should be quoted in each and every instrument separately in Indian Currency .

1. Arthroscope with sheath and Obturator

1. Wide Angle Forward-Oblique Telescope 70 degree, diameter 4 mm, length 18 cm, autoclavable, and fiber optic light transmission incorporated.
2. High Flow arthroscopic Sheath with snap in coupling mechanism diameter 6,5 mm working length 13.5 cm, two stopcocks, rotating, for use with telescopes 0 degree, 30 degree, 70 degree with Obturator blunt
3. Wide Angle Forward-Oblique 2.5 mm Arthroscope 30 degree with corresponding sheath for Paediatric Arthroscopy.

2. Arthroscopic Camera

Three-Chip, Camera should be HD, resolution of 1920 X 1080 native resolutions, Full HD Progressive/ Interfaced. Video Output should have Minimum; DVI, S-Video, C-Video, HDSDI with Extra long fiber optic cable.

3.. Arthroscopy hand Instruments for Shoulder.

1. Suture Manipulator with a traumatic tip to spread paraller strands of suture with its jaw to create a closed loop to allow suture slide freely during extraction
2. Bankart Rasp
3. Knife Rasp
4. Shoulder Elevator
5. Tissue penetrator cum suture retriever in below angles with Small Sharp penetration tip Straight 6. Tissue penetrator cum suture retriever in below angles with Small Sharp penetration tip 35 Degree up
7. Tissue penetrator cum suture retriever in below angles with Small Sharp penetration tip 45 Deg Right
8. Tissue penetrator cum suture retriever in below angles with Small Sharp penetration tip

45 Deg left

9. Tissue penetrator cum suture retriever in cigar handle with small sharp penetrator curved tip so that it can be used to grasp the labarum at 6‘ O Clock position Curved Left
10. Tissue penetrator cum suture retriever in cigar handle with small sharp penetrator curved tip so that it can be used to grasp the labarum at 6‘ O Clock position Curved Right
11. Multifunctional Suture passer with provision of only 1 needle, which can hold the cuff & at the same time pass the suture & retrieve it in one step
12. Nitinol needles for passing the suture (1 box)
13. Open ended suture cutter, side loading with function of leaving sufficiently long tail without chance of cutting knot
14. Single hole knot pusher
15. Hook knife
16. Reusable CANULATED Obturator for 8.5 mm cannula for easy cannula insertion
17. Reusable CANULATED Obturator for 7 mm cannula for easy cannula insertion
18. Reusable CANULATED Obturator for 5.5 mm cannula for easy cannula insertion
19. Alligator locking grasper
20. Crochet hook
21. Shoulder Probe
22. 1.8 mm Drill bit
23. 2.5 mm Drill bit
24. 6 inch X 3.5 mm spiked tip drill guide
25. Sterilization Tray

5. <u>Arthroscopy Hand Instrument for PCL</u>

1. PCL Director Drill Guide Handle
2. Director PCL Elbow Aimer ranging from 40 to 65 deg for drilling to the laser mark at the aimer‘s elbow
3. Director PCL Tip Aimer ranging from 40 to 65 deg for drilling to the of the aimer
4. Director PCL Tibial Aimer with broad face tip that easily passes through notch & provides protection to posterior capsule during guide wire drilling
5. Director PCL Femoral Aimer for outside in drilling with medial incision, should have hoop tip to provide visual reference for the diameter of the fully reamed tunnel
6. WIRE CATCHER PCL
7. SAFETY STOP, PCL
8. Director 4-point Bullet with four sharp points for secure engagement of the guide at any angle
9. Endoscopic CANULATED drill bit 5 mm for femoral tunnel drilling including calibration
10. Endoscopic CANULATED drill bit 5.5 mm for femoral tunnel drilling including calibration
11. Endoscopic CANULATED drill bit 6 mm for femoral tunnel drilling including calibration
12. Endoscopic CANULATED drill bit 6.5 mm for femoral tunnel drilling including calibration
13. Endoscopic CANULATED drill bit 7 mm for femoral tunnel drilling including calibration
14. Endoscopic CANULATED drill bit 7.5 mm for femoral tunnel drilling including calibration
15. Endoscopic CANULATED drill bit 8 mm for femoral tunnel drilling including

calibration

16. Endoscopic CANULATED drill bit 8.5 mm for femoral tunnel drilling including calibration
17. Endoscopic CANULATED drill bit 9 mm for femoral tunnel drilling including calibration
18. Endoscopic CANULATED drill bit 10 mm for femoral tunnel drilling including calibration
19. Endoscopic CANULATED drill bit 11 mm for femoral tunnel drilling including calibration
20. Endoscopic CANULATED drill bit 12 mm for femoral tunnel drilling including calibration
21. CANULATED drill bit 5 mm for tibial tunnel drilling
22. CANULATED drill bit 5.5 mm for tibial tunnel drilling
23. CANULATED drill bit 6 mm for tibial tunnel drilling
24. CANULATED drill bit 6.5 mm for tibial tunnel drilling
25. CANULATED drill bit 7 mm for tibial tunnel drilling
26. CANULATED drill bit 7.5 mm for tibial tunnel drilling
27. CANULATED drill bit 8 mm for tibial tunnel drilling
28. CANULATED drill bit 8.5 mm for tibial drilling
29. CANULATED drill bit 9 mm for tibial tunnel drilling
30. CANULATED drill bit 10 mm for tibial tunnel drilling
31. CANULATED drill bit 11 mm for tibial tunnel drilling
32. CANULATED drill bit 12 mm for tibial tunnel drilling
33. Slotted sizing block with slots to measure graft ranging from 5 mm to 12 mm with increment of 0.5 mm. Also, includes the scale to measure the length of the graft
34. Universal Endo Femoral Guide Handle
35. Endo-Femoral Aimer, no offset
36. 3mm offset Endo-Femoral aimer
37. 4mm offset Endo-Femoral aimer
38. 5 mm offset Endo-Femoral aimer
39. 6 mm offset Endo-Femoral aimer
40. 7 mm offset Endo-Femoral aimer
41. Offset guide for precision tibial tunnel drilling, 2 mm -5 mm
42. Notch master curette 8.0 mm
43. Tendon Stripper Slotted & Closed
44. Depth probe for measuring femoral tunnel length, Calibrated 10 mm to 130 mm in 2 mm increments
45. 3.5 mm CANULATED Hex Driver, 1.5 mm cannulation
46. Bio Screw Driver & Screw Starter
47. 4.5 mm endoscopic CANULATED drill bit
48. 2.7 mm Graft passing pin wire (Box of 6)
49. 2.4 mm Tibial guide wire or tibial tunnel (Box of 6)
50. Guide wire 1.5 mm cannulation with marking (Box of 6)
51. Convex rasp
52. Compound curve rasp
53. Bone tunnel plug, Small 7.0-8.0 mm Package of 3
54. Bio Screw interference Screw Driver

6. <u>Shaver Hand Piece</u>

a. The autoclavable shaver hand piece, which is compact, lightweight and ergonomically designed, with hand control.

b. The connecting cable should be autoclavable and replaceable with length of approx. 10 Ft.
c. The hand piece should be not more than 8 Inches length and 460 Gms.
d. The hand piece should have suction control lever.
e. The Shaver Hand piece should have safety mechanism of Blade Window Lock to avoid any unintentional tissue damages on pull out.
f. The Safety feature for window locking should be accessible and controllable from shaver hand piece.
g. The Shaver hand piece should have push-button motor controls: Forward, Reverse Oscillate, and Blade and Window Lock.
h. The Shaver should offer Maximum torque not be less than 32 oz.in
i. The shaver should be supplied with compatible shaver sterilization case.
j. The Shaver should be able to use any electro Blades, if desired.
k. Input voltage of 100 to 240 V, 50/60 Hz power consumption not more than 350 VA.

7. Consumables

a. Shaver Blades
b. Endo-Button
c. Bio-Screw
d. Suture Disc
e. Suture Post
f. Staple
g. Fiber tape
h. Fiber wire
i. Interference Screw (Titanium)
j. Radiofrequency Ablation probe

2:Navigation system for TKR & THR

General Specifications:

01	System should be of latest model
02	System Should be European CE and USFDA certified
03	All the Electronic equipments should comply with Electrical safety conforms to standards for electrical safety IEC 60601-1.
04	All the equipment's power input should be 220-240 V AC, 50Hz fitted with Indian plug.
05	Warranty 3 years + 7 years CMC for equipment
06	Price should be quoted in Indian Currency.
07	There should be facilities to upgrade the system to be compatible with PACS system
08	Demonstration of navigation system is must to the satisfaction of user.
09	Proper training to Doctor and OT technical staff should be provided

Technical Specification for knee Navigation

01.	Navigation system should be easy to set up and should work under Windows/Linux/Unix operating system environment. The system should be plug n play and system software should be user friendly wizard guided to control set up, registration and navigation procedure
02	System should have Optical Wireless Active/Wireless passive marker tracking technology
03	The system should have touch-sensitive screen and could be used in sterile field. The display should be of Full HD resolution (1920 X 1080) with minimum 20 Inch wide screen
04	The system must have dynamic referencing so that registration is not lost even if the camera or patient moves.

05	It should have single mounted cart for Camera with mobility feature to adjust the camera for better positioning and surgeon Screen/separate mobile cart for the camera stand for flexible positioning.
06	System should have software for pin-less navigation for knee replacement
07.	Software should have pin-less digitalization for hip center
08	Software should have point, axis and surface registration algorithm
09	Software should be fast and support primarily for mechanical axis alignment through distal femoral and tibial cuts.
10	The system should have image free Knee navigation application package for knee replacement surgeries.
11	Software should have options for manual workflow/automatic workflow setting and Software should have dynamic adaptation to the surgical steps based on automatic tool detection.
12	The navigation software should offer a workflow without implant data so that total Knee replacement implants from reputed manufacturers can easily be used with it. Software should provide information on Varus/Valgus, Resection details, Flexion/extension details in real-time as per selected position.
13	Software should allow surgeon to register patient with acquisition of minimal points with an option to skip additional registration steps. Accordingly rotational reference information should be available after registration.
14	The software should allow the navigated placement of cutting blocks for tibial resection
15	The software should allow the navigated placement of cutting blocks for distal femoral resection
16	The software should allow the navigated placement of cutting blocks for anterior femoral resection
17	The software should allow the verification of all performed resections
18	There should also have facility of using two pin fixations each for Reference instruments on tibia & femur. These pins must be semi bi-cortical/bi-cortical ones with no possibility of the pins to wobble once fixed.
19	Re-registration must be possible easily if the surgeon wants to go back and mark the various landmark points.
20	The system should also offer software for simplified verification workflow without placing any pins on the bone and should allow verification of respective tibial and distal Femoral resection through conventional surgery.
21	Software should also offer combination of pin based Femur navigation only for distal femur resection and verification of tibia cut with conventional instruments without using pins and vice versa.
22	The system should have screenshot storage function for documentation purpose
23	Navigation Instruments should be active/passive but should be wireless
24	Software should offer patient report with comparative information on pre and post-operative details like varus/valgus and range of motion
25	The software allows precise measurement of knee flexion angle and long leg alignment in varus/valgus over full range of motion
26	Software should have the option to perform HTO Procedure as well.
Hip Navigation Specifications:	
01	The system should have Image free Hip treatment planning and navigation application package for Total Hip replacement surgeries.
02	The software allows a hip surgery being performed in supine position without repositioning the patient. Software should also allow hip surgery in lateral position without repositioning the patient.
03	The Hip application package should offer 3D morphing, cup navigation, verification, leg length control
04	The anterior pelvic plane (APP) can be calculated without knowing where the pubis point is.
05	The software should provide the ideal Size of Cup to be used for that patient. System should offer flexibility to Surgeon to use Cup Implant of their choice.
06	System should have navigation ready cup impactor which can be used for various cup implants. Impactor should be capable of doing navigated cup placement with information on cup anteversion and inclination. System should allow to plan and navigate the cup as per the preference of Surgeon.
07	Software should also come with cup impactor for navigation.
08	Software should also offer the values for leg length and offset changes after placement of trial implants.
09	Hip replacement system should also have non-invasive femur reference geometry to ensure that pins are not used in Femur during navigated surgery
10	It should include extended pointer that could enable it to register patients using anatomical landmarks
11	The system should have screenshot storage function for documentation purpose

Warranty / after sale service: -

01.	3 years comprehensive onsite warranty of entire equipement (Spares and labour). This will be followed by 7 years CMC.
02.	During warranty period as well as during Comprehensive Annual Maintenance Contract Period, firm will maintain the system with all spares and accessories. During warranty and CAMC period, no additional amount is to be paid towards supply of equipement
03.	Physical damages will not be covered under warranty period as well as during CAMC period. To procure the accessories, in case of physical damages, bidders are required to quote unit price of each accessories.
04.	List of consumable with price should be quoted separately, if applicable
05.	List of accessories with price should be quoted for physical damages
06.	Maintainance services during warranty and CMC directly by OEM Engeenir, not by channel partner
07.	Online UPS to supplied with 30 minutes bakup navigation system

3:Tissue Bank

1. Laboratory Centrifuge

a) Capacity – 1000ml (bucket system)
b) Pilot indicator lamp - 0-60 min
c) Max speed - 5000 RPM
d) Max RCF 3650xg
e) Stepless speed controller
f) Digital speed meter 0-99 min
g) Digital preset timer & illuminates switch
h) Warranty 1 year

2. LAMINAR AIR FLOW (BSL 3)

a) Surface — Polished stainless steel body
b) SIZE — 4 feet, 2.5feet, 2.5 feet height
c) Sides — glass
d) Stand — fixed or adjustable 2 - 2.5 feet from ground
e) Power source — Electric 230V 50Hz
f) Air flow — vertical, speed control, no noise, with pressure monitors, DC motors
g) Work table — stainless steel
h) Hepafilters with protection of having minimum efficiency of 99.995% at pore size 0.3 micron
i) Pre-filter pleats — Made of non woven micro fibre glass pleated media, separated by corrugated aluminium foil separators, one to two
j) Fluorescent tube — > 900 Lux
k) UV tube — short wave
l) Blower — present, noise less than 60dB, no vibration
m) Certification — CE and ISO certified
n) LCD Display and alarm for HEPA filter failure, blower failure, airflow speed and incorrect window position failure
o) Cleanliness at work station — class- 100
p) Lab chair
q) Foot rest

r) UPS with battery backup
s) Front window 10inches with sash opening and 10 deg slanting
t) Standard warranty 3 years of warranty and 7 years of CAMC

3. Electric Orbital Shaker

a) Usage Laboratory
b) Power Source Electric
c) Speed Range 50-350 rpm
d) Speed indicator digital
e) Platform size 18 inches by 18inches, Non slip surface
f) Digital display
g) Warranty 1 year

4. Laboratory Lyophilizer

a) Temperature Range 80 Degree c
b) Temperature Accuracy 3 degree C
c) Temperature Control Microprocessor based PID control with Auto tune
d) Temperature Sensor PT-100 RTD. Class A
e) Cooling CFC free compressor utilizing R 404 A-eco Friendly Refrigerant/ equivalent, with condenser, motor and relay
f) Ultimate Vacuum Pressure level 0.001 to 0.0002 Mbar
g) Construction insulation Double walled with polyurethane (PUF) provided
h) Power 750 – 1000 Watt
i) Standard warranty 3 years of warranty and 7 years of CAMC

5. Pulse levage system

a) Use Medical
b) Application Orthopaedics
c) Power supply 230 V (AC)/ 50 Mz +- 10%
d) Handy
e) Irrigation pressure
f) Autoclavable
g) Control in hand
h) Stainless steel unit
i) Peristaltic pump
j) Shower spray nozzle
k) Single stream tip nozzle
l) Voltage control inbuilt
m) Warranty 1 year

6. Autoclave electrically operated

a) Vertical with stand
b) Chamber & Boiler (Steam Generator) are constructed from SS 304 Grade
c) Lid (single piece door) made of stainless steel tightened by Radial locking system
d) Sealing of lid by Neoprene Rubber Gasket

e) Chamber insulated by Mineral/Glass wool to minimise the heat losses and is covered by polished stainless steel sheet.
f) Fitted with pressure gage, safety valve and steam release valve.
g) Sterilizing Temperature up to 140 deg C
h) Sterilizing pressure :1.2 to 1.5 kg/cm2 (10 psi to 22psi), checked upto 40psi, accuracy upto 3psi
i) Fitted with separate valves for injection the steam into the main chamber
j) Fitted with automatic vacuum breaker
k) Fitted with automatic low water level cut0off Device (for Prevention of Heaters) with indicator
l) Fitted with automatic pressure control switch
m) Dial thermometer to indicate the inner chamber temperature
n) Voltage: 220 – 230 volts AC, (50 - 60Hz)
o) Water draining system – hand operated
p) Heating device – immersion heater ISO certified
q) Warranty 1 year

7. <u>Ultra low temperature freezers (-80 deg C)</u>

a)	Body material	Stainless Steel
b)	Type	upright
c)	Temperature range	-80 deg C
d)	Accuracy	+/- 1 deg
e)	Storage Capacity	400L – 700L
f)	Power Source	Electric 230 V 50Hz
g)	Defrost type	manual
h)	Energy Efficiency	4 Star
i)	Condenser fan	yes
j)	Evaporator fan	yes
k)	Tray	5
l)	Refrigerant	environment safe. Recommended by PCB
m)	Insulation	polyurethane foam with vacuum insulation
n)	Noise level of compressor	less than 60dB
o)	Cooling time to -80deg	less than 5hrs
p)	Display	digital LED
q)	Voltage stabilizer	in built and additional 5KVA stabilizer, aluminium racks
r)	Certification	CE / UL certified

s) Must incorporate H drive information centre, set point security with an interface displaying and alarm status for warm or cold excursions, door ajar, power failure, service warnings, temperature record

t)	Compressor	same manufacturer
u)	Warranty	3 yrs and 7 yrs of CAMC

8. **<u>Freezers (</u>**<u>-20 deg C)</u>

a)	Body material	Stainless Steel
b)	Type	upright
c)	Temperature range	-20 deg C
d)	Accuracy	+/- 1 deg
e)	Storage Capacity	400L – 700L
f)	Power Source	Electric
g)	Defrost type	manual
h)	Energy Efficiency	4 Star

i)	Condenser fan	yes
j)	Evaporator fan	yes
k)	Tray	3 - 5
l)	Refrigerant	environment safe. Recommended by PCB
m)	Certification	CE or and UL certified
n)	Alarm	door lock, door ajar,
o)	Display	digital on the front
p)	Compressor	same manufacturer
q)	Warranty	3 yrs and 7 yrs of CAMC
r)	Door lock system	

9. Electric Power Drill System

A. Surgical Driving Unit with stand and foot switch

a. Material Steel
b. Motor Power 90 Watt
c. Power Source Electric
d. Voltage 220 V AC

B. Power drill hand piece

a. Autoclavable and piston grip lightweight
b. Ergonomically designed grip
c. Max speed 1200 rpm
d. Cannulation - 5.5mm

C. Power reamer hand piece

e. Hand piece – piston grip
f. Speed 400rpm
g. AO type quick coupling
h. Cannulation 5.5mm
i. Lightweight
j. Adaptors available for Jacobs trinkle
k. Autoclavable
l. Flexible reaming shaft size from 8.5 mm to 15 mm at 0.5 mm increments

D. Autoclavable black shaft

E. Power saw hand piece with 5 blade

a. Hand piece – piston grip
b. Speed 1000-1200 rpm
c. Weight 700-800 gm
d. Voltage 220 V AC
e. Power source – Electric

F. Sterilization box for drill system

G. System should be ISO certified

H. Warranty 1 Year

G. Price of each Item should be quoted separately

10. FULLY AUTOMATED ELISA READER AND WASHER

- Should be fully automatic, able to support all plate formats u bottom, V bottom and flat bottom 96-well micro plates
- PC based system
- Optical systems: LED lamp/UV Xenon flash lamp.
- Detection: Absorbance based.

- Reading Time: < 15 Seconds for 96-wells.
- Wavelength range: 340 nm to 750 nm or more.
- Wave length selection should be double monochromatic with 1 nm increment
- System should have capability to do qualitative, quantitative, kinetics with any formulae including validation, transformation, and factors and floating cut off.
- Absorbance Range: 0-40 OD
- Resolution :0.001 Abs
- Accuracy: 1% +/- 0.010 OD
- Repeatability: 0.5% + - 0.005 OD
- System should perform self-check before every measurement
- Power requirement :220 V-50/60 Hz
- PC Requirement (All in one PC) : Intel Core i7 processor, 4 GB RAM, 2 GB graphic, 1 TB hard disc, full HD LED monitor 17", DVD writer, Wi-Fi, Wireless key board and mouse, 64 bit and latest version of Microsoft Window, with MS office licensed, Laser Printer (> 20 pages/min.) >5000 pages /refilling of cartridge
- Inbuilt shaking mode.
- PC Software packages (windows ® compatible) for on board data analysis.

ELISA WASHER

- Fully automatic plate washer.
- Programmable
- Alarm for monitoring the overflow and wash solution.
- Dispensing and aspirating needles should be separate
- Washer should have 8 to 12 channel wash head
- Should have 2-4 independent liquid channels
- Wash volume per well should be programmable
- Should have residual volume of <2ml
- Should have strip selection option which allows to wash selected strips onlu
- The supplier should provide comprehensive training to users on operation of the instrument and application support onsite as per specifications
- Branded compatible online UPS with at least 30 minutes backup
- Calibration according to NOST/DKD/PTB/UKAS/NPL/UL/CU/ listed.

Group-C: Urology

1 (a) :Specification for Adult Cystoscope&Resectoscope, Cystolitholithotripsy and urethrotome

The set should include the following:

1. Forward oblique 30 degree Telescope, diameter 4mm,Autoclavable,Length30cm,fiber optic light transmission incorporated.
2. Straight Forward 12 degree Telescope, diameter 4mm, Autoclavable, Length 30cm, fiber optic light transmission incorporated.
3. Cystoscope-Urethroscope Sheath,19FR,22Fr & 25Fr each with obturator and 2 LUER-lock connectors
4. Telescope bridge,with 1 lockable channel
5. Telescope bridge,with 2 lockable channel

6. Optical Grasping forcep,double action jaws for stent removal.
7. Forcep for removal of foreign bodiesof 5Fr,7Fr & 9Fr each with double action jaws,flexible,length 40cm.
8. Biopsy Forcep 5Fr, 7F & 9 Fr, each with double action jaws,flexible,length 40cm
9. Ball electrode,unipolar,5Fr & 7Fr ,each with length 53 cm
10. Resectoscope Sheath with LUER-Lock stopcock,including connecting tubing for in & outflow,26Fr,oblique beak,rotating inner sheath with ceramic insulation .
11. Standard oburator with flexible tip & Visual obturatoreach with channel for flexible instruments.
12. Working element where cutting by means of a spring,the thumb support is movable and in rest position the electrode is inside the resectoscope sheath.
13. cutting loop,angled* 6
14. coagulating electrode angled,blunt* 6
15. coagulating electrode, with barrel-shaped end* 6
16. coagulating electrode,with ball end* 6
17. coagulating electrode,angled,pointed* 6
18. High frequency cords(Monopolar)* 2
19. Protection tube for sterilization and storage of electrodes.
20. Sachse Urethrotome sheath,21 Fr with channel
21. Obturator for urethrotome sheath.
22. Telescope Bridge for use with urethrotome sheath with 5 Fr channel for instruments.
23. Mouermeyer stone punch -Punch-Working Element,Punch Sheath, with Central Valve, including connecting tubes for in- and outflow, 25 Fr., straight beak, with obturator.Insert Tube, with channel for flexible instruments, 7 Fr., with atraumatic beak for urethroscopy
24. Sachse cold knife,straight* 6
25. cold knife,round* 6
26. bottle type ellik evacuator * 2
27. Otis-MauermayerUrethrotome, parallel expanding, length of dilating surface 16 cm, with 02 knives.
28. Bi-polar, working element, cutting by means of spring, movable thumb ring, in rest position the electrode is inside the sheath x 1 No.
29. Bipolar Compatible HF cord x 2 Nos.
30. Specified Cutting loops, bipolar, 24 Fr, and Collin's knives Bipolar should be supplied to be used for 12 or 30 degrees telescope separately * 6 each
31. Specially designed loops for bipolar Resection of Bladder tumors should be supplied to have maximum safety for posterior wall tumors x 6 Nos.

32. Specially designed loops for bipolar Vapo enucleation of prostate tissue should be supplied to have maximum safety for posterior wall tumors x 6 Nos.

All the items should be from the same manufacturer and USFDA approved.

1(b) :Specification for Slender TURP set

The set should include the following:

1. It should have 12°Telescope with enlarged view, diameter 2.9 mm, length 30 cm or more, autoclavable, fiber optic light transmission incorporated
2. Cystoscope-Urethroscope Sheath of 14Fr or smaller, compatible to slender telescope, with obturator, should have working length upto 22 cm, & working channel of 5 Fr or more.
3. Grasping Forceps for Foreign Bodies, 5 Fr., double action jaws, flexible, length 40 cm
4. Biopsy Forceps, 5 Fr., double action jaws, flexible, length 40 cm
5. Resectoscope Sheath, 22 Fr. or smaller , oblique beak, rotating inner sheath with ceramic insulation, quick release lock, Connecting Tube for In- and Outflow.
6. Standard obturator for 22 Fr. Resectoscope sheath
7. Working Element Monopolar, where cutting by means of a spring. The thumb support is movable. In rest position the electrode is inside the sheath.
8. Working Element Bipolar, where cutting by means of a spring. The thumb support is movable. In rest position the electrode is inside the sheath.
9. Cutting loops for monopolar as well as bipolar compatible to 22 Fr sheath , angled, X 6 qty. each
10. Coagulating electrodes for monopolar as well as bipolar compatible x 6 qty each.
11. Vapourisation electrode for bipolar working element x 6 qty
12. High frequency cords (Monopolar and Bipolar) x 2 qty, each.
13. Protection tube for sterilization and storage of electrodes.

All the products offered must be from the same manufacturer.

Should be CE/ European FDA Approved and should match international guidelines for Patient safety

2 :Paediatriccystoscope / Resectoscope

1. Cysto-urethroscope for Neonates and Children

Neonatal Cystoscope set should include the following:

The Cystoscope should be 30 deg, diameter of not more than 1.9mm and length 12cm, autoclavable.

Should be supplied with 7 Fr Cysto- Uretheroscope Sheath for examination and continuous irrigation with obturator, autoclavable and working length of 10 cm.

Should be supplied with 9 Fr Cysto- Uretheroscope Sheath for examination and continuous irrigation with working channel of 3 Fr.

Compatible Ball / button electrode, unipolar 3 Fr. x 2 Nos.

Compatible Forceps for foreign body forceps, unipolar 3 Fr., x 2 Nos.

Compatible Biopsy Forceps, unipolar 3 Fr., x 2 Nos.

Compatible HF Cord for electrodes x2 Nos.

The Compact Pediatric Cystoscope set should include the following:

1. The Pediatric Cystoscope should be compact , 8 Fr, 6 deg., 1 Step dilation, length 13cm, autoclavable, with angle eye piece,fiber optic light transmission incorporated, with two lateral irrigation ports and 1 working channel, 5 Fr for operating instruments 4 Fr.
2. Ball / button electrode, unipolar 3 Fr., length not less than 50 cm x 2 Nos.
3. Hook Electrode, unipolar 3 Fr., length not less than 50 cm. x 2 Nos.
4. Compatible HF Cord for electrodes x 2 Nos.
5. Grasping forceps for foreign body removal, double action jaws, flexible, 3 Fr., length 28cm x 2 Nos.

The PaediatricCysto – Resectoscope Set should include the following:

1. Miniature Straight Forward Telescope, 0 degree, diameter 1.2mm,Autoclavable, Length 20cm, fiber optic light transmission incorporated.
2. Should be supplied with 9 Fr Cysto- Uretheroscope Sheath with obturator, autoclavable, working channel of 5 Fr
3. Should be supplied with 8 Fr Cysto- Uretheroscope Sheath for reflux needles, with obturator , working channel of 4 Fr
4. Resectoscope Sheath , 9 Fr with obturator.
5. Telescope Bridge, with 1 lockable channel.
6. Working Element Set, passive action to be supplied with following accessories:
   a. Working Element (Single/ same working element should be compatible with resectoscope and uretherotome sheath)
   b. Cutting Loop - 1
   c. Coagulation Electrode - 1
   d. High Frequency Cord – 2
   e. Protection Tube - 1
7. Cutting Loop, angled x 6 Nos
8. Coagulating Electrodes, angled, blunt x 6 Nos
9. Coagulating Electrodes, hook shaped, ball end x 6 Nos
10. The Uretherotome Sheath should be atraumatic, should be not more than 8 Fr in size. The Sheath should be provided with Obturator AND luer lock connectors (2 nos)
11. Should be provided with extra Cold Knives as given below
    a) Cold Knife, round - 2 No,
    b) Cold Knife, sickle - shaped - 2 No,
    c) Cold Knife, hook - shaped - 2 No
12. All the products offered should be from same manufacturer/make.

3(a) :Semi Rigid Ureterorenoscope

	Specification for URS set 4Fr
1	Compact operating fibre uretero-renoscope, autoclavable, 4.5/6.5 fr.angle of view 5 deg.,Including automatic valve for inserting instrument, with oblique eyepiece . Distal tip of sheath 4.5 fr.Oval irrigation and instrument channel of 3 fr.For accessory instruments of max. 4 fr. Working length 430 mm.
2	Yellow washer (pack of 10)1
3	Foreign body forceps, flexiblewith alligator jaws 3 Fr.,WL = 530 mm
4	Biopsy forceps, flexiblewith alligator jaws 3 Fr.,WL = 530 mm
5	Coagulating button electrode3 Fr., WL = 900 mm
6	Rubber Damru Washers (pac of 10)

	Specification for URS set 6.5 Fr
1	Uretero-Renoscope, , 6.5 Fr 6°, one-step, conical, length 43 cm, autoclavable, with angled eyepiece, fiber optic light transmission incorporated, 2 lateral irrigation ports and 1 working channel 4.8 Fr. for instruments upto 4 Fr., sealing and tray for cleaning, sterilization and storage.
	A. URS should have working length of at least 43 cm B. Grasping Forceps for stone fragments, double action jaws, 4 Fr., rigid, length 60 cm. x 2 Nos C. Compatible Biopsy , double action jaws, rigid, length 60 cm. x 2 Nos
	D. Distal tip diameter of 6.5 Fr.
	E. Detachable instrument port with sealing system and quick release lock, one instrument channel.
	F. Distal end of sheath atraumatically shaped with rounded tip. G. Detachable Instrument Port with sealing system and quick release lock, 2 channels, for use with uretero-renoscopes
	Specification for URS set 8Fr
1	Uretero-Renoscope, , 8 Fr , 6°, one-step, conical, length 43 cm, autoclavable, with angled eyepiece, fiber optic light transmission incorporated, 2 lateral irrigation ports and 1 working channel 6 Fr. for instruments upto 5 Fr., sealing and tray for cleaning, sterilization and storage.
2	Distal tip diameter of 8Fr.
3	Detachable instrument port with sealing system and quick release lock, one instrument channel.
4	Distal end of sheath atraumatically shaped with rounded tip.
5	Grasping Forceps for stone fragments, double action jaws, 5 Fr., rigid, length 60 cm. x 2 Nos
6	Compatible Biopsy , double action jaws, rigid, length 60 cm. x 2 Nos
7	Detachable Instrument Port with sealing system and quick release lock, 2 channels, for use with uretero-renoscopes

All URS can be quoted separately.

3(b): Standard Nephroscope

	NEPHROSCOPE SET	
	Nephroscope 18-20fr.	
1	Wide angle straight forward Rigid nephroscope with angled eyepeice , View 6^0-12^0 working channel 3-3.5 mm	
2	continuous flow operating sheath compatible to abovenephroscope	
3	Obturator continuous flow operating sheath capability 19-22 Fr	
4	Standard Grasping forcepsfornephroscope 9-10.5fr. with double action jaws, length 33-38 cm - Biprong , Triprong, alligator and peanut	
5	Biopsy forceps	
6	Endopyelotomy knife	
7	Metal or Teflon 9-30 fr.Dilators set	
8	Wide angle straight forward Rigid nephroscope with parallel eyepeice	
9	continuous flow operating sheath capability 22 Fr	

10	Obturator for continuous flow operating sheath capability 22 Fr	
11	Standard Grasping forceps- Biprong , Triprong, alligator and peanut	
12	Biopsy forceps	
	Nephroscope 20-24fr.	
13	Wide angle straight forward Rigid nephroscope with parallel eyepeice , Angle of view 6-16^{0}working channel 3-3.5 mm	
14	continuous flow operating sheath compatible to abovenephroscope	
15	Obturator for continuous flow operating sheath capability 24 Fr	
16	Standard Grasping forcepsfornephroscope 9-10.5fr. with double action jaws, length 33-38 cm - Biprong , Triprong, alligator and peanut	
17	Biopsy forceps	
18	Hollow obturator and facial dilator (Preferably Amplatz)	
19	Initial puncture needle - 2 part and 3 part	
20	Storage & transportation tray	
21	Aiken cannula	
22	Amplatz sheath (Full set)	

3 (c) :Mini Nephroscope:

a. Nephroscope should have a size of not more than 12f. b. Nephroscope should have an automatic pressure control system so that fragments come out automatically when used with pressure irrigation. c. Working channel should accommodate instruments up to 5 Fr. d. The degree of view should not be less than 12 degree. e. It should have an angled eye piece. f. Scope should be supplied with non-fitting sheaths which should work as amplatz sheaths as well. g. Each sheath should be supplied with reusable, compatible one step dilator.
h. Outer sheaths along with compatible one step dilator for following sizes of sheaths: 15/16 Fr, 16.5/17.5 Fr, 21/22 Fr i. The one step dilators should have channel for placing guide wires as and if required.
j. Grasping forceps of size not more than 5 Fr., double action jaws should be supplied.
k. Biposy forceps of size not more than 5 Fr., double action jaws should be supplied.
l. Triprong grasping forceps of size not more than 5 Fr., double action jaws should be supplied.

m. 5 Fr scissor, single action jaws should be supplied.
n. An applicator consisting of sheath and rod should be supplied, to be used with haemostatic agents like floseal and surgiflow. **All products should be CE and of same make.**

4(a) : Flexible URS

Uretero-Fiberscope for access to entire intrarenal collecting system:

Working length of 67cm
Outer diameter of the shaft should be between 7 Fr –8 Fr.
It should have an instrument channel between 3Fr to 4 Fr.
Direction of view should be 0 degree.

Angle of view should be between 80 to 90 degree.

Maximum angle of deflection upto 270 degree downward and 270 degree upward is needed.

It should have a ceramic liner in the distal end of the working channel to protect it from thermal or electrocautery damage.

Should be waterproof and fully immersible in solution.

It should adhere to sterilization method with ETO, FO gas, Steris&Sterrad.

Following compatible accessories should be supplied with this instrument – Grasping forceps, and case for the instrument, Pressure compensation cap, and leakage tester and cleaning brush.

CONSUMABLES TO BE SUPPLIED ALONGWITH:

Nitinol Core wire guide with hydrophilic coating and should have the ability of being straight at one end and angled at other end,length 150cm, x 2 Nos

Ureteral Access sheath with inner diameter 9.5fr and length of 35cm and 45 cm,13cm.foreign make x 2 Nos each

Ureteral access sheath with inner diameter of 12.0 fr and length of 35cm,45cm and 28cm , foreign make x 2 Nos. each

Tipless stone extractor with length of 115cm and size of 2.2 frand 1.5 frforeign make x 3 Nos

Nitinol stone extractor with partially closer redesign the basket to provide the tight weave of a 12 or 16 wire basket.x 3 Nos

Balloon ureteral dilator of 7fr &5fr with catheter length x 3 Nos

65cm,inflatedballon diameter 6mm & 5mm, ballon length of 4cm & 10cm with x 3 Nos

4(b) : Flexible Video URS

Video URS (Chip on tip)

Flexible Video UreteroRenoscope for access to entire intrarenal collecting system:

Scope should have the latest state of the art CMOS technology for image transmission for better resolution of image.

Scope should have inbuilt LED light source located at the hand piece of the scope, with no external light cable required for it.

Should be ready to use after direct only one Plug in to (existing) HD Camera Control Unit.

Scope deflection should be logical i.e. when lever is in down position the tip gets deflected to down position.

The torque ratio should be 1:1, i.e. there should be 1 to 1 response of the tip,showing high torque stability.

Working length of 67cm-70cm.

Outer diameter of the shaft should not exceed 8.5 Fr .

It should have an instrument channel between 3Fr to 4 Fr.

Direction of view should be 0 degree.

Angle of view should be 80- 90 degree.

Maximum angle of deflection upto 270 degree downward and 270 degree upward is needed.

It should have a ceramic liner in the distal end of the working channel to protect it from thermal or electrocautery damage.

Should be water proof and fully immersible in solution.

It should adhere to sterilization method with ETO, FO gas, Steris &Sterrad.

Should have programmable buttons on head.

Following compatible accessories should be supplied with this instrument – Grasping forceps, case for the instrument, Pressure compensation cap, and leakage tester and cleaning brush.

ACCESSORIES

Nitinol Core wire guide with hydrophilic coating and should have the ability of being straight at one end and angled at other endlength 150cm Bi-wire.

Ureteral Access sheath with inner diameter 12/14fr and length of 35cm and 45 cm.

Link Module for use with Flexible Video Endoscope for Image 1 S (Existing Camera system):

- Link Module, for use with Flexible Video Endoscope
- Power Supply 100-120VAC/200-240VAC, 50-60HZ
- To be use with existing Camera System (Image 1 S) connect TC 200 EN.
- Including 300cm mains cord and Link cable length 20cm.

The scope should be compatible to existing camera system in OT.

5(a) :Specification for Flexible Cysto-Nephro-Fibroscope

It should consist of the following:

1. To be used for both office and outpatients clinic.
2. Allows endoscopic monitoring and therapy with pneumatic and laser energy source.
3. Large angle of view and deflectable distal tip for better orientation up to 110 degree.
4. Deflection of distal tip: upward-210 degree and downward- 140 degree.
5. Instrument channel 7 Fr.
6. Waterproof, fullyimmersible for cleaning and disinfection.
7. Sterilizable via EtO and FO gas,Steris and Sterrad.
8. Direction of view should be 0 degree.
9. Working length 37 cm with distal tip diameter of 15.5 Fr.
10. Following accessories are to be included: Case for fiberscope, grasping forceps 5 Fr for small fragments, single action jaws, Biopsyforceps 5Fr with single action jaws length 73cm, Pressure compensation Cap for ventilation during gas sterilization, Leakage tester with bulb and manometer, Cleaning brush 6Fr flexible long for instrument channel.,LUER-adapter,with seal.
11. Stone basket 5Fr length 60 cm consisting of 3-ring Handle, basket and coil.
12. Coagulating Electrode 4Fr length 73 cm.
13. Case for storage of instrument

5 (b) : Flexible Video Cysto-Nephroscope:

Scope should have the latest state of the art CMOS/CCD technology for image transmission for better resolution of image.

Scope should have inbuilt LED light source located at the hand piece of the scope, with no external light cable required for it.

Should be ready to use after direct only one Plug in to (existing) HD Camera Control Unit.

- It should have deflection of distal tip 210°/140°,
- It should have direction of view 0°, angle of view 120°.
- It should have working channel inner diameter 6.5 Fr.
- It should have sheath sizeof 16 Fr.
- It should have working length 37 cm,

- It should be supply with following accessories: -
  - 5 Fr. Grasping Forceps, for small fragments, single action jaws, flexible, length 73 cm
  - 5 Fr. Biopsy Forceps, single action jaws, flexible, length 73 cm
  - Leakage Tester, with bulb and manometer, Pressure Compensation Cap, Cleaning Brush
  - CASE for storage of Instrument

6(a) :Holmium Laser 40 Watt: 38 L

TECHNICAL SPECIFICATION OF HOLMIUM LASERS 40 WATTS :

Desktop Model for use on endoscopic video carts that should have minimum output power of 40 watts or more with Max Energy upto 4 J and frequency : 30 Hz

The unit should have an intelligent touch screen control panel.

The unit should have the security feature for fiber recognition as "RFID based fiber recognition technology".

The unit should at least have at least three different pulse modes like Short pulse, Long Pulse and Burst. Mode or more. The laser unit should have at least six different preset procedures as per stone

composition or soft tissue requirement. The unit should have option to create / program the settings as per

individual requirements.

The unit should be suitable for multispecialty modalities like

a) lithotripsy for different types of Stones in ureter, Bladder, Kidney, Bile duct & Gall bladder

b) Soft Tissue Treatment:

Obstruction of bladder neck, Strictures and stenoses in urinary tract, prostate & bladder

Incision, Ureteroscopicpapillotomy, Laser ureterotomy, Laser urethrotomy, Treatment of UPJ

obstruction, etc.

- The unit should have wavelength of 2080 nm and pulse duration of 90-2000µs.
- It should have pulse energy range between 0.2 to 4.0 Joule and frequency ranges between 4-30 Hz.
- It should have a feature of automatic fiber detection and hence out put of the compatible energy to the laser fiber.
- The unit should be provided with color coded for different sized fibers i.e. 230µm, 365 µm and 600 µm. The aiming beam of fibers should be green in color (<5mW, 532 nm) and its intensity should be adjustable.
- The unit It should be compact and should not weigh more than 35 Kg.
- The system should have an Integrated water-cooling system with water / air heat exchanger, with easy drainage and filling system.

- The unit should have visual indicator to check the coolant quantity inside the unit..The system should be able to run on regular power supply of 240 VAC, 50/60Hz. Manuacturer should be able to provide disposable as well reusable fibers.
- All equipments should be from same make (manufacturer) and should be CE approved.

6 (b): SPECS OF 100 WATT LASER:

TECHNICAL SPECIFICATION OF HOLMIUM LASERS 100WATTS :

- It should be able to Enucleate, Vaporize and Resectcirculated adenoma tissue in BPH treatment of any size.
- It should be able to fragment calculi of any size in the bladder, ureter or kidney and any impacted stone fragment.
- It should be able to do Stone Dusting.
- It should have function of simultaneous fragmentation & suction for PCNL.
- It should be able to ablate superficial bladder tumors, urethral & ureteral tumors.
- It should be able to treat invasive bladder carcinoma &condylomas and lesions of the external genitalia.
- It should have power output of 100watts.
- It should be supplied with a Foot switch with Two foot pedals. Foot pedals should be used for Cut/coag and Fragmentation/Dusting of Stones.
- It should have repetition rate of 5-80Hz.
- It should have Energy per Pulse of 0.2 - 6 Joules.
- It should have adjustable pulse width.
- It should have Greenaiming beam at 532nm, 3 intensity settings.
- It should have a Touch Screen Colour Display and should rotate 360 Degrees.
- It should be able to control migration of moving calculi to minimize retropulsion.
- It should have Fiber & Suction tube support arm.
- It should have Voice Confirmation Indicating System's operational status.
- It should have Four laser Generators.
- It should have a closed loop, self contained water to air exchanger cooling system.
- It should be useable with 200-240 VAC 50/60Hz, <46Amp's Power Supply.
- It should be US FDA Approved.

It should be supplied with following accessories:

- 550 Micron ReusableFlexible Fiber 2
- 365 Micron ReusableFlexible Fiber 2
- 200 micronReusableFlexible Fiber 2
- 550 Micron Side Fire Fiber for Ablation 2
- 550 Micron Stripping and cleaving (set) 1
- 365 Micron Stripping and cleaving (set) 1

- 200 Micron Stripping and cleaving (set) 1
- Fibre Inspection Scope 1
- Scissors 1
- Laser Safety Glasses 2
- Suction Hand piece 4

- **It should have Tissue Morcellator:**

  The Tissue Morcellator should provide rapid endoscopic removal of soft tissue.

Tissue Morcellator should include:

- One control box,
- One Regular hand piece
- One Inverted Hand Piece
- Two blade sets:
  Outer Blade – Outer Dia up to 4mm

  Inner Blade – should be compatible to outer blade
- Two pieces of sterile tubing
- It should have reusable tissue collection kit
- One package each of 3 long cleaning brushes, 3 short cleaning brushes, and 3 endoscope adaptors.

It should have Laser Resectoscope&Morceloscope

* **Laser Resectoscope Continuous flow with Morcelloscope consisting of following**.

* Telescope 30 deg, Autoclavable
* Cystoscope 22-23fr.
* One way Bridge
* Inner sheath
* Outer sheath 26fr.
* Laser working Element
* Laser bridge for End fire and Side fire laser fiber
* Continuous flow Laser Cystoscope for side firing fiber.

➢ **Morcellscope:**

➢ Morcescope6-12° 24-26 Fr parallel eyepiece, working length 250mm.
➢ Capacity 5 mm for auxiliary instruments up to 4.8 mm diameter

Morcellator, Laser resection system and Morcelloscope can be quoted independently.

6(c):TECHNICAL SPECIFICATION OF HOLMIUM LASERS 120 WATTS :

- It should be able to Enucleate, Vaporize and Resectcirculated adenoma tissue in BPH treatment of any size.
- It should be able to fragment calculi of any size in the bladder, ureter or kidney and any impacted stone fragment.
- It should be able to do Stone Dusting.
- It should have function of simultaneous fragmentation & suction for PCNL.

- It should be able to ablate superficial bladder tumors, urethral & ureteral tumors.
- It should be able to treat invasive bladder carcinoma &condylomas and lesions of the external genitalia.
- It should have power output of 120watts.
- It should be supplied with a Foot switch with Two foot pedals. Foot pedals should be used for Cut/coag and Fragmentation/Dusting of Stones.
- It should have repetition rate of 5-80Hz.
- It should have Energy per Pulse of 0.2 - 6 Joules.
- It should have adjustable pulse width.
- It should have Greenaiming beam at 532nm, 3 intensity settings.
- It should have a Touch Screen Colour Display and should rotate 360 Degrees.
- It should be able to control migration of moving calculi to minimize retropulsion.
- It should have Fiber & Suction tube support arm.
- It should have Voice Confirmation Indicating System's operational status.
- It should have Four laser Generators.
- It should have a closed loop, self contained water to air exchanger cooling system.
- It should be useable with 200-240 VAC 50/60Hz, <46Amp's Power Supply.
- It should be US FDA Approved.

  It should be supplied with following accessories:

  - 550 Micron ReusableFlexible Fiber 2
  - 365 Micron ReusableFlexible Fiber 2
  - 200 micronReusableFlexible Fiber 2
  - 550 Micron Side Fire Fiber for Ablation 2
  - 550 Micron Stripping and cleaving (set) 1
  - 365 Micron Stripping and cleaving (set) 1
  - 200 Micron Stripping and cleaving (set) 1
  - Fibre Inspection Scope 1
  - Scissors 1
  - Laser Safety Glasses 2
  - Suction Hand piece 4

- **It should have Tissue Morcellator:**

  The Tissue Morcellator should provide rapid endoscopic removal of soft tissue.

Tissue Morcellator should include:

- One control box,
- One Regular hand piece
- One Inverted Hand Piece
- Two blade sets:
  Outer Blade – Outer Dia up to 4mm

Inner Blade – should be compatible to outer blade

- Two pieces of sterile tubing
- It should have reusable tissue collection kit
- One package each of 3 long cleaning brushes, 3 short cleaning brushes, and 3 endoscope adaptors.

It should have Laser Resectoscope&Morceloscope

* **Laser Resectoscope Continuous flow with Morcelloscope consisting of following**.

* Telescope 30 deg, Autoclavable
* Cystoscope 22-23fr.
* One way Bridge
* Inner sheath
* Outer sheath 26fr.
* Laser working Element
* Laser bridge for End fire and Side fire laser fiber
* Continuous flow Laser Cystoscope for side firing fiber.

➢ **Morcellscope:**

➢ Morcescope6-12° 24-26 Fr parallel eyepiece, working length 250mm.
➢ Capacity 5 mm for auxiliary instruments up to 4.8 mm diameter

Morcellator, Laser resection system and Morcelloscope can be quoted independently.

7(a): SPECIFICATION OF 4K ENDOVISION SET

	4K CAMERA Set	1(One)
1	The system should be Digital endoscopic video camera with maximum Resolution of 3840 X 2160 pixels, progressive scan to guarantee genuine 4K. • The system should have facility of 3x Digital Zoom Lens or more. • The system should have facility for capturing 4K UHD HD Stills and FULL HD Videos in External USB drive. • System should have facility to offer various visualization modes for surgery and diagnosis by shifting the color spectrum like **BLUE & GREEN** light for recognition of the finest tissue Structures and their differentiation. • Picture in Picture of visualization modes. • Automatic adjustment of light intensity of light source. Technical Specifications: Pixels 3840 X 2160 Pixels AGC: Microprocessor controlled Lens: Integrated Zoom Lens f = 18 mm	

	Color Space BT.2020 emulation Control buttons: 3 (2 of them freely programmable). Video output: 1 Display Port1.2 ,1 x DVI-D output, 1 x 12G-SDI output, 3 xcamera input for communication with compatible camera modules, LAN connection, 4 x USB connection (2 x front, 2 x back). Input: Keyboard input for character generator. Power Supply: - 200-240 VAC 50/60 Hz Certified to :IEC 601-1, 601-2-18, CSA 22.2 No. 601, UL 2601 and CE according to MDD, protection class1/cf defib	
	58 Inch 4K Monitor or more	
	The monitor should have: Color Space – BT.2020 emulation Aspect ratio: 16:9 Contrast Ratio :5000:1 Effective Resolution: 3840 X 2160 Pixels Max. observation angle: 178° vertical/horizontal. Inputs: 1 x DP 1.2 ,2XDVI-D , 1X 12G SDI Outputs: 1 x DVI-D , 12GSDI CE label according to MDD, class I.	
	PowerLED with Fiber optic cable	
	• Should have touch display which provides an intuitive & user-friendly interface that directlydisplays relevant data • Cold Light Fountain LED Light Source • Lumens : 2100 and above • Color Temperatures 6000K • Light Outlets – 1 • Lamp life of approx. 30,000 hrs • 4.8mm Fiber Optic Cable and 300cm Long Certified To: - IEC 601-1 & UL 544 CE According to MDD, protection class 1/CF	
	IMAGE/VIDEO RECORDING AND DATA ARCHIVING SYSTEM	
	• State of the art user friendly Medical grade system (certified to be used in OT) should be offered with following features, • User should have full control of the system from the sterile field via camera head buttons, optional touch screen, optional foot switch. • Parallel (synchronic or independent) recording of two image sources. • Still images and videos (optional with audio) in 2D, 3D and 4K. • Internal memory 2 TB • Playback of 2D, 3D and 4K content • System Should be capable for generating the reports and connect with the external printer. • Dicom and HL7 compliant. • WHO certified Safety Checklist incorporated in the system. Type approval: IEC 60601-1-1, EN60601-1, EN60601-2. Classification: CE, MDD, CSA.	

	Imported Endoscopic Trolley	
	Endoscopic Trolley Comaptible with the above system from the same manufacturer should be provided.	
	TELESCOPES	
	Compatible Telescopes with the 4K system should be quoted with Dimensions as below: 1) 10mm 0 Degree & 30 Degree with 30cm or more working Length – Each 2 QTY. 4mm 30 Degree with 18cm working Length – Each 1 QTY	
	All the Above Equipment's are to be supplied by the same manufacturer.	
	ELECTRONIC CO_2Insufflator	30 L
1	CO_2 insufflator high flow (45- 50) LITER (220-240) VOLT with power cord It should have following features:- • Insufflation tube for heating the Co2 gas up to patient body temperature. • pressure up to maximum 15 mmhg and flow range up to maximum 15l/min. •High flow mode with flow performance up to 50 litre/min or more. •Easy and intuitive use with user friendly colour touch screen for easy and precise setting of set values for pressure and flow and of insufflation mode , as well as for clear display of corresponding set values and actual values. •Fully automatic electronically controlled gas refill. •Safety system:- constant monitoring of intra abdominal pressure, any overpressure is reduced immediately. •Electronic control and colour touch screen. •Following data are displayed on touch screen. Power supply 220 VAC 50 Hz Should be supply with; Co2 Regulator, High Pressure tube, co2 filter, insufflation tube	1(one)
	TELESCOPES	
1	High Definition Straightforward Telescope 0 degree dia 10 mm, working length(30-36)cm	2(two)
2	High Definition Forward Oblique Telescope 30 degree,dia 10 mm, working length (30-36)cm	2(two)
3	High Definition Telescope 0° degree ,dia-5 mm working length 30-36 cm)	2(two)
4	High Definitions Telescope 30° degree ,dia-5 mm working length 30-36 cm)	2(two)
	Suction Irrigation unit Compact	

1	It shall be a combination of suction/irrigation pump for use in gynaecological, laparoscopic and Urology interventions. The adaptation to the correct mode of surgery intended should happen automatically and Manually when the correct type of tubing is used. The insertion of pressure lines in to the unit should be simplified for ease of use. The unit should be equipped with electronic, safety circuits that cut the suction/irrigation operation if the unit departs consistently form the present values. **The suction/irrigation unit should have the following features:** •Easy to user bundle controls for the control of all functionalities. •Touch controls and digital displays ensure safe and precise adjustment of the set values. •During power – up, all system go through and automatic self- test and are only released after a positive result •Safety functions that control any departure from operator settings. •Automatic recognition of type of procedure intended, when tubing is inserted. •Audible alarms in case of malfunction. •Suction rate preselect are saved in memory. •Should have a suction mode that automatically maintains irrigation pressure and flow constant. **The suction/ lrrigation unit should have the following technical specifications:** Power Supply voltage : 100-240 VAC Power frequency: 50-60 Hz Operating conditions: $+10^0$c to $+40^0$c Irrigation: Pressure: - Selectable Mode 0.200&0.400 mmHg Flow Rate – Selectable Mode 0-500 &0-1000ml/min Pressure indicator Digital Display Flow indicator Digital Display Certified to IEC 60601.1, CAN/CSA 22.2 No. 601.1-M90: Type of protection against electrical shocks shocks: protection class1 Us FDA/ European CE (Issued by a notified body) approved Model should be offered.	1 (one)
B.	**LAPAROSCOPY HAND INSTRUEMNTS**	
1	Veres needle 120mm including luer lock tube part **OR** Veres needle 150mm including luer lock tube part	1 (one)
2	Trocar Cannula 10-11 mm diameter with thread and rotating insufflations should have multifunctional valve to prevent damage of sharp instruments and tip lens while passing through the cannula valve. It should have stopcock for C02 insufflation. The working length of the cannula should be 100mm	1 (one)
	Trocar Cannula 10- 11 mm diameter: should have multifunctional valve to prevent damage of	1 (one)

	sharp instruments and tip lens while passing through the cannula valve. It should have stopcock for C02 gas. The working length of the cannula should be 100mm	
3	Trocar Cannula 5-5.5 diameter with thread and rotating insufflations. Should have multifunctional valve to prevent damage of sharp instruments and tip lens while passing through the cannula valve. it should have stopcock for C02 insufflation. The working length of the cannula should be 100mm	1 (one))
4	Trocar Cannula 5-5.5 mm diameter: should have multifunctional valve to prevent damage of sharp instruments and tip lens while passing through the cannula valve. It should have stopcock for C02 insufflation. Trocar should have pyramidal tip with pin holes near the tip forsafety outlet of C02 gas. The working length of the cannula should be 100mm	1 (one)
5	Trocar, pyramidal tip, diam. 10 mm working length 100 mm compatible to cannula	1 (one)
6	Trocar with blunt tip, diam. 10 mm working length 100 mm compatible to cannula	1 (one)
7	Trocar, pyramidal tip tip 5 mm ,length 100 mm compatible to cannula	1 (one)
8	Trocar with blunt tip, diam. 5 mm working length 100 mm compatible to cannula	1 (one)
9	Reducer , diam.11,mm to 5,5mm	1 (one)
10	Three piece laparoscopic autoclavable Maryland dissecting and Grasping Forceps. 360 degree rotational sheath, with connector pin for unipolar coagulation size 5 mm. length 33-36 cm double action jaws, with ergonomic plastic handle with larger contact area at the finger ring to avoid pressure sores, can be dismantled with the press of a button.	1 (one)
11	Three piece laparoscopic autramatic autoclavable double window curved Grasping forceps360 degree rotational sheath, size 5mm length 33-36cm. single action jaws ergonomic plastic handle with plastic finger rings with larger contact area at the finger ring to avoid pressure sores can be dismantled with the press of button.	1 (one)
12	Three piece laparoscopic autramatic autoclavable Grasping forceps Debakey 360 degree rotational sheath, size 5mm length 33-36cm. curved double action jaws ergonomic plastic handle with plastic finger rings with larger contact area at the finger ring to avoid pressure sores can be dismantled with the press of button.	1 (one)
13	Three piece laparoscopic autoclavable Bowel Gasping forceps double action jaws, fenestrated, 360 degree rotational sheath, size 5mm length 33-3 6cm. double action jaws, ergonomic plastic handle with plastic finger rings with larger contact area at the finger ring to avoid pressure sores, can be dismantled with the press of a button.	1 (one)
14	Three piece laparoscopic autoclavable Right angled Dissection and GraspingForceps, double action jaws fenestrated, 360 degree rotational sheath, size 5 mm, length 33-36 cm long double action jaws. Ergonomic plastic handle with plastic finger rings with larger contact area at the finger ring to avoid pressure sores, can be dismantled with the press of a button	1 (one)
15	Three piece laparoscopic autoclavable Right angled Dissection and GraspingForceps, double action jaws fenestrated, 360 degree rotational sheath, size 10 mm, length 33-36 cm long double action jaws. Ergonomic plastic handle with plastic finger rings with larger contact area at the finger ring to avoid pressure sores, can be dismantled with the press of a button	1 (one)
16	Three piece laparoscopic autoclavable claw Grasping forceps with ratchet 2x3 teeth, 360 degree rotational sheath size 10mm length 36 cm long single action jaws, with ergonomic plastic handle can be dismantled with the press of a button	1 (one)
17	Three piece automatic laparoscopic autoclavable Babcock Grasping forceps, double action jaws, fenestrated, 360 degree rotational sheath, size 5 mm length 33-36 cm, long double action jaws,	1 (one)

	ergonomic plastic handle with plastic finger rings with larger contact area at the finger ring to avoid pressure sores can be dismantled with the press of a button.	
18	Three piece automatic laparoscopic autoclavable fenestrated Grasping forceps, double action jaws, fenestrated, 360 degree rotational sheath, size 5 mm length 33-36 cm, long double action jaws, ergonomic plastic handle with plastic finger rings with larger contact area at the finger ring to avoid pressure sores can be dismantled with the press of a button.	1 (one)
19	Three piece laparoscopic autoclavable Bowel Gasping forceps double action jaws, fenestrated, 360 degree rotational sheath, size 5mm length 33-36cm double action jaws, ergonomic plastic handle with plastic finger rings with larger contact area at the finger ring to avoid pressure sores, can be dismantled with the press of a button.	1 (one)
20	Three piece laparoscopic autoclavable curved METZENBAUM scissors, 360degree rotational sheath with connector pin for unipolar coagulation m size 5mm length 33-36cm long double action jaws with ergonomic plastic handle with larger contact area at the finger ring to avoid pressure sores can be dismantled with the press of a button	1 (one)
21	Three piece laparoscopic autoclavable Hook scissors, 360 degree rotational sheath, withconnector pin for unipolar coagulation size 5mm length 33-36 cm long double action jaws with ergonomic plastic handle with larger contact area at the finger ring to avoid pressure sores, can be dismantled with the press of a button	1 (one)
22	Three piece laparoscopic atraumatic autoclavable dissecting and Grasping forceps with dolphin nose 360 degree rotational sheath with connector pin for unipolar coagulation size 5 mm length 36 cm, double action jaws, ergonomic plastic handle with larger contact area at the finger ring to avoid pressure sores can be dismantled with the press of a button.	1 (one)
23	Three piece laparoscopic autramaticgrasping forcepsjaw throat with wavy tooth edge 360 degree rotational sheath, with connector pin for unipolar coagulation size 5 mm. length 33-36 cm double action jaws, with ergonomic plastic handle with larger contact area at the finger ring to avoid pressure sores, can be dismantled with the press of a button	1 (one)
24	Three piece laparoscopic autoclavable Maryland bipolar dissecting and Grasping Forceps. 360 degree rotational sheath, with connector pin for unipolar coagulation size 5 mm. length 33-36 cm double action jaws, with ergonomic plastic handle with larger contact area at the finger ring to avoid pressure sores, can be dismantled with the press of a button	1 (one)
25	Three piece laparoscopic autoclavable Universal grasping forceps pyramid shaped and cross cutting toothing 360 degree rotational sheath, with connector pin for unipolar coagulation size 5 mm. length 33-36 cm double action jaws, with ergonomic plastic handle with larger contact area at the finger ring to avoid pressure sores, can be dismantled with the press of a button	1 (one)
26	Grasping forceps atraumatic clamp axial grooves with fine horizonal serrations, double jaw action, (without HF) diameter 5 mm, WL 31-33cm, springy branches, cpl. consisting of: Handle, sheath tube Insert	1 (one)
27	Three piece laparoscopic autoclavable mixter grasping and dissection forceps, angled, fine pyramid shaped tooth, 360 degree rotational sheath, with connector pin for unipolar coagulation size 5 mm. length 33-36 cm double action jaws, with ergonomic plastic handle with larger contact area at the finger ring to avoid pressure sores, can be dismantled with the press of a button	1 (one)
28	Three piece laparoscopic autoclavable spoon forceps, 360 degree rotational sheath, without connector pin for unipolar coagulation size 10 mm. length 33-36 cm double action jaws, with ergonomic plastic handle with larger contact area at the finger ring to avoid pressure sores, can be dismantled with the press of a button	1 (one)
29	Three piece laparoscopic autoclavablegrasping and preparation forceps fine horizontal serrations, fenestrated, 360 degree rotational sheath, with connector pin for unipolar coagulation size 5 mm. length 33-36 cm double action jaws, with ergonomic plastic handle with larger contact area at the finger ring to avoid pressure sores, can be dismantled with the press of a button	1 (one)
30	High frequency monopolar cord	1 (one)

31	High Frequenct bipolar cord	1 (one)
32	L-shaped hook electrode with unipolar HF connection	1 (one)
33	Spatula / Blunt dissector with unipolar HF connection	1 (one)
34	Needle electrode with unipolar HF connection	1 (one)
35	Grasping forceps spoon shaped 10 mm, WL 31-33cm	1 (one)
36	Three piece laparoscopic Bipolar coagulating Grasping Forceps, fenestrated type with overload tissue protection, , wide jaws with connector pin for bipolar coagulation 360degree rotational sheath size 5mm length 36cm long, single action jaws ergonomic plastic handle with larger contact area can be dismantled with the press of a button	1 (one)
37	Three piece laparoscopic Bipolar coagulating Grasping Forceps, dolphin nose with overload tissue protection, , wide jaws with connector pin for bipolar coagulation 360degree rotational sheath size 5mm length 36cm long, single action jaws ergonomic plastic handle with larger contact area can be dismantled with the press of a button	1 (one)
38	Needle holder jaws straight dismantling in to three part namely outer tube handle and inserts, ergonomic pistol handle with disengage able ratchet jaw curved to left size 5mm length 33cm	1 (one)
39	Needle holder with tungsten carbide insert jaws curved to right dismantling in to three part namely outer tube handle and inserts, ergonomic pistol handle with disengageable ratchet jaw curved to left size 5mm length 33cm	1 (one)
40	Macro needle holder with tungsten carbide insert, jaws curved to left dismantling in to three parts namely outer tube handle and inserts, ergonomic pistol handle with disengageable ratchet jaw curved to left size 5mm length 33cm	1 (one)
41	Fascial Closure Instrument for subcutaneous ligature of trocar incisions, size 2.0 mm,	1 (one)
42	Injection & puncture cannula 5 mm ,WL 31-33cm length with luer lock	1 (one)
43	Retrieval of foreign body/stones forceps, 10 mm without ratchet length 31-33cm, dismountable into handle, insert & outer tube	1 (one)
44	Fan shaped retractor-Rotating, 5mm, WL 31-33cm , dismantling facility	1 (one)
45	Suction-irrigation tube,5mm with maintenance-free two-way stopcock, thumb control for irrigation and suction wl 27-29cm	1 (one)
46	Combination suction and irrigation tubewith stop valves,5mm mm 5 mm wl 33 cm	1 (one)
47	Medium Large clip applicator dismantable rotating size 100mm, length 36cm, for Titanium clips with ratchet to lock the jaw holding the clip.	1 (one)
48	Medium Large Hem-O-Lokclip applicator,	1 (one)
49	Extra Large Hem-O-Lokclip applicator,	1 (one)
	All above items should be USFDA/European CE	
50	trolley standard quality	1 (one)
51	Cap Washers- for 5 & 10 mm each for cannula and reducers	50 nos
52	Ring Washers- for 5 & 10 mm each for trocar cannula	50 nos
53	Container System: Metal & Plastic- For Sterilization and storage of telescopes, hand instruments and other accessories, Different sizes, Indian	2(two)
54	Formalin Chamber size : 26” x 8” x 8” (L x B x H) with three tray, Indian	2(two)

55	Suitable autoclavable plastic tray double tray for sterilization, Indian	2(two)
56	UPS 10 KVA, Indian	1 (one)
57	Cleaning Brush, Indian	10 nos
58	Camera Cover, Indian	100 nos
59	Silicon Spray , Indian	25 nos
60	Co2 Cylender 7-9 KG, Indian	2(two)
61	Clips(Hem-O-Lok)	2(Box)
62	LT=300 Clips 300	10(Box)
63	LT=300 Clips 400	5(Box
	ITEM NO 50 TO 63 SHOULD BE INDIAN AND COMPATIBLE TO ALL ABOVE ITEMS	

7(b): 4 K with 3D Endovision System

- **Complete Visualization Tower**

S. No	Specification
1	**Processor**
	• Processor for following should be quoted.: a) 2- Dimensional endoscopic video camera in 4K resolution (3840*2160) b) 3-Dimensional endoscopic video camera in 4K resolution (3840 *2160) c) Slot for Video Scopes (Digital Scopes/Chip on tip) like Video URS, Choledochoscope and GI Scopes. • System should have facility forOptical Contrast Differentiation System, and it Should have special filter for observation of capillary vessels and fine patterns in the superficial layer of mucosa for early detection of lesions. • System Should be capable of Near Infrared fluorescence Imaging (ICG application) with below features: a) Overlay: White light image with superimposed display of NIR/ICG fluorescence. Possible to select the preferred color for NIR/ICG imaging: Either blue or green. b) Monochromatic: NIR/ICG fluorescence signal in white. Background in black for maximum contrast. c) Intensity Map: White light image with superimposed display of NIR/ICG fluorescence. NIR/ICG signal display will appear in different colors depending on the strength of the detected NIR signal. • Picture in Picture of visualization modes with Standard and Optical Contrast Differentiation.

	• Automatic adjustment of light intensity of light source and controlled from Camera head. • Outputs: All Compatible outputs should be there (12GSDI,D.P) for 4K resolution and DVI for HD resolution.
2	**32 and 55 Inch Monitor 1 each**
	ALL in one Medical GradeMonitor capable of displaying: • 3D in 4K resolution • 2D in 4K resolution • 2D in Full HD resolution • 3D in Full HD resolution Should be supplied with 3D glasses – 10 Nos Certified to: ANSI/AAMI ES60601-1:2005, UL 60601-1, CAN/CSA C22.2 NO.60601-1:14 und EN 60601-1. CE label according to MDD, class I.
4	**LED Light sourcewith Fiber optic cable**
	• Should have Lumen >2000 • Lamp life of approx. 30,000 hrs. • 4.8mm Fiber Optic Cable and 300cm Long • Should have touch display which provides an intuitive & user-friendly interface that directlydisplays relevant data • Lamp type: High-performance LEDs, white light LED and near infrared LED, which are active individually or simultaneously. Certified To: - IEC 601-1 & UL 544 CE According to MDD, protection class 1/CF
5	**IMAGE/VIDEO RECORDING,DATA ARCHIVING, SIGNAL MANAGEMENT & STREAMING**
	Recording: ➢ Medical grade documentation unit with CE. ➢ Controllable via Touch screen of size 10" or more. ➢ Capture video & images in 4K, UHD, Full HD, 3D & audio files. ➢ Internal storage of 2TB & more. ➢ Should have minimum of 8 inputs and 8 outputs. ➢ All inputs and outputs should be capable of routing 4K,3D and Full HD signals in native resolution. ➢ USB support for storage on USB drives. ➢ Supports network storage on file servers. ➢ Offer two channel simultaneous recording for still images & videos. ➢ Shall have HL7 connectivity. ➢ Shall have DICOM connectivity. ➢ WHO certified Patient Safety Checklist. Streaming: ➢ Surgical video & image unicast streaming in Full High Definition (1920 X 10290) over local area network to multiple participants. ➢ Offer Bi-directional video transmission & bi-directional audio transmission over LAN. ➢ Streaming picture with telestration and controllable to all participants.
6	**4K Camera Head**

	Technical Specifications: Pixels 3840 X 2160 Pixels AGC: Microprocessor controlled Lens: Integrated Zoom Lens f = 19 mm Color Space BT.2020 emulation Control buttons: 3 (2 of them freely programmable). • **Camera Head Should be able to perform both White light and Near Infrared application.**
7	**TELESCOPES for 2D**
	Telescopes with the 4K system should be quoted with Dimensions as below for White light and Near Infrared application. 2) 10mm 0 Degree &30 Degree with 300cm or moreworking Length – Each 1 QTY. 3) 5MM 0 degree and 30 Degree with 290 cm or more working Length – Each 1 QTY.
8	**Telescopes for 3D in 4K resolution with integrated camera head**
	• 3D imaging via two distal 4K sensors • Camera and Telescopes should be one piece • 10mm 0 degree and 30 degrees (1 each) • Switching of 3D to 2D can be done • Free from Focus and Depth of Field should be 30-200mm • Autoclavable. • Sterilization tray for the scope should be quoted. • **3D Should be able to perform both White light and Near Infrared application.**
9	**50 LitreInsufflator with external heating element with 50 tubes**
10	**High Flow Trocar with HI cap connection to be used with 50 litre Insufflator.**
11	**400 Watt Electro Surgical Unit withSmoke Evacuation system.**
12	**Equipment Cart from Same manufacturer Should be Quoted for all the above Items.**
	All Equipment's Should be Quoted from Same manufacturer.

	Suction Irrigation unit Compact	
1	It shall be a combination of suction/irrigation pump for use in gynaecological, laparoscopic and Urology interventions. The adaptation to the correct mode of surgery intended should happen automatically and Manually when the correct type of tubing is used. The insertion of pressure lines in to the unit should be simplified for ease of use. The unit should be equipped with electronic, safety circuits that cut the suction/irrigation operation if the unit departs consistently form the present values. **The suction/irrigation unit should have the following features:** •Easy to user bundle controls for the control of all functionalities. •Touch controls and digital displays ensure safe and precise adjustment of the set values. •During power – up, all system go through and automatic self- test and are only released after a positive result •Safety functions that control any departure from operator settings. •Automatic recognition of type of procedure intended, when tubing is inserted. •Audible alarms in case of malfunction. •Suction rate preselect are saved in memory. •Should have a suction mode that automatically maintains irrigation pressure and flow constant.	1 (one)

	The suction/ lrrigation unit should have the following technical specifications: Power Supply voltage : 100-240 VAC Power frequency: 50-60 Hz Operating conditions: $+10^0$c to $+40^0$c Irrigation: Pressure: - Selectable Mode 0.200&0.400 mmHg Flow Rate – Selectable Mode 0-500 &0-1000ml/min Pressure indicator Digital Display Flow indicator Digital Display Certified to IEC 60601.1, CAN/CSA 22.2 No. 601.1-M90: Type of protection against electrical shocks shocks: protection class1 Us FDA/ European CE (Issued by a notified body) approved Model should be offered.	
B.	**LAPAROSCOPY HAND INSTRUEMNTS**	
1	Veres needle 120mm including luer lock tube part **OR** Veres needle 150mm including luer lock tube part	1 (one)
2	Trocar Cannula 10-11 mm diameter with thread and rotating insufflations should have multifunctional valve to prevent damage of sharp instruments and tip lens while passing through the cannula valve. It should have stopcock for C02 insufflation. The working length of the cannula should be 100mm	1 (one)
	Trocar Cannula 10- 11 mm diameter: should have multifunctional valve to prevent damage of sharp instruments and tip lens while passing through the cannula valve. It should have stopcock for C02 gas. The working length of the cannula should be 100mm	1 (one)
3	Trocar Cannula 5-5.5 diameter with thread and rotating insufflations. Should have multifunctional valve to prevent damage of sharp instruments and tip lens while passing through the cannula valve. it should have stopcock for C02 insufflation. The working length of the cannula should be 100mm	1 (one))
4	Trocar Cannula 5-5.5 mm diameter: should have multifunctional valve to prevent damage of sharp instruments and tip lens while passing through the cannula valve. It should have stopcock for C02 insufflation. Trocar should have pyramidal tip with pin holes near the tip forsafety outlet of C02 gas. The working length of the cannula should be 100mm	1 (one)
5	Trocar, pyramidal tip, diam. 10 mm working length 100 mm compatible to cannula	1 (one)
6	Trocar with blunt tip, diam. 10 mm working length 100 mm compatible to cannula	1 (one)
7	Trocar, pyramidal tip tip 5 mm ,length 100 mm compatible to cannula	1 (one)
8	Trocar with blunt tip, diam. 5 mm working length 100 mm compatible to cannula	1 (one)
9	Reducer , diam.11,mm to 5,5mm	1 (one)
10	Three piece laparoscopic autoclavable Maryland dissecting and Grasping Forceps. 360 degree rotational sheath, with connector pin for unipolar coagulation size 5 mm. length 33-36 cm double action jaws, with ergonomic plastic handle with larger contact area at the finger ring to avoid pressure sores, can be dismantled with the press of a button.	1 (one)
11	Three piece laparoscopic autramatic autoclavable double window curved Grasping forceps360 degree rotational sheath, size 5mm length 33-36cm. single action jaws ergonomic plastic handle with plastic finger rings with larger contact area at the finger ring to avoid pressure sores can be dismantled with the press of button.	1 (one)
12	Three piece laparoscopic autramatic autoclavable Grasping forceps Debakey360 degree rotational sheath, size 5mm length 33-36cm. curved double action jaws ergonomic plastic handle with plastic finger rings with larger contact area at the finger ring to avoid pressure sores can be dismantled with the press of button.	1 (one)
13	Three piece laparoscopic autoclavable Bowel Gasping forceps double action jaws, fenestrated, 360 degree rotational sheath, size 5mm length 33-3 6cm. double action jaws, ergonomic plastic handle with plastic finger rings with larger contact area at the finger ring to avoid pressure sores,	1 (one)

	can be dismantled with the press of a button.	
14	Three piece laparoscopic autoclavable Right angled Dissection and GraspingForceps, double action jaws fenestrated, 360 degree rotational sheath, size 5 mm, length 33-36 cm long double action jaws. Ergonomic plastic handle with plastic finger rings with larger contact area at the finger ring to avoid pressure sores, can be dismantled with the press of a button	1 (one)
15	Three piece laparoscopic autoclavable Right angled Dissection and GraspingForceps, double action jaws fenestrated, 360 degree rotational sheath, size 10 mm, length 33-36 cm long double action jaws. Ergonomic plastic handle with plastic finger rings with larger contact area at the finger ring to avoid pressure sores, can be dismantled with the press of a button	1 (one)
16	Three piece laparoscopic autoclavable claw Grasping forceps with ratchet 2x3 teeth, 360 degree rotational sheath size 10mm length 36 cm long single action jaws, with ergonomic plastic handle can be dismantled with the press of a button	1 (one)
17	Three piece automatic laparoscopic autoclavable Babcock Grasping forceps, double action jaws, fenestrated, 360 degree rotational sheath, size 5 mm length 33-36 cm, long double action jaws, ergonomic plastic handle with plastic finger rings with larger contact area at the finger ring to avoid pressure sores can be dismantled with the press of a button.	1 (one)
18	Three piece automatic laparoscopic autoclavable fenestrated Grasping forceps, double action jaws, fenestrated, 360 degree rotational sheath, size 5 mm length 33-36 cm, long double action jaws, ergonomic plastic handle with plastic finger rings with larger contact area at the finger ring to avoid pressure sores can be dismantled with the press of a button.	1 (one)
19	Three piece laparoscopic autoclavable Bowel Gasping forceps double action jaws, fenestrated, 360 degree rotational sheath, size 5mm length 33-36cm double action jaws, ergonomic plastic handle with plastic finger rings with larger contact area at the finger ring to avoid pressure sores, can be dismantled with the press of a button.	1 (one)
20	Three piece laparoscopic autoclavable curved METZENBAUM scissors, 360degree rotational sheath with connector pin for unipolar coagulation m size 5mm length 33-36cm long double action jaws with ergonomic plastic handle with larger contact area at the finger ring to avoid pressure sores can be dismantled with the press of a button	1 (one)
21	Three piece laparoscopic autoclavable Hook scissors, 360 degree rotational sheath, withconnector pin for unipolar coagulation size 5mm length 33-36 cm long double action jaws with ergonomic plastic handle with larger contact area at the finger ring to avoid pressure sores, can be dismantled with the press of a button	1 (one)
22	Three piece laparoscopic autramatic autoclavable dissecting and Grasping forceps with dolphin nose 360 degree rotational sheath with connector pin for unipolar coagulation size 5 mm length 36 cm, double action jaws, ergonomic plastic handle with larger contact area at the finger ring to avoid pressure sores can be dismantled with the press of a button.	1 (one)
23	Three piece laparoscopic autramaticgraspingforcepsjaw throat with wavy tooth edge 360 degree rotational sheath, with connector pin for unipolar coagulation size 5 mm. length 33-36 cm double action jaws, with ergonomic plastic handle with larger contact area at the finger ring to avoid pressure sores, can be dismantled with the press of a button	1 (one)
24	Three piece laparoscopic autoclavable Maryland bipolar dissecting and Grasping Forceps. 360 degree rotational sheath, with connector pin for unipolar coagulation size 5 mm. length 33-36 cm double action jaws, with ergonomic plastic handle with larger contact area at the finger ring to avoid pressure sores, can be dismantled with the press of a button	1 (one)
25	Three piece laparoscopic autoclavable Universal grasping forceps pyramid shaped and cross cutting toothing 360 degree rotational sheath, with connector pin for unipolar coagulation size 5 mm. length 33-36 cm double action jaws, with ergonomic plastic handle with larger contact area at the finger ring to avoid pressure sores, can be dismantled with the press of a button	1 (one)
26	Grasping forceps atraumatic clamp axial grooves with fine horizonal serrations, double jaw action, (without HF) diameter 5 mm, WL 31-33cm, springy branches, cpl. consisting of: Handle,	1 (one)

	sheath tube Insert	
27	Three piece laparoscopic autoclavable mixter grasping and dissection forceps, angled, fine pyramid shaped tooth, 360 degree rotational sheath, with connector pin for unipolar coagulation size 5 mm. length 33-36 cm double action jaws, with ergonomic plastic handle with larger contact area at the finger ring to avoid pressure sores, can be dismantled with the press of a button	1 (one)
28	Three piece laparoscopic autoclavable spoon forceps, 360 degree rotational sheath, without connector pin for unipolar coagulation size 10 mm. length 33-36 cm double action jaws, with ergonomic plastic handle with larger contact area at the finger ring to avoid pressure sores, can be dismantled with the press of a button	1 (one)
29	Three piece laparoscopic autoclavablegrasping and preparation forceps fine horizontal serrations, fenestrated, 360 degree rotational sheath, with connector pin for unipolar coagulation size 5 mm. length 33-36 cm double action jaws, with ergonomic plastic handle with larger contact area at the finger ring to avoid pressure sores, can be dismantled with the press of a button	1 (one)
30	High frequency monopolar cord	1 (one)
31	High Frequenct bipolar cord	1 (one)
32	L-shaped hook electrode with unipolar HF connection	1 (one)
33	Spatula / Blunt dissector with unipolar HF connection	1 (one)
34	Needle electrode with unipolar HF connection	1 (one)
35	Grasping forceps spoon shaped 10 mm, WL 31-33cm	1 (one)
36	Three piece laparoscopic Bipolar coagulating Grasping Forceps, fenestrated type with overload tissue protection, , wide jaws with connector pin for bipolar coagulation 360degree rotational sheath size 5mm length 36cm long, single action jaws ergonomic plastic handle with larger contact area can be dismantled with the press of a button	1 (one)
37	Three piece laparoscopic Bipolar coagulating Grasping Forceps, dolphin nose with overload tissue protection, , wide jaws with connector pin for bipolar coagulation 360degree rotational sheath size 5mm length 36cm long, single action jaws ergonomic plastic handle with larger contact area can be dismantled with the press of a button	1 (one)
38	Needle holder jaws straight dismantling in to three part namely outer tube handle and inserts, ergonomic pistol handle with disengage able ratchet jaw curved to left size 5mm length 33cm	1 (one)
39	Needle holder with tungsten carbide insert jaws curved to right dismantling in to three part namely outer tube handle and inserts, ergonomic pistol handle with disengageable ratchet jaw curved to left size 5mm length 33cm	1 (one)
40	Macro needle holder with tungsten carbide insert, jaws curved to left dismantling in to three parts namely outer tube handle and inserts, ergonomic pistol handle with disengageable ratchet jaw curved to left size 5mm length 33cm	1 (one)
41	Fascial Closure Instrument for subcutaneous ligature of trocar incisions, size 2.0 mm,	1 (one)
42	Injection & puncture cannula 5 mm ,WL 31-33cm length with luer lock	1 (one)
43	Retrieval of foreign body/stones forceps, 10 mm without ratchet length 31-33cm, dismountable into handle, insert & outer tube	1 (one)
44	Fan shaped retractor-Rotating, 5mm, WL 31-33cm , dismantling facility	1 (one)
45	Suction-irrigation tube,5mm with maintenance-free two-way stopcock, thumb control for irrigation and suction wl 27-29cm	1 (one)
46	Combination suction and irrigation tubewith stop valves,5mm mm 5 mm wl 33 cm	1 (one)

47	Medium Large clip applicator dismantable rotating size 100mm, length 36cm, for Titanium clips with ratchet to lock the jaw holding the clip.	1 (one)
48	Medium Large Hem-O-Lokclip applicator,	1 (one)
49	Extra Large Hem-O-Lokclip applicator,	1 (one)
	All above items should be USFDA/European CE	
50	trolley standard quality	1 (one)
51	Cap Washers- for 5 & 10 mm each for cannula and reducers	50 nos
52	Ring Washers- for 5 & 10 mm each for trocar cannula	50 nos
53	Container System: Metal & Plastic- For Sterilization and storage of telescopes, hand instruments and other accessories, Different sizes, Indian	2(two)
54	Formalin Chamber size : 26" x 8" x 8" (L x B x H) with three tray, Indian	2(two)
55	Suitable autoclavable plastic tray double tray for sterilization, Indian	2(two)
56	UPS 10 KVA, Indian	1 (one)
57	Cleaning Brush, Indian	10 nos
58	Camera Cover, Indian	100 nos
59	Silicon Spray , Indian	25 nos
60	Co2 Cylender 7-9 KG, Indian	2(two)
61	Clips(Hem-O-Lok)	2(Box)
62	LT=300 Clips 300	10(Box)
63	LT=300 Clips 400	5(Box
	ITEM NO 50 TO 63 SHOULD BE INDIAN AND COMPATIBLE TO ALL ABOVE ITEMS	

8: Urodynamics

Advance Urodynamic Equipment with following specifications:

Technical Specification of Advance Integrated Video Urodynamic System

1. The system should have the facility to perform Uroflowmetry, Cytometer, Pressure Flow Studies, EMG Studies , EMG Biofeedback & Video Urodynamic studies
2. System should be fully upgradable with Technical advances in future
3. Should have minimum 5-8 Configurable channels and should be able to display upto at least 10 channels. Should have 3 regular channel & two spare channel for profile applications like UPP & Anorectal manometry.
4. Should be able to attach 3 Pressure Transducers, Radio frequency / Bluetooth based weight flow channel. Colour coded labels and cable (Vesicle, Abdominal and Urethral channels). Should have auto 80-100 mm Hg

test/calibration button for checking the transducers. Fitted to bracket/clamp. Transducer should be reusable having pressure range(-50-350 mm Hg)

5. Should have Automatic Air Pump for profile applications like UPP & ARM. Should have integrated infusion Censor / Infusion transducer to check correct infused volume.
6. Should have infusion volume up to 2000 ml and software based calibration control. And should measure infusion volume through infusion Sensor / Infusion transducer and not through rotation of pump.
7. Should have infusion pump 4 roller or more, software control (start/stop & speed selection) Cystometry: Filling and Voiding
   - Integrated filling pump and volume sensor
   - Infusion pump speed: flow speed 1ml/ minute - 100 ml/minute or more
   - Compliance and pressure volume plot
   - ICS, Schaffer and Abrams-Griffiths pressure flow Nomo grams
8. Should have facility to attach 2 Uroflow transducers. Should be supplies with one wired and wireless RF/Bluetooth/JIGBEE/XBEE Based Weight uroflow transducer with flow range of 0-50ml/sec, volume range up to 2000ml. Must have auto record and zero facility for Uroflowmeter. Should have auto artifact detection. It should be supplied with height adjustable commode chair one and height adjustable uroflow stand one. Should be supplied with security cover for Flow transducers to protect from water spillage.
9. Should be supplied with 1 channel wireless EMG, should be compatible with surface electrodes, needle electrodes. Should have Raw & Average EMG with sound. Should have facility to adjust sound, gain & Threshold.
10. The system should be supplied with imported trolley to fit the complete UDS along with PC having waterproof keyboard & touch pad . Should be supplied with 22-26" LED colour flat monitor for display mounted on a trolley. Should be adjustable in height and angle. Console should be completely inside the trolley to protect from water spillage.
11. Should have all in one PC with optical mouse, microphone & Speaker for EMG. Should be supplied with UPS of suitable rating for minimum 10Minute back up. Computer should run on Windows 10 or latest having 8GM RAM and 512 GB SSD / HDD with 1 TB External HDD & 1GB Graphic Card. Should be supplied with Color Laser Printer & UPS of suitable ratings with Minimum 30 Min back up.
12. Should be supplied with height adjustable micturition chair with folding arm rest for Urodynamic Studies.
13. Should be supplied with Micturition stand-voiding studies, height adjustable, removable funnel
14. Should be supplied with EMG biofeedback software with Wireless EMG module for pelvic floor training. Should have ICS standard games,
15. Should be supplied with 3D bladder scanner for calculation of post void residual. Should be US FDA or European CE approved with 4 digit Certified body
16. Should be supplied with Digital Videourodynamic software for doing Video Urodynamic studies. Should be able to capture images & make small videos & can be synchronized with Urodynamic traces

17. System should be supplied Three motors carbon fiber top C-ARM compatible Chair for Top to Toe imaging. Versatile eight positioning , Controlled with remote to do Video Urodynamic studies in Sitting, Supine & Standing position. Should allow patient to remain in one place for preparation , filling and voiding phase. Avoid risk of catheters falling out or getting misplaced during transfer or ambulation. Should have attachments for Uroflow & funnel. Should have Arm rest, foot rest , Leg rest & Cushion. Should have four double wheel rolling caster to offer unencumbered manoeuvrability. Weight capacity upto 250 Kg in standing position. Should be IPX6 rated for ' Protection against water incursion'. Should be European CE/EC with 4 digit or US FDA approval.

18. Optional items - Prices to be quoted separately for following & will be freezed for 5 years.

    i) 4 Channel Anorectal Manometry

    ii) Ambulatory Urodynamics with reusable catheter having Live streaming facility and Leak Point detection

    iii) Near Infrared spectroscopy (NIRS) to establish co-relation with Uds Findings during foiding Cystometry

    iv) 9 Channel Oesophageal Manometry. Should be supplied with Urodynamic software with following facility

    v) UPP Puller with stand & software for doing Urethra pressure profilometry

- Windows platform, unlimited number of templates
- Standards and terminology as according to the ICS (International Continence society) monograms, PURR, Paediatric, Siroky, Abrams-Griffiths
- Connectivity to Hospital information system and DICOM work-list & DICOM storage
- Event markers-user Colorable toolbars, and event markers (icons and/or text)
- Technology for Data recovery even when studies have not been save.
- Real time data processing and on-line storage
- Back up manually or automatically to any location
- Intelligent patient search
- System should be operational on windows 10 or Latest
- Should have 8GB RAM & 512GB SSD or 1TB HDD.
- Water proof Key board with optical mouse and DVD/CD re-writable drive.
- 1-18 Points for test setting as per customer choice
- Report in MS Word or in PDF Format
- Post procedure editing in Word format of report
- Playback facility of test after the procedure

19. Should be supplied with following:

- Dual Lumen Catheter for Cytometer 7/ 8 Fr. – 30 No
- Dual Lumen Catheter for Cystometry 5/6 Fr. – 10 Nos
- Pigtail Catheter, PVC, 5/6Fr and bladder filling – 10 Nos
- Dual Lumen Abdominal Rectal Balloon catheter for Cystometry – 50 Nos
- Pump Tubing – 50 Nos
- Collection Beaker – 10 Nos

- Reusable pressure Transducer – 5 Nos
- EMG patch Electrodes – 200 Pcs
- Connection/ Measurement Tubings – 50Nos
- Domes for reusable pressure transducers – 25Nos

20. The Urodynamic System should have US FDA / European CE with digit certified body approval.
21. Bidder should have experience of Establishing Video Urodynamic Lab at least at two premier institutes in India in last three Years & supply order copy with performance to be attached
22. System Should be supplied with 5 years warranty.
23. Firm should quote rates for CMC for 5 years after warranty period.
24. Firm should quote rates of all consumables/spares/accessories & will be freezed for 5 years.

9(a): Ballistic Lithoclast

1) It should be light weight, compact and easy to operate.
2) The generator pneumatic energy should be integrated in the same machine.
3) Pneumatic energy should have :-
    i) Repetition rate from 1 to 12 Hz.
    ii) Display of number of pulse and it should be able to withstand the pressure from 3.5 to 5 bars.
    iii) It should be possible to regulate repetition rate.
    iv) It should be connectable to pneumatic external source of compressed air in the event of malfunction of pneumatic generator.
    v) Should be supplied with ergonomic foot paddle control.
    vi) It should have the facility to connect to the hospital compressed air supply.
4) Compressed air supply source should have :-
    i) Noiseless junction air compressor.
    ii) Compressor cover.
5) The hand piece control unit of the equipment should meet the following criteria:-
    i) Hand pieces should be compatible for gas, gluteraldehyde sterilization or for autoclaving.
    ii) The probe and hand piece should have simultaneous suction facility.
    iii) It should have the facility to connect the existing hospital wall suction or stand alone suction.
    iv) The probe and hand pieces should be suitable for use with endoscope for all manufacturers.
6) Foot switch:- the unit should be supplied with ergonomic foot paddle control.
7) The unit should be opertable at 220-230V at 50 Hz.

Essential Accessories

1) Ballistic probe:-
    i) 0.8 mm diameter for use with long ureteroscope .- qty 1 numbers.
    ii) 0.8 mm diameter for use with short ureteroscope .- qty 1 numbers.
    iii) 1.6 mm diameter for use with long ureteroscope .- qty 1 numbers.

iv) 2 mm diameter for use with nephrosope .- qty 1numbers.

2) Lithovac adapter for ureteroscope. Qty 1 numbers
3) Lithoclast adapter for ureteroscope. Qty 1 numbers
4) Lithovac suction tube for PCNL 12 Fr diameter. Qty 1 numbers
5) Lithovac suction tube for URS 4.8 Fr diameter.Qty 1 numbers

Term and Conditions

- The unit should be supplied with minimum warranty period of 60 months of satisfactory installation.
- The warranty must cover each and every part of the unit.
- The unit should meet the international safety standard for human use (CE/USFDA).
- The supplier should quote the CMC for 5 years beyond the warranty.

9 (b): Ultrasonic and Ballistic Lithoclast.

1. **Should have a generator for both ultrasound and pneumatic (ballistic) Lithotripsy integrated in the same machine**
2. **It should be possible to deliver these energies by separate probes and Handpieces**
3. **It should be possible to integrate both probes into the same hand piece so that both ultrasound and pneumatic energies can be delivered simultaneously to the stone.**
4. **The Probe and Handpieces should have simultaneous suction facilities.**
5. **The suction should be connectable to existing hospital wall suction or stand alone suction units.**
6. **There should be a container for collecting stone fragments.**
7. **There should be a facility to allow cooling of the probe during use of ultrasonic energy**
8. **The unit should be supplied with a variety of probes in sizes that are suitable for use with the entire available range of nephroscopes and ureteroscopes of all sizes and length. The probes and Handpieces should be suitable for scopes from all manufactures.**
9. **The unit should be supplied with an ergonomic foot pedal control that allows separate or concurrent use of both energies.**
10. **In the event of malfunction of the pneumatic generator of the machine it should be connectable to an external source of compressed air / gas.**
11. **It should be possible to finely regulate the energy / power of both energies.**
12. **It should be possible to regulate the repetition rate of the pneumatic Lithotripter.**
13. **The probes and Handpieces should be sterilizable by liquid, gas and autoclaving.**
14. **Should be supplied with the following accessories**

1. Ultrasound Hand Piece -1 No.

2. Pneumatic Handpiece-1No.

3 Probe for Pneumatic handpiece 0.8 mm,1.0mm, 1.6mm, 2.0mm- 1 each

4. Pneumatic probe for use with Ultrasonic handpiece 1mm-1 no.

5. Probe for Ultrasound handpiece-5 no.

10:Technical Specification for Ultrasonic Cutting & Coagulation and Integrated Advance Bipolar for 7mm Vessel Sealing:

The Unit should have following features:

- System should be able to deliver the Ultrasonic energy combined with Advance Bipolar HF energy.
- System should be equipped with advance RF energy technology that can simultaneously seal and transect vessels up to and including 7mm, large tissue pedicles and vascular bundles.
- System should have automatic instrument recognition and automatic application of default settings for ease of use.
- System should be compatible with open surgery and laparoscopic surgery.
- System should have a touch screen display for fast and easy setup operations and onscreen diagnostics.
- System should have the integrated facility with the same generator to deliver the other energy modality like Monopolar, bipolar, advance bipolar and saline bipolar resection energy both for open as well as Endoscopic surgery. If it is not integrated in the same generator, a separate energy generator for monopolar, bipolar, advance bipolar and saline resection for BPH management should be provided with the main machine with foot switch.
- System should be provided with transducer or transducers to connect open surgery hand-piece and laparoscopic surgery hand-piece.
- System should have auto-clavable transducer.
- System should not have auto switch off mechanism.
- System should have standby mode to ensure safety.
- System should come equipped with system diagnostics and troubleshooting guide to pin point any problems in the systems.
- System should have feature for on screen warning display for overheating, hand-piece error, instruments error etc.
- System should be able to power advance RF energy and ultrasonic energy instruments of 5mm shaft diameter for the laparoscopic procedures and should be both hand & foot activated with the working length between 10 cm to 45 cm
- System should be provided with a cart for transportation and storage.
- System should provide Class1 protection against electric shock.
- The device should be US FDA approved and European CE certified.

- **Device should be supplied with following instrumentations:**

1. Generators for Ultrasonic and advanced HF Energy with Foot Switch's.
2. Cart for Thunderbeat
3. Communication Cable
4. Auto-clavable Transducer with cable
5. Shears/probes for laparoscopic surgery (5 pcs)
6. Shears/probes for open surgery (5pcs)
7. 26 Fr sheath for bipolar enucleation of prostate with working element and autoclavable 30^0 and 12^0 cystoscopes along with required accessories like loops and cord.

11:Technical Specification for Electro Hydraulic Operation Table

Operation theatre table :

1. Product should be of international quality and US FDA & CE approved certified ISO 13485:2003 certified.
2. The five section table top should X-Ray translucent for fluoroscopy with c-arm with radiolucent mattress and facility to load X-Ray cassettes to the table. There should be no metal frame across especially between back and seat section.
3. With remote control the following positions should be possible.
    a. Table up and down
    b. Table top longitudinal sliding both cranially and caudially. The total sliding should be atleast 300 mm or better
    c. Side tilt / lateral left and right.
    d. Trendlenburg and Reverse Trendlenburg.
    e. Back section up and down.
    f. Flex / Reflex positioning should be pre-programmed and therefore should be achievable by press of a single button.
    g. Powered Floors lock and unlock with manual emergency release.
    h. Auto levelling
4. Radiolucent five section table top in head section, back section, seat section with perineal cut and split leg section.
5. Should have manual Kidney bridge of 120mm or more
6. Should have Inbuilt Battery backup as standard and about 80-100 operations should be possible during power failure.
7. Should have Inbuilt override control at the base fixed in the centre column for all movements in case of remote failure.
8. All metal components of the table should make of aluminium or stainless steel SUS304 with atleast two antistatic heavy duty castors.
9. Should have accessory rails on both sides to hold various accessories.
10. Should be suitable for patient load proof at least 180 kgs
11. Should have an auxillarycontrol on the table with all controls as in the hand controller
12. Self compensating floor locking device.
13. The mattress should be a pressure management pad mattress with at least80 mm thicknesses.
14. Safety
    a. IEC 60601-1:- Medical electrical equipment-Part 1: General requirement for basic safety and essential. Perforation-Edition 3.1;
    b. IEC 60601-2-46:- Medical electrical equipment-Part 2-46: Particular requirements for the basic safety and Essential Performance-Collateral Standard: Usability-Edition 2.0 IEC 60601-1-6: Medical Electrical Equipment-Part 1-6: General Requirements for Basic Safety and Essential Performance-Collateral Standard Usability-Edition 2.0

Technical data :

- Height adjustment minimum should be 720 mm or less and maximum 1030 mm
- Side Tilt 20 degree or more
- Back section adjustment 80deg up and 40 degree down or more.
- Leg section adjustment 15 deg up and 90 degreedown or more.
- Trendlenburg adjustment atleast 26 degree.
- Extendable head rest 60 deg up and 90 deg down.
- Tabletop Width (w/o Side Rails) should be more than 500mm.
- The table length should be atleast 1900mm or more
- Powered longitudinal sliding – 300mm or more, should be possible both head side & leg side.

Listed standard accessories should be given

- Aneasthesia screen frame
- Body Strap
- Lateral support
- Leg crutches
- Raised arm rest with clamps-1 pair
- Foot rest with side rail clamp-1 pair.
- Urology Drain Dray Set
- Contamination bucket

Group-D: Haematology

1: FLOW CYTOMETER

Specification for Benchtop Multicolor upgradable flow cytometer

1. System should be a Bench-top flow cytometer with 3 solid state lasers (Blue 488 nm, Red 638-640 nm and Violet 405-407 nm) with 10 or more colors with 2 scatter detection (forward and side scatter) configuration expandable up to 12 colors and 14 parameters.
2. All fluorescence channels and side scatter detection channel must incorporate Photomultiplier Tubes (PMTs).
3. Sample carry over should be less than equal to 0.1%.
4. System must work on hydrodynamic focusing technology.
5. All lasers and their excitation-optics should be fixed aligned.
6. System should have capability to acquire at least 20,000 events or more per second.
7. The system should provide atleast sensitivity: <110 MESF-FITC, <80 MESF PE.
8. Automated QC :System should have automated quality control procedures, and automatically output reports to provide comprehensive information about the instrument (delay laser, laser power, channel gain, mean fluorescence intensity and rCV value, etc.), to protect your daily results and reliable and stability, and draw Levey-Jenning quality control chart, the entire instrument status monitoring.
9. Automated Maintenance: System should be capable of doing automated maintenance by doing individual tube vortex, daily clean, deep clean. Syringe having inner and outer wall automatic cleaning function, reduce cross-contamination. Automatic maintenance procedure: automatic standby/ initialization, automatic boot process, row bubble, recoil, automatic shutdown procedurs.
10. Automatic intelligentsoftware: user-friendly, intuitive and easy to learn, with automaticadjustment of various parameters, greatly improving your working efficiency
11. The system should be able to do automated compensation calculation, single fluorochrome addition and inter-beam compensation.
12. System should be US FDA-IVD/European CE-IVD certified for clinical applications.
13. System should be capable of accepting IVD certified -Dry Reagents, Wet Reagents, Cocktails, and Individual Color Antibodies.
14. System should have automated start up and shutdown procedures. Software should support acquisition of 5 million or more events per tube enabling rare event detection/MRD analysis.
15. System should be capable to record and save Area, Height and Width signals for every parameter simultaneously along with time parameter and should have simultaneous threshold on all available parameters.
16. The system should be in a single tube acquisition format & upgradable in future to universal plate and tube loader platform.
17. Suitable workstation should be supplied for online analysis along with Machine.
18. Suitable Online UPS with 1 hour back, Color laser Printer and 24" Monitor should be included.
19. Latest model should be quoted.
20. Comprehensive Warranty with parts and accessories for 5 years and without parts and accessories for the next five years.

21. The company should supply all the start up reagents, including at least 10 antibodies attached to different fluorochromes, free of cost.
22. The company should provide onsite full application training for doctors and technicians free of charge.
23. The company should shift the complete instrumental set up and reinstall from one campus to another campus, free of cost, as and when required.
24. The price of antibodies (leukemia panel, lymphoma panel, myeloma panel, PNH panel), caliberation beads, set up beads and buffers supplied by the company as per catalogue should be fixed for the next 5 years.

2: SPECIFICATIONS OF HPLC

· Automated, Integrated system, dedicated to HbA1c, Thalassaemia and hemoglobinopathy testing and screening based on HPLCtechnology.

· The system should be able to screen and quantitate hemoglobinsHb A2, Hb A, Hb F and HbA1c and detect the most commonly occurring abnormal hemoglobins like Hb S, Hb D, Hb E, Hb C, Hb Q-India and other rare abnormalhemoglobins.

· Complete ready to use kit should be provided with Buffers in transparent plastic tanks to view the level of buffers ; columns, primers, calibrators & samplevials.

· It should have a faster throughput of <7 minutes persample.

· The system should work on Windows 7 or higher Operatingsystem.

· The system should have color touch screen display and inbuilt DVD Drive to update kit parameters – calibrator values, integration parameter, lot number, expiry details of reagentetc.

· It should have facility for exporting results to USB Drive for back up data archiveof atleast 10000results.

· It should have an offline CD-ROM which should be a searchable database with approximately 800 chromatograms of fully classified abnormal hemoglobins and thalassemias.

· The system should have in-kit external standards for instrument calibration ensuring accurate quantitation ofresults.

· The system should contain Low pulsation dual piston pump with programmable solvent delivery system.

· The system should have a bi-directionalLIS.

· The system should have a feature of rack & sample position identification to avoid error in case of bad/fault barcodereading.

· The system should have a visible alarm system for low buffer in the mobile phase reservoirs, low level value for cartridge injections and overflow for the waste tank, as well as built in alarms for calibrationfailure.

· The system should be capable of positive sample identification using a Barcode reader.

· The system should have the facility of primary tube sampling and direct dilution of the samples without manualintervention.

· It should have an inbuilt system check facility which checks that all the system parameters (eg, cartridge, buffer, reagent, waste etc) are ready before the sample analysis.

· The system should have a dual program mode to perform either HbA1c or HbA2/Hb F/HbA1c without changing any reagents orcolumns.

· The system should not require changing of reagents while switching from HbA1c to HbA2/Hb F/HbA1c testing mode.

· The system should be able to detect correct A1c values in presence of abnormal hemoglobin variants like HbD, HbE, HbS&HbC

· Assay time should not be more than 3 minutes for HbA1c testing and 6.5 minutes for A2/F/A1ctesting.

· The System should be NGSP (National GlycohemoglobinStandardisationProgram) Certified and traceable to IFCC referencemethod.

· The system should offer both NGSP & IFCC value reporting on the same patient report, control & calibratorreport.

· It should be able to print a hard copy report giving identification and information on the subtype and quantity of hemoglobins detected. It should have the facility to view current and stored chromatograms & should enable storage ofchromatograms.

· It should have an 80GB hard disk and a remote data access feature when connected to LAN orIntranet.

· The company should be able to provide normal and abnormal controls for Hb A2, Hb F and Hb S and provide quality control program to help compare results with similar users worldwide.

· The company should have external quality assurance service (EQAS) for hemoglobin variants

· The company should have minimum of 100 installations inIndia

· The system should have a software for real time viewing of the analysis of the sample.

· The System should be both CE & FDAapproved.

· The company should have offline library of chromatograms for resultinterpretation

· The system should have optional feature to load atleast 50 samples simultaneously with continuous loading facility.

· The company should have optional feature of capillary collection kit for remote sample collection with sample stability at 2-8 C for 14days.

· Latest model should be quoted.

· Comprehensive Warranty with parts and accessories for 5 years and without parts and accessories for the next five years.
· The company should supply all the start up reagents free of cost.
· The company should provide onsite full application training for doctors and technicians free of charge.
· The company should shift the complete instrumental set up and reinstall from one campus to another campus, free of cost, as and when required.
· The price of reagents, buffers and caliberators supplied by the company as per catalogue should be fixed for the next 5 years.

3:Specification for fully automated Capillary Electrophoresis system

1. The system should be multi-parametric instrument to perform Hb A1c,Hb, Serum protein, Serum protein immuno typing and CDT.
2. The System should be able to Perform Hb Electrophoresis and Hb A1cusing standard primary Tubes.
3. The System should be able to Cap Piercing capacity for Hb and Hb A1c samplesimproved workflow and Operator safety.
4. The system should be fully automated electrophoresis system based on Capillaryelectrophoresis with TWO simultaneous migrations with complete walk awaytechnology including migration and quantitation.
5. The system should use TWO silica capillaries and electrophoresis in liquid flow.
6. The system should use deuterium lamp with optical fibers for emission andreception.
7. The system should accept all types of samples (sample cups or primary tubes) with barcode reader.
8. The system should have automatic loading and un-loading of reagent cups.
9 The system should have the capacity to load up to 27 samples for Hb, Hb A1c, serum protein and CDT
10. The system should perform direct analysis on EDTA blood for Hb / Hb A1c electrophoresis.
11. The system have red cell hemolysate preparation is automatically performed on the instrument for Hb electrophoresis & Hb A1c
12. The system should not use any staining procedures and should not use any densitometre for Quantification.
13. Software should be provided for automatic curve analysis with long-term storage capacity for results.
14. The system should have automatic sample dilution for Immuno typing (Standard mode, hypogamma mode and Hypergamma mode)
13. Software should be provided for automatic curve analysis with long-term storage capacity for results.
14. The system should have Quality control set up and levy Jennings graph
15. The system software should allow the operator to take patient report in PDF format
16. The system software should allow the operator to view pathological samples
17. The system should have LIS capability
18. The through put of the system should be
• Hemoglobin – 8 samples /hour
• Hb A1c – 8 samples /hour
• Protein – 20 samples/hour
• Immuno typing – 2 samples/hour
CDT (carbo hydrate deficient transferrin) – 10 samples/hour

· 4:DECA-HEAD MICROSCOPE

· SPECIFICATION FOR DECA HEAD MICROSCOPE WITH IMAGING FACILIITY

.
.

· **MICROSCOPE BODY:**

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

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

· **TRINOCULAR TUBE:**
· **Field No. 25mm** or better, Three **position prism Trinocular tube**, 100% light for viewing, 20% - 80% viewing & photography, 100% light for photography.
· **EYEPEICE:**
· Paired eyepiece 10X magnification with Wide Field **F.N 25mm** or better, Focusable / diopter adjustment +/- 5 on both eyepiece or Better.

- **NOSEPIECE:** Interchangeable reversed turret type of 7 position nosepiece.
- **STAGE:**
- Hard Coated Ceramic surface, anti-corrosive and anti-friction mechanical stage with right-hand low drive control with individual torque adjustment for X and Y axis. Should have two slide holder clips and stage should have upper limit stopper feature to avoid damage the slide/ objective lens. Stage rotation of 270 degrees with stage lock and stage tension management .

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

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

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

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

.

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

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

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

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

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

- **Microscope should be upgradable in motorized feature, 130 watt mercury fluorescence attachment and DIC application as required.**
- Microscope, optics, camera and software should be from same manufacturer for better compatibility & upgradability

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

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

5:Aggregometry Specification

1- Instrument should have open system.
2- Display should be Liquid Crystal Display (LCD)
3- Instrument should have Light Transmission Aggregometry (LTA) principle
4- should use of Infrared wavelength to reduce interferences due to Haemolysed, Icteric or Lipemic samples (HIL)
5- Easy setup of 0% (PRP) and 100% (PPP) aggregation levels
6- Complete panel of results available in 10 minutes
7- Most of the reagent have stability of 1 month at -20 C.
8- Should have minimum 8 incubation channel
9- Should have 16 incubation wells
10- Should results get in PDF format.
11- Embedded software with intuitive graphical user interface
12- Should able to do Arachidonic Acid, ADP, Collagen, Epinephrine, TRAP-6, Ristocetin
13- Assay volume should be min 250ul and max 500ul.
14- Should have bench top model
15- H 120 mm x W 394 mm x D 360 mm
16- Power Supply: - 100-240 V
17- UPS: - 3KVA
18- Operating Temp: - 19-30°c
19- Weight: - 10 kg
20- There should be provision for demonstration before final approval of the equipment.

21- Latest model should be quoted.
22- Comprehensive Warranty with parts and accessories for 5 years and without parts and accessories for the next five years.
23- The company should supply all the start up reagents, free of cost.
24- The company should provide onsite full application training for doctors and technicians free of charge.
25- The company should shift the complete instrumental set up and reinstall from one campus to another campus, free of cost, as and when required.
26- The price of reagents, buffers and caliberators supplied by the company as per catalogue should be fixed for the next 5 years.

6 :Real Time PCR Specification

- Complete system including basic system, essential accessories, the state-of-art computer workstation, acquisition and analysis software, startup kit inclusive of calibration standards etc.
- One system to accommodate Taqman, SYBR green, all other fluorescent dye based chemistries and should have separate filter option for High Resolution Melt Curve analysis.
- Rotor based to accommodate upto 100 sample.
- Standard optical 0.2 ml & 0.1ml strips& tubes compatibility.
- Min sample volume requirement is 10 µl.
- Should have ramping rate of 15-20^{0}C/Sec or more
- PMT detector with LED and five excitation and emission filters.
- Multiplexing ability five dyes or more in a single run.

- Calibrated dyes at installation: FAM/SYBR Green, VIC/JOE, NED/TAMRA/Cy3, ROX/Texas Red, and Cy5 should offer flexibility in dye selection.
- Facility to calibrate new dye within the wavelength range without addition of new filters.
- Passive reference dye ROX or any other calibrated dye and should be optional.
- Option for High resolution melt curve analysis with both hardware & software features.
- Temperature range ambient to 100^0C Uniformity must be less than ± 0.02^0C
- Sensitivity: Detection of 1 copy of template.
- Software applications: Comparative Ct, Standard Curve, Relative Standard Curve, Allelic Discrimination/ SNP Genotyping, Plus/Minus, Dissociation/ Melt curve and High-resolution melt curve.
- System should come with unlimited user license for software (including HRM software).
- Power: 220V/50Hz. All accessories CE mark or equivalent.
- PC with preinstalled original compatible software should come for smooth and proper running of the equipment. Software should have multiple license to use with other system as well.
- Warranty: minimum 2 years.

Group-E:Physiology

1:Specification of 4 channels digital EMG, NCV, EP system

The System hardware should consist of:-

- System should be 4 channels EMG, NCV & EP system with individual touch proof & DIN connectors.
- System should be European CE Or USFDA approved and meet international safety standards like IEC and Class IIb.
- The amplifier should have USB powered and enabling the amplifier to be connected to any PC/Laptop and transfer data through same USB.
- There must be 1 trigger IN/OUT socket to connect stimulators of third-party firms.
- The system should be supplied with Headphone for AEP, LED Goggle & 15" Pattern simulator for VEP
- The system should have wireless control panel for easy operation.
- The equipment shall incorporate features like full optical isolation and confirm to international standards with certification authorities.

(EMG) 4 Channels Specification

- Common mode input impedance > 200 Mohms
- Sampling Rate- 40-KHz-160KHz
- A/D converter – 16 bits
- High pass Filter from 0.02 Hz to 3 KHz
- Low pass Filter from 10 Hz - 10 KHz
- CMRR > 100 dB
- Noise Level (RMS) < 0.5 µV
- Notch filter ; 50Hz, 60Hz on or off
- Electric stimulus duration should be 0.05 to 5 mS, Electric stimulus amplitude should be 1 to 100 mA and Electrics stimulus frequency: 0.1 to 100 Hz in Repetitive stimulation.

❖ EMG/NCV/EP Software should have:-

- Motor NCV with automatic marking
- Sensory NCV with automatic marking
- Motor and Sensory inching
- Tremor analysis
- Motor conduction collision and sensory conduction collision should be included.
- F wave with spilt screen display with automatic marking of F response showing the Max F, Min F and F block values.

- H Reflex , Blink Reflex, Sacral Reflex, Bulbocavernous Reflex, T Reflex, Galvanic Skin Response
- Repetitive Stimulation 36
- Insertional/ Spontaneous EMG recording for unlimited duration on hard disk for 10 minutes buffer storage.
- Quantitative EMG test features must be included
- EMG replay for stored EMG data from hard disk with audio
- Multiple Motor unit Analysis
- Single Motor unit Analysis
- Jitter analysis for single fiber and stimulated single fiber test must be included
- Incremental MUNE
- MUNE (MUP Decomposition)
- Macro EMG
- Short – middle- and long-latency auditory EP
- Short – and long-latency somatosensory EP
- Auditory stimulation with clicks and tones.
- Visual evoked potentials : Pattern reversal, appearance, disappearance VEP (with Fully, quarterly & half- quarterly), Flash VEP, Goggle VEP
- Should have MRCP, P300,CNV,MMN
- Automatic rapid report generation with unlimited user templates
- Facility of comparing patient data with normative data & to flag abnormal values automatically
- Report generation to be customizable and in MS word format
- Must be operating on Windows 7, Windows 8 or Windows 10
- Should have Microsoft SQL-server, MDB, and My's -sql-server database software
- Facility of including the waveform & numerical data as per user requirement in patient report
- Provision for hard copy output of recordings on a laser printer of 600 dpi resolution
- Dedicated control panel can function via Bluetooth or USB interface.
- Possibility to connect a Magnetic stimulator and able to perform the research test protocols like CMCT, Triple stimulation, silent period, |H| etc.
- Possibility to upgrade it to ERG (Electroretinograpghy) studies.

Set of EMG electrodes to be supplied along with system:-

- Surface electrode – 1 pair
- Stimulating bar electrode with replaceable steel and felt stimulation pads-1 no.
- Ring electrode -1 pair
- Ground electrode with cable (paediatric)
- Ground electrode with cable (adult)
- Disposable concentric needle electrode-25 pcs.
- Adapter for needle electrode connection-1no.
- Disposable surface electrode (set of 100 pcs.)
- Adapter for disposable electrodes connection with Alligator clip (20cm) – 2 pcs
- Gold plated cup electrode -10 pcs.
- Jumper Electrode (Pup-jack linker) -4 pcs

Set of stimulators to be supplied along with system:-

- Electrical Handheld stimulator
  37
- Visual stimulator (LED goggles)
- 17" TFT monitor for VEP
- Auditory stimulator (Headphones)

The system should be supplied with:

- (Branded Desktop) Intel Core i3 processor with 4GB RAM, network card multimedia speakers, mouse, keyboard, minimum 500GB hard disk for storing

- Laser Printer (B/W)
- Movable trolley
- Operating Manuals and user manual

Safety and Electromagnetic Compatibility:-

- System should be European CE Or USFDA approved and meet international safety standards like IEC and Class IIb
- Electromagnetic compatibility (EMC) is provided by IEC 60601-1-2:2007 requirements Fulfillment.
- The digital system is intended for operation in electromagnetic environment As for safety, the digital system satisfies IEC 60601-1:1988+A1:1991+A2:1995, IEC 60601-1-1:2000 and IEC 60601-2-40:1998 requirements.
- The electronic unit is supplied by regular power supply through USB interface it has double isolation and BF type work parts according to IEC 60601-1.

2:Specification of Video EEG with Polysomnographic System

The system hardware should consist of:-

- System should have at least 32 EEG channels with 9 Polysomnographic channels including built-in Spo2.
- The amplifier should have USB powered and enabling the amplifier to be connected to any PC/Laptop and transfer date through same USB for portability.
- Should be supplied along with Video Camera (2MP, IR, PTZ Network Camera)
- The system should consist of LED Photic stimulator for EEG
- The equipment shall incorporate features like full optical isolation and confirm to international standards with certification authorities.
- Should have facility to check electrode impedance from the head box through LED indicator (Red, Green & Yellow) of corresponding electrode impedance.
- System should be USFDA and European CE approved and meet international safety standards like IEC and Class IIb.

EEG channels specification:

- Common mode input impedance >400Mohm
- Sampling Rate -2 KHz (2000 Hz)
- A/D convertor -16 bits
- Band pass Filter -0.16 to 200 Hz
- CMRR >120 dB
- Noise Level (RMS)< 0.25 µV
- Sensitivity 0.01- 12000 µV/mm with user definable steps

The System EEG software should consist of-

- Should have NET based software for comprehensive database search &storage
- Any electrode can be used as a reference one and the bipolar derivations can be recoded without placing any other additional reference electrodes, for example ear ones.
- Provision for marking events along with VEEG recordings using Keyboard/ mouse.
- Complete programmable control of montage selection, acquisition Sensitivity, filter settings photic stimulator sequences etc.
- Should have inbuilt facility in the same software of automatic spike and seizure detection software.
- Software should have facilities of Amplitude analysis, Spectral analysis, Coherent analysis and many more in 2D & 3D view. And also should have multiple EEG trends windows option simultaneously with live EEG recording.
- Photic stimulator with LED's.
- A high resolution 21" color monitor for display of waveforms
- Provision for hard copy output of recordings on a laser printer of 600 dpi resolution.
- Should have facility for User definable events and preferred recording and review settings such as amplifier set-ups, event palettes and views to be saved as specific user protocols.
- Should have provision for notch filter.
- Must be operating on windows 7 and window 8.
- Should have option to save EEG as a video clip (*avi), ASCll-text file (*txt), XML file (*xml) set of graphical files (*bmp or emf) or in EDF + format (*edf).

- Should have facility to check electrode impedance from the head box through LED indicator (Red, Green & Yellow) of corresponding electrode impedance.
- DVD writer for recording the VEEG data.
- Facility for exporting data using the software for review on any PC without any additional software

3: Autonomic Function Lab

Technical Specification
The system should be able to record and analyses

- Non- Invasive continuous beat to beat blood pressure monitoring for minimum five minutes or more in human with Systolic. Diastolic and other hemodynamic parameters (CO, SV, SVR, PPV, Blood pressure Variability etc) by double finger arterial pressure measurement.
- It should have inbuilt auto calibration process by using the brachial artery via oscillometric way.
- It should able to switch between two fingers automatically or as per user define time.
- Wireless monitoring EMG(RMS, Integrated EMG), EEG(alpha, beta, theta, delta, gamma), pulses GSR, temperature (surface temperature changes).hand dynamometer, and foot pressure (for static posturography)
- Hand dynamometer to study handgrip strength profile with heel & toe pressure measurement for static posturography studies while walking.
- Continuous 12 lead ECG monitoring and recording for minimum five minutes or more with real time HRV analysis by time based or frequency based method.
- Simultaneous recording for at least 12 and more parameters with ethernet connectivity.
- ADC resolution: 16 bits
- The continuous beat to beat blood pressure monitor should be supplies with finger cuffs of three different sizes (small, medium, large) with all other cuff and necessary cables.
- Transducer for pulse plethysmography, EMG, GSR probe, respiration, surface temperature probe, foot pressure probe and wireless heart rate & HRV kit with at least thousand sampling rate or more with real/logger data recording on the same screen and other accessories as required.
- Software : It should have various automatic analysis modules for ECG (detects & classification of heart beats, ECG complex boundaries, interval extraction , HRV Poincare plot.),HRV Blood pressure ,cardiac output ,peak analysis, histogram, fast furrier transformation ,derived phasic GSR for tonic ,event related GSR analysis and Respiration etc.
- The software should be provided with a 5 year of free updates and upgrades.
- Computers core i7 Genuine windows 10, 20'' LED Monitor, 4GB RAM, 500GB hard Drive, facility for internet, connectivity, Laser printer with UPS with 20 minutes backup for whole system required.
- Proper demonstration to be carried out before finalizing.
- Onsite training should be provided by the company expert for 7-10 days.
- Warranty 2 years.
- Documentations: CE, ISO, and other safety certificates must be provided.
- The system should have worldwide installation. acceptance and recognition in published research papers globally. Performance certificate should be provided from the users using the system in India/ abroad.

4: Advanced PFT LAB

1. BODY BOX – PLETHYSMOGRAPH

   Body Plethysmography System with facilities to measure the following Parameters:

   1. Spirometry including bronchial challenge test
   2. Thoracic gas volumes (DLCO single breath dilution)

3. Airway Resistance and conductance
4. Single Breath Diffusion Capacity of Lungs (DLCO-sb) with Helium (He) or CH4
5. Intra Breath Diffusion
6. Maximum inspiratory and expiratory pressures (MIP & MEP), PO.1 and Rocc/Rint.
7. It should be provided with Forced oscillatory system
8. Integrated Dosimeter for bronchial Challenge testing should have predefined multistep protocol to use with a single drug concentration
9. The body box should be standard Aluminum/Acrylic with an internal volume of minimum 700 Liters. It should be transparent with visibility from inside as well as from outside, operable from both sides, equipped with intercom. It should be compatible to use with wheel chair
10. Should have a ultrasonic or pneumotach spirometer with range, linearity, resistance and accuracy meeting or exceeding American Thoracic Socity-European Respiratory Society standards
11. Resistance/conductance studies by both panting and tidal breathing, Software should allow manual fitting of slope to the data
12. Dosimeter/Aerosol generation system controlled by software for challenge Test.
13. Gas analysers should meet the American Thoracic Society-European Respiratory Society standards for stability, linearity, response time and accuracy.
14. Calibration and test gases: Gas mixtures for calibration and 500 tests; Cylinders should be supplied with double stage pressure regulators
15. Should be supplied complete with Calibration Syringe, Trolley, Software, Manual and Standard Accessories, Pulmonary Filters (1000 Nos); reusable mouth pieces (500), paper mouthpieces adult (1000) and paediatric (500), nose clips (20), and adaptors for mouth pieces; Two sets of cylinders each of helium/CH4 and diffusion gas mixtures will be provided.
16. Should be supplied with compatible branded computer – Intel Core i7, 3.1 GHz, 8 Gb RAM, 21 "TFT Colour Monitor, CDR/W-DVD Drive, Keyboard, Mouse, Hard Disc Drive (1Tb SATA) USB Ports, Windows 7/8, Mobile Cart for control unit, PC Also UPS 1 KVA with battery back-up
17. Multifunction colour laser printer with copier, scanner with airprint, eprint, automatic document feeder, automatic dual side printing and inbuilt modem.
18. Should have US-FDA & European CE certification.
19. Facility to customize report output.
20. Facility for saving patient data, measured curves and calculated parameters, with quick retrieval from the database.
21. Shall meet IEC-60601-1-2:2001 (Or Equivalent BIS) General Requirements of safety for Electromagnetic Compatibility. or should comply with 89/366/EEC;EMC directive
22. It should work on Power 220 V 50Hz AC.

2. Forced Oscillatory System

It should be able to measure airway resistance through Forced Oscillatory technique at various frequencies from 5Hz to 40 Hz.

1. The unit should be small, portable, suitable for online testing through computer.
2. The unit should incorporate Ultrasonic or pneumotach sensor with no moving parts, which should preferably be auto Cleavable for preventing cross contamination.
3. The unit should have proven spirometery software with automatic test quality control as per ERS standards and trending.
4. The unit should incorporate a hygienic drying fan to remove aerosolized droplets though filter for better efficiency (if needed).
5. The unit should have spirometry Software with children incentive, challenge test, tidal breathing, single breath as well as closed circuit spirometry.
6. The unit should measure the following parameters' VC, FVC, FEV.5, FEV.5%, FEV1, FEV1/VC%, FEV1/FVC%, FEV/PEF, FEV3, PEF, FEF25-75, FEF25-75%, FEF25%, FEF50%, FEF 75%, FMFT, FET, MVVind, FIVC, FIVC/FVC%, PIF, FIF 25%, FIF50%, etc.
7. It should have automatic BTPS correction.
8. The print out should be configurable with choice of curves, parameters printed, interpretations and quality control messages.
9. The unit should be compliant to all standard like ATS, ERS, European CE marked (or FDA Certified).
10. The unit should be supplied along with a Laptop of standard make (HP/Del/Compaq/Lenovo/Sony) –with i7 processor, 8 GB RAM, at least 15" TFT Screen, USB Ports, CD R/W, Hard Disc Drive 1TB, Operating system windows 8 and HP Laser Jet Printer, Computer Interfacing Cables and Software etc.
11. The system should be supplied with 500 bacterial Viral Filters and 5000 disposable Cardboard Mouthpieces as part of the std, accessories.
12. Warranty for five years and later on CMC should be for five years.
13. Training will be provided to minimum two technicians and two doctors of pulmonary medicine department.

3. Portable system for Standardized six Minute Walk Test

1. The system should be light weight, stand alone with built in Display
2. It should be able to perform real-time testing of Standardized Six Minute Walk Test with measurement of VE, Rf, HR and SpO2 during walking.
3. It should also be able to perform screening spirometry test including FVC (Pre-post), MVV, SVC, Respiratory pattern, Broncho-challenge test as per ATS/ERS standards.
4. It should have internal memory of at least 300 tests.
5. It should allow manual entry of pre-test and post-test parameters (Dyspnea & fatigue measured on Borg scale, blood pressure, distance walked, etc.)
6. It should have facility to download tests to the computer and also to perform real time spirometry testing on a computer directly, APC desktop/note book of latest configuration may be quoted optionally.
7. BTPS Correction: Automatic by means of in-built Temperature Sensor.
8. Power Supply: Should be able to operate from mains and rechargeable batteries.
9. Flow meter: Should be digital Bi-directional Turbine with a flow range of 0.08 to 16L/s, volume range 12L, Accuracy FV:+3%

10. Interface: It should have USB interface for connection to a PC.
11. Software: Software compatible for Windows Vista/7 (32bit) should be supplied with the equipment.
12. Essential accessories / consumables : In addition to the standard set of accessories the system should be supplied with :a) Disposable mouthpieces -1000pcs., b) Nose clips -20pcs., c)3 litre calibration syringe. D) Silicon Face Mask Adult large and small 01 no each.
13. Training will be provided to minimum two technicians and two doctors of pulmonary medicine department.
14. Warranty should be for 5 years and CMC for next 5 years.
15. It should be US – FDA approved or European CE approved.

4. **Forced expiratory NO system**

1. Breath nitric oxide test system is intended to measure fractional exhaled nitric oxide (FeNo).
2. Able to measure exhales NO in range 5-300 ppb (parts per billion).
3. Should have electrochemical sensor principle to detect NO.
4. Long sensor life upto 2 years sensor life should be time dependent and not on number of tests.
5. Should have sensitivity and reproducibility of 5ppb.
6. Should be able to use for adults and pediatrics. Breath test time should be around: Adult 12 seconds/ Child 10 seconds.
7. It should be portable battery operated instrument with weight approx 400g including batteries.
8. Able to measure Exhaled No without use of expensive No free air generator.
9. Touch screen operation with built in colour Graphical display.
10. The life of the machine should not be test dependent.
11. It should come with the trainer kit for the patient to practice their technique before taking a test to get the optimum result.
12. It should come with eye level flow indicator to make the patients keeping a constant flow during the exhalation easy for even young children.
13. Should have USB connectivity for computer attachment.
14. The unit should be supplied along with a Laptop of standard make (HP/Del/Compaq/Lenovo/Sony)- with i7 processor, 8GB RAM, at least 15" TFT Screen, USB ports, CD R/W, Hard Disc Drive 1 TB, Operating system windows 10 and HP Laser Jet Printer, Computer interfacing cables and software etc.

Nasal High Flow humidifier System

1. The system should have an inbuilt heated humidifier with advanced algorithms for delivery of optimal humidity.
2. It should have inspiratory tubing with inbuilt spiral heater wire for superior condensate control in varying environments.
3. The tubing should be light weight and flexible and be able to deliver flows from 2 to 25 liters (for pediatrics) & 10 to 60 liters (for adults)
4. It should have auto-fill humidification chamber with a dual float mechanism System.
5. The System should have inbuilt Fio2 monitoring device to deliver the Fio2 from 21% to 100%
6. The System should be able to deliver Flow from 2-25 liters (for pediatrics) & 10-60 liters (for Adults)
7. The System should have High & Low alarms for Oxygen

8. The system should have nasal cannula available in different sizes.
9. The system should have inbuilt disinfection mode to disinfection the internal blower of the machine to prevent cross infection.
10. It should have integrated motor/turbine to deliver air flows from 2-60 liters.
11. Suitable for use in NICU, PICU, ICU, RICU, HDU, Post off and wards
12. All items should comply with the international safety regulation and certification-US FDA.
13. Each system will come with 5 sets of tubings and nasal cannula.
14. Warranty for five years and CMC for next five years.

****