

### Corrigendum – 3 (Bid Reference No.: WBMSCL/NIT-41/2015)

**Planning, Design and Construction of 01 (One) Tertiary Healthcare Hospital along with Supply of Medical Equipments and Hospital Furniture in the State of West Bengal on Turnkey Basis**

Sl no	Section no. & Clause no.	Existing Clause/Provision	Changed Clause/Provision
1	General Notes		<b>N.B.:-</b> Throughout the document where the clause each of the packages” or “more than one package” or “single package” appears, it should be considered as “ <b>single work without any package</b> ”.
2	Section-2 My document format or Non-statutory cover	<ol style="list-style-type: none"> <li>1. Income Tax Clearance Certificate along with.....for Assessment Year 2013-2014</li> <li>2. P.T. (Deposit Challan) for Assessment Year 2013-2014</li> <li>4. VAT Registration Certificate.....Assessment Year 2013-2014</li> </ol>	<ol style="list-style-type: none"> <li>1. Income Tax Clearance Certificate along with.....for <b>Financial Year 2014-2015</b></li> <li>2. P.T. (Deposit Challan) for <b>Financial Year 2014-2015</b></li> <li>4. VAT Registration Certificate.... ..... <b>Financial Year 2014-2015</b></li> </ol>
3	Section-2 My document format or Non-statutory cover (Financial Info)	P/L Balance Sheet 2011-2012 P/L Balance Sheet 2012-2013 P/L Balance Sheet 2013-2014	P/L Balance Sheet <b>2012-2013</b> P/L Balance Sheet <b>2013-2014</b> P/L Balance Sheet <b>2014-2015</b>
3	Section-3 Clause 2.5	Equipment The bidder.....comprising of 6-site .....	Equipment The bidder.....comprising of <b>1</b> -site .....
	Section-4 Form 3	Name of Contract : .....Construction of 6 (Six) Tertiary.....	Name of Contract : .....Construction of <b>1 (one)</b> Tertiary.....
4	Section-4 Form 3 clause (d)	Our bid shall valid for a period of 120 days.....	Our bid shall valid for a period of <b>180</b> days.....
5	Section-4 Form 5	Bank Certificate	Bank Certificate

Sl no .	Section no. & Clause no.	Existing Clause/Provision	Changed Clause/Provision
		If the contract.....of 6(six) Tertiary.....	If the contract.....of <b>1(one)</b> Tertiary.....
6	Section 5.5	1.Introduction to the project West Bengal.....execute construction of 6-Super Speciality Hospital.....	1.Introduction to the project West Bengal.....execute construction of <b>1-Super Speciality</b> Hospital.....
7	Section 5.5 Introduction to the Project Clause 3.A.	Site Plan Site Plans for 06 different location .....	Site Plan Site Plans for <b>01 location</b> .....
8	Section-8 page no 9	Form of Performance Security Bank Guarantee .....and Construction of 6 (six) Tertiary.....	Form of Performance Security Bank Guarantee .....and Construction of <b>1 (one)</b> Tertiary.....
9	Section 5.6 Clause 6.B Specification of L.T. Cables and Wire		<b>c) If required Bus Duct /Bus Risers are considered copper only.</b>
10	Section 5.6 General Clause 4.0 Illumination	Generally the light fixtures shall be with high frequency electronic ballast and energy efficient fluorescent (T5) / compact fluorescent lamps with daylight or warm daylight ambience and decorative GLS / CFL / MH / LED fittings in the special areas taking into account the aesthetic part as well. a)Offices, doctor's room, small halls, dispensaries, laboratories etc. shall be provided with surface..... g) Entrance / corridor / lobby etc. shall be provided with circular / square type CFL / fluorescent fittings.	Generally the light fixtures shall <b>be LED fittings in all area.</b>  N.B.:- <b>a), b), c), d), e), f), g) in all of this clauses light fittings should be only LED type excluding service shaft area.</b>

Sl no .	Section no. & Clause no.	Existing Clause/Provision	Changed Clause/Provision
11	Section 5.6 Clause 16 SPECIFICATION OF SIGNAGE; Sub clause 16.1.1 General Specifications		<b>e) Digital signage should have to be provided in some special areas as per site condition.</b>
12	Section 5.6 Clause 12 Surveillance Closed Circuit Television (CCTV) System Specification	DOME CAMERA: Analog type Vandal Resistant Dome camera  EXTERNAL CAMERA : Vandal resistant Analog type external camera	DOME CAMERA: <b>Digital type IP based camera</b>  EXTERNAL CAMERA: <b>Digital type IP based camera</b>
13	Section 5.6 General Clause 17 CLOSED CIRCUIT TELEVISION SYSTEM (CCTV)	The security system proposed for Common area is very minimum amount in the following form: Closed Circuit TV System (CCTV) ..... ..... Analog DVR based CCTV camera system that shall give monitoring team flexibility in viewing the images from multiple locations. Care shall be taken to ensure that the number of displays per screen is limited so that “individuals” can be recognized when viewing the display in all areas.	The security system proposed for Common area is very minimum amount in the following form: Closed Circuit TV System (CCTV) ..... <b>Digital IP based CCTV</b> camera system that shall give monitoring team flexibility in viewing the images from multiple locations. Care shall be taken to ensure that the number of displays per screen is limited so that “individuals” can be recognized when viewing the display in all areas.

Sl no .	Section no. & Clause no.	Existing Clause/Provision	Changed Clause/Provision
14	Section 5.6 Clause 14 Specification for Nurse call system		<b>We are considering IP based Digital Type Nurse Call System</b>
15	Section 5.6 Clause 23 List of Approved Make Sl no. 83	Fibre /Cat6 cables : Molex/TYCO/R&M	Fibre / <b>Cat6e</b> cables : Molex/TYCO/R&M/ <b>Schneider</b>
16	Section 5.6 Clause 8 Specification For Wiring ; Sub Clause 8.2 Equipment and fittings	<p>b. Decorative fittings: Both single and twin tube assemblies Philips make or equivalent T5 fluorescent fittings shall be of standard fittings made out of cold-drawn sheet steel, stove enameled, the box finished in gray colour and its cover plates in white colour, complete with electronics chokes and other fixtures such a holder, lamps and build wired etc as required.</p> <p>.....</p> <p>...</p> <p>e. Street/Compound Light (TFL) Fittings: The fittings shall be SON 70 Watt /150Watt/250 Watt or weatherproof type fluorescent street light fittings. The fittings shall be made of Aluminium sheet and finished outside in hammer tone gray colour, stove enameled and white inside, complete with copper wire chokes, starters condensers, suitable lamp holders, lamps, assembled and wired neatly and provided with clear acrylic molded cover held by spring loaded hooks against sponge rubber gaskets to make the whole unit dust, vermin and waterproof.</p>	<p>Generally the light fixtures shall <b>be LED fittings in all area.</b></p> <p><b>N.B.:- b), c), d), e) &amp; j) in all of this clauses light fittings should be only LED type excluding service shaft area.</b></p>

Sl no	Section no. & Clause no.	Existing Clause/Provision	Changed Clause/Provision
		j. Installation of Fluorescent light fitting: In case of suspension from ceiling by two rods, each fixing to the ceiling shall be capable at sustaining at least 1.1 Kg. of dead weight. The down rods and accessories shall be painted with approved paint without involving extra cost. Unless otherwise specified, this should be suspended 2.60 M (8'-6") above floors.	
17	Section 5.5 Clause 14 List of Approved Makes/Vendors Sl no. 4	Parryware./Prestige/Kingstone	Parryware/Prestige/Kingstone/ <b>Nilkamal</b>
18	Section 5.5 Clause 14 List of Approved Makes/Vendors Sl no. 10	Godrej/Shaktimet/Navaire	Godrej/Shaktimet/Navaire/ <b>Ahuramazda/Tufwud/Tripti</b>
19	Section 5.5 Clause 14 List of Approved Makes/Vendors Sl no. 36	Greenply /Century /Kitply /Novopan/ Greenply/Sylvan	Greenply /Century /Sylvan
20	Section 5.5 Clause	Commander/Diplomat/Admiral	<b>Parryware/Cera /Hindware</b>

<b>Sl no</b>	<b>Section no. &amp; Clause no.</b>	<b>Existing Clause/Provision</b>	<b>Changed Clause/Provision</b>
	14 List of Approved Makes/Vendors Sl no. 34		
21	Section 5.5 Clause 14 List of Approved Makes/Vendors Sl no. 48	CICO, FOSROC, SIKA	CICO, FOSROC, SIKA, <b>PEDILITE</b>
22	Section 5.5 Clause 14 List of Approved Makes/Vendors Sl no. 40	Bal Adhesives & Grouts,"ROFFE" Rainbow Tile Mate, Silicon Sealnet of GE Bayer Silicon/"Zentrival FM" of MC- Bauchemie (India) P Ltd	Bal Adhesives & Grouts, <b>Pedilite</b> , Silicon Sealnet of GE Bayer Silicon/"Zentrival FM" of MC- Bauchemie (India) P Ltd
23	Section 5.5 Clause 14 List of Approved Makes/Vendors Sl no. 9	'KIT- Ply' brand or equivalent but equivalency is subject to approval of WBMSCL	<b>Greenply /Sylvan/Tufwud</b>
24	Section 5.5 Clause 14 List of Approved Makes/Vendors Sl no. 19	Showcem India, ICI, Nerolac	<b>Snowcem India, ICI, Berger,Akzo Nobel</b>
25	Section 5.5 Clause 14	Atul / Modifloat/Saint Gobain/Golden Fish	Modifloat/Saint Gobain/Golden Fish

Sl no .	Section no. & Clause no.	Existing Clause/Provision	Changed Clause/Provision
	List of Approved Makes/Vendors Sl no. 54		
26	Section 5.5 Clause 14 List of Approved Makes/Vendors Sl no. 52	KK/SK Precast Concrete/ Advent concreteovision/ Daya Concrete	KK/SK Precast Concrete/ Advent concreteovision
27	Section 5.5 Clause 14 List of Approved Makes/Vendors Sl no. 61	UniStone Products (India) Pvt. Ltd/Hidustan Tiles.	UniStone Products (India) Pvt. Ltd/Hidustan Tiles/ <b>Ultra/Johnson Endura</b>
28	Section 5.5 Clause 14 List of Approved Makes/Vendors Sl no. 32	Jaguar/Essess/CERA/Parryware	Jaguar/Essess/CERA/Parryware/ <b>Hindware</b>
29	Section 5.5 Clause 14 List of Approved Makes/Vendors Sl no. 48	CICO, FOSROC, SIKA	CICO, FOSROC, SIKA, <b>CHRYSO –Swc, Choksey Chemical</b>

Sl no	Section no. & Clause no.	Existing Clause/Provision	Changed Clause/Provision					
			Sl. No.	Materials	Manufacturers / Agencies			
30	Section 5.5 Clause 14 List of Approved Makes/Vendors		63	AAC Block	BILTECH /ICON/KONCRETE			
			64	Block jointing thin set adhesive	Ultratech/SIKA/ACC			
			xvii. All external and internal walls should be done by AAC blocks, to be laid with AAC block jointing thin set mortar in 2-3 mm thickness (adhesive).					
31	Section 5.5 Clause 5 Design Requirements for Building & Services <b>General Standers</b>							
32	Section 5.5 Clause 16 Mandatory Laboratory Test for civil construction at site (Indicative only)		Material	Test	Relevant IS- Code of Testing	Field laboratory test	Minimum quantity of material work for carrying out test	Frequency of Testing
			AAC Block	a.Dimensions	IS 2185 (Part 3) : 1984	Field/Laboratory	As per IS	As per IS
				b.Density	IS 6441 :1972	Laboratory	As per IS	As per IS
				c.Compressive Strength	IS 6441 :1972	Laboratory	As per IS	As per IS
				d.Water absorption	IS 6441 :1972	Laboratory	As per IS	As per IS
				e.Fire Resistance Test	IS 6441 :1972	Laboratory	As per IS	As per IS



Sl no .	Section no. & Clause no.	Existing Clause/Provision	Changed Clause/Provision
33	Section 5.5 Clause 4 Scope of Work & Sub clause C Construction of Service Facilities Along With Associated Infrastructure	9. All approach roads & pathways inside premises of super specialty hospital	9. All approach roads & pathways inside premises of super specialty hospital <b>should be connected with the existing road of Hospital.</b>
34	Section 5.5 Clause 14 List of Approved Makes/Vendors Sl no. 38	Formica, Greenlam, Bakelite HYLAM,Century,Sylvan	Formica, Greenlam, Bakelite HYLAM,Century,Sylvan, <b>AICA</b>
35	Section 5.5 Clause 14 List of Approved Makes/Vendors Sl no. 8	Vitrified Tiles	<b>Double Charged</b> Vitrified Tiles
36	Section 5.5 Clause 14 List of Approved Makes/Vendors Sl no. 1	The contractor to install his own computerized batching plant of suitable capacity and arrange for Transit Mixers, pumps etc. as per approval of Engineer – In- Charge Or The RMC shall be procured from the source as approved by Engineer – in Charge from Lafarge/ACC/Ambuja	The contractor to install his own computerized batching plant of suitable capacity and arrange for Transit Mixers, pumps etc. as per approval of Engineer – In- Charge Or The RMC shall be procured from the source as approved by Engineer – in Charge from Lafarge/ACC/Ambuja/ <b>Ultratech</b>
37	Section 6 General Conditions of Contract  Clause 4.18	Under no circumstances shall the Employer be required to accept any Goods or Products that do not conform to the specifications of or requirements of the Contract. The Employer may condition acceptance of the Goods and Products upon the	Under no circumstances shall the Employer be required to accept any Goods or Products that do not conform to the specifications of or requirements of the Contract. The Employer may condition acceptance of the Goods and Products upon the successful completion of acceptance tests,

Sl no .	Section no. & Clause no.	Existing Clause/Provision	Changed Clause/Provision
	Acceptance and Rejection of Goods and Products	<p>successful completion of acceptance tests, as may be specified in the Contract or otherwise agreed in writing by the Parties. In no case shall the Employer be obligated to accept any Goods or Products unless and until the Employer has inspected the Goods or Products following commissioning of the Goods or Products in accordance with the requirements of the Contract. The Goods or Products shall be deemed to be accepted only after the Employer provides written acceptance.</p> <p>Notwithstanding any other rights of, or remedies available to, the Employer under the Contract, in case any of the Goods or Products is defective or otherwise does not conform to the specifications or other requirements of the Contract, the Employer may, at its sole option, reject or refuse to accept the Goods or Products, and the Contractor agrees promptly to replace such Goods or Products with Goods or Products of equal or better quality.</p>	<p>as may be specified in the Contract or otherwise agreed in writing by the Parties. In no case shall the Employer be obligated to accept any Goods or Products unless and until the Employer has inspected the Goods or Products following commissioning of the Goods or Products in accordance with the requirements of the Contract. The Goods or Products shall be deemed to be accepted only after the Employer provides written acceptance.</p> <p>Notwithstanding any other rights of, or remedies available to, the Employer under the Contract, in case any of the Goods or Products is defective or otherwise does not conform to the specifications or other requirements of the Contract, the Employer may, at its sole option, reject or refuse to accept the Goods or Products, and the Contractor agrees promptly to replace such Goods or Products with Goods or Products of equal or better quality.</p> <p>In addition to the above, the Employer shall have the liberty to direct the Contractor, to vary the volume of Medical Equipment and/or Furniture (for which item wise unit prices have been quoted as a component of the Financial Bid), depending upon the actual requirement of the Hospital at the time of commissioning services or any other reason whatsoever, at any time prior to procurement of such Goods or Products in accordance with the requirements of the Contract.</p>
38	Section 5.7 Schedule of Medical	<b>“Schedule of Medical Equipment and Hospital Furniture”</b>	<b>“Revised Schedule of Medical Equipment and Hospital Furniture”</b>

SI no .	Section no. & Clause no.	Existing Clause/Provision	Changed Clause/Provision
	Equipment and Hospital Furniture		
39	Section 4 Bidding Forms	<b>Form 3.2.1</b>	<b>Modified Form 3.2.1</b>
		<b>Form 3.3.1</b>	<b>Modified Form 3.3.1</b>
		<b>Form 21A</b>	<b>Modified Form 21A</b>

## REVISED SCHEDULE OF MEDICAL EQUIPMENT AND HOSPITAL FURNITURE

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
		<b>Medical equipment - General Terms and conditions of Contract</b>		
1		The unit supplied should function continuously in ambient temperature of 10° to 40° C and relative humidity of 15% to 90%.		
2		The unit should be capable of being stored continuously in an ambient temperature from 0 to 50° C and relative humidity of 15% to 90%		
3		Power input to the system should be single phase 220-240 Vac, 50 Hz single phase supply or 440 Vac, 50 Hz, 3 phase as applicable. Cables should be terminated in protected plug top or isolator of suitable capacity.		
4		Suitable servo controlled stabilizer / CVT should be supplied if the unit is not supported by built-in stabilizer.		
5		UPS of suitable rating should be supplied with battery back up for minimum 30 Minutes should be supplied for the system which needs continuous Power for safety of equipment, patients and Operator		
6		The manufacturing facility if available in India should have ISO certification wherever applicable.		
7		Electrical Safety testing should be done at the user's site as part of acceptance testing. This is mandatory.		
8		All statutory Approvals Like AERB / Explosive Licence/ running Blood bank approvals is the responsibility of Contractor		
9		Should have local service facility provided by the manufacturer or his authorised agent to carry out PM as per schedule and corrective maintenance at short notice.		
10		Remanufactured / Reconditioned / demo equipments will not be acceptable and undertaking to this effect to be submitted from the manufacturer.		
11		Cost of consumables and reagents for next 5 years should be submitted along with installation report		
12		The Contractor should provide 3 (three) year warranty from the date of handing over of equipments . CMC amount for next 5 years should be quoted for every equipment		
13		All major and minor spare parts should be available with the supplier for a period of 10 years from the date of supply		
14		Supplier should have a team of trained and experienced service engineers within 24 hrs reach.		
15		Electrical Safety testing should be done at the user's site as part of acceptance testing. This is mandatory.		
16		2 copies of user's manual in Hard copy & CD should be supplied		
17		4 Preventive maintenance to be carried once in every 3 months during warranty period		
18		1 copy of maintenace manual with Block diagram, parts price list, trouble shooting procedure and detailed preventive maintenance protocol to be provided		
19		Certificates of test and calibration with complete details done at factory of prior to despatch and should be attached along with Installation report		



Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
	3	<b>Digital Detector [Flat panel Caesium Iodide (CsI)] - 2 (Two) nos. of fixed/portable type (wired / wireless) with required battery.</b>		
	a	One detector should be fixed with horizontal table and another detector will be fixed with vertical bucky stand.		
	b	The active image size of the detector should be at least 35 cm x 41 cm or more.		
	c	The spatial resolution should be minimum of 2.5 lines pair/mm.		
	d	The pixel size should be 200 micrometers or less.		
	e	The detector should be capable of fixing in vertical Bucky stand.		
	f	Detective Quantum Efficiency (DQE) should be 65 % or above at 0 lp/mm.		
	4	<b>Vertical Detector Stand</b>		
	a	The unit should be provided with vertical stand.		
	b	The unit should have provision to do all upright X-Rays.		
	c	The vertical Detector should travel from at least 1.5 feet to 5 feet above floor level.		
	d	Bucky tilting should be -16 to + 90 degree or wider		
	5	<b>Work Station</b>		
	a	The operating console should have LCD/TFT monitor.		
	b	Storage disc capacity should be 500 GB or more.		
	c	The system should have built in DICOM interface ready.		
	6	<b>Table</b>		
	a	Fixed type table with fixed/portable type detector		
	b	Patient couch should be automatic and can be operated from the table side. Movement should be vertical and horizontal.		
	7	<b>Accessories</b>		
	a	Should provide with Dry Imager camera. The Camera should print at least standard film sizes.		
	b	Should provide with 2 no. of Lead Apron (Light weight user friendly)		
	c	One Separate additional work station to be provided		
	d	UPS from reputed manufacturer of at least 30 minutes back up for the console only and a Servo Stabilizer of appropriate KVA for the whole system.		
	e	The equipment should be new and unused. The manufacturing date should not be more than 180 days when it would reach the consignee address.		
	f	Gonadal shield for boys and girls of all age group one set.		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
	g	Stand for LEAD apron and Gonadal shield.		
	8	<b>Standard &amp; Safety</b>		
	a	Should be of US FDA / CE ("Conformité Européene"), AERB type approval		
	9	<b>Warranty &amp; CMC</b>		
	a	Warranty and CMC includes (i) everything in specification of the equipment including Air conditioning, UPS, Servo Stabilizer and all other accessories (ii) all accessories and ancillaries in site preparation including interiors.		
	b	Warranty and CMC will also include X-Ray tube which will have to be replaced by a new, fresh and functioning one in case of tube fault, if any, during period of contract.		
<b>2</b>		<b>300 M.A. X-ray machine with Radiography and Fluroscopy</b>	<b>1</b>	Siemens/GE/Shimadzu
	1	<b>X Ray Generator</b>		
	2	Two pulse X-ray generator		
	3	Power output: 24 KW X Ray Generator 300mA , 100 KV		
	4	Electronic Timer		
	5	To increase the X-ray tube life, X-ray generator should be provided with a device capable of stopping rotating anode immediately after the termination of the exposure.		
	6	<b>X Ray Tube:</b>		
	7	Two Nos. BEL DRA 1 - 125/20/40 X Ray Tube should be offered with the unit with 2 pairs of HT Cables :		
	8	<b>Column Stand</b>		
	9	Light weight Floor to Ceiling type with Spring Counter Balancing System with rope failure protection device. It should be 360 degree rotatable.		
	10	<b>Examination Table</b>		
	11	Vertical to head down position with automatic stop at Vertical, Horizontal and Head down position.		
	12	Table should be provided with obstacle protection during horizontal to vertical position.		
	13	Spot Film Device should be provided with magnetic breaks and automatic arrest facility during spot filming.		
	14	Bucky with adjustable cassette tray with a grid ratio of 10:1 and 100 lines per inch		
	15	Motorized Under Couch Collimator and Manual Over Couch collimator.		
	16	The Spot Film Device should include the following:		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
17		4 in 1 on 8"X10" Film		
18		2 in 1 on 10"X12" Film		
19		1in 1 on 14"X14" Film		
20		along with a suitable grid		
21		Foot Rest, Abdomen Binder, Compression Device foot Switch hand Grip, Skull Cone, Shoulder Rest, Strap Radiation flaps		
22		<b>IITV</b>		
23		The entire system should have resolution of 10lp/cm and consist of the following:		
24		Light weight ceiling free IITV system mounted on the table.		
25		High resolution CCD camera to capture the image from the output phosphor of the II.		
26		Trolley mounted 17" TFT Monitor (44")		
27		specifications of the Image Intensifier:		
28		Nominal entrance field diameter of 23 cm with triple field selection capability.		
29		Output window size 20-25 mm.		
30		Vertical & Horizontal image orientation reversal switches mounted on II.		
31		The assembly should have 'All metal' construction and provide magnetic and lead shielding.		
32		<b>Specifications of the CCD camera.</b>		
33		Should be of PAL Systems with minimum 750 x 580 pixels.		
34		Video Standard 50 Hz. 625 lines interlaced.		
35		Video gain should have automatic gain control.		
36		Circular blanking facility.		
37		Video output – 1 Vpp composite video.		
38		Last image hold facility must be present.		
39		<b>Specification of the monitor.</b>		
40		<b>TFT/LED type Medical Grade monitor minimum 43 cm. 17" diagonal with circular mask.</b>		
41		Local controls for image contrast and brightness adjustment.		
42		Should be cart/ trolley mounted and movable anywhere in the fluoroscopy room.		
43		Vertical Bucky stand for standing abdomen (quote optionally).		
44		Quoted unit should be approved by BARC/AERB.		
45		<b>Accessories:</b>		
46		- Cassettes : Push lock type cassette with Green/Blue Base Rare earth screens of size :		
47		- 8"x10" – 2 nos.		
48		- 10"x12" – 2 nos.		
49		- 14"x14" – 2 nos.		



Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
50		- 14"x17" – 2 nos.		
51		- Lead Aprons – 2 nos.		
52		- Radiation Shield – 1 no		
53		- Lead Aprons – 4 nos.		
54		<b>Standards, safety, and training</b>		
55		Should have the ISO certification and the copy of the same should be enclosed along with the technical bid.		
56		Training should be provided for users and biomedical engineers		
57		Unit should have type approval certificate from AERB		
58		Should comply with AERB /BIS/ICRP Guidelines for radiation leakage and X-Ray equipments.		
59		<b>Documentation</b>		
60		User/Technical/Maintenance manual to be supplied in English		
61		Certificate of calibration and inspection from factory.		
<b>3</b>		<b>C arm with accessories</b>	<b>1</b>	Siemens/GE/Philips
<b>1</b>		<b>Technical Specifications</b>		
2		Mobile surgical image intensifier system with counter balanced C-arm for fluoroscopic and General work.		
3		<b>X-ray Generator and X-ray tube (Specify the name of manufacturer)</b>		
4		X-ray generator should be of high frequency technology. (Specify the name of manufacturer)		
5		Fluoroscopy Mode 40-110 KV or more with last image hold 0.2 mA to 7mA for high contrast mode		
6		Cassette exposures up to 60mA should also be possible.		
7		System should have provision for Automatic Dose Rate Control.		
8		X-ray tube should be Dual focal spot type. Specify the make, model and name of manufacturer		
9		<b>Charm</b>		
10		Orbital movement 125° (- 35° to + 90°)		
11		Angulation ± 180° or more		
12		Horizontal movement 20 cm or more		
13		C-arm depth 60 cm or more		
14		Swivel range ± 12° or more		
15		Motorized Vertical movement 40 cm or more		
16		Tube to II distance 85 cm or more		
17		Radiation indicators		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
18		<b>X-ray image intensifier Specify the make, model and name of manufacturer</b>		
19		Size 9 inch (Specify the name of manufacturer)		
20		Company should be able to demonstrate complete IITV Chain image resolution of minimum 12 lp/Cm with appropriate tools.		
21		Image rotation facility		
22		Unit should be provided with Cassette holder.		
23		It should be possible to storage minimum 4 images thru control console. A separate image management system with PC/Laptop should be provided by the company to store images in 200GB or more HDD with post processing, with storage/retrieve facility on a CD/Pen drive.		
24		It should have a CMOS sensor based camera of latest technology with 1k x 1k matrix. Specify the make, model and name of manufacturer.		
25		<b>Image Viewing</b>		
26		15" or more TFT monitors of medical grade mounted in a trolley. Specify the make, model and name of manufacturer		
27		Please specify the make and relevant details like brightness, resolution,etc.		
28		<b>Accessories</b>		
29		Sterile cover		
30		Lead aprons 6 Nos		
31		<b>Standards, safety, and training</b>		
32		Should have the ISO certification and the copy of the same should be enclosed along with the technical bid.		
33		Training should be provided for users and biomedical engineers		
34		Unit should have type approval certificate from AERB		
35		Should have 4 digit CE approval		
36		Should comply with AERB /BIS/ICRP Guidelines for radiation leakage and X-Ray equipments.		
		<b>Documentation</b>		
37		User/Technical/Maintenance manual to be supplied in English		
38		Certificate of calibration and inspection from factory.		
		<b>Warranty</b>		
39		Full Warranty one year from the date of taking over including all accessories		
<b>4</b>		<b>CR System</b>	1	AGFA/Fuji/ Konica
1		The CR System should have following essential features		
2		Image recording system (Cassettes & Imaging Plates ( IP))		
3		The following sizes of Radiography Cassettes along with Image Plates should be supported by the unit.		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
	4	Sizes		
	5	a) 14"X17" 2 Nos		
	6	b) 14x14 2Nos		
	7	c) 10x12 1Nos		
	8	d) 8x10 1 Nos		
	9	Cassettes should preferably have rewriteable label to avoid mix up of patient name / ID with image data before the same is brought to the CR reader / Digitizer from X-Ray room for cassette scanning / reading		
	10	Image Reading (CR Reader / Digitizer)		
	11	The CR Reader / Digitizer should be able to process 60 Imaging Plates / hour or more of 14"x17" size at 10 pixel resolution		
	12	It should have a standard spatial resolution of 10 pixels/mm for all above mentioned cassette sizes.		
	13	It should have grey scale resolution of at least 20 bits / pixel for data acquisition and 16 bits / pixel for output to processor		
	14	Time to preview image of 35 cm x 43 cm cassette should be less than 30 secs.		
	15	It should be DICOM PACS ready.		
	16	f) The digitizer should be table top model with horizontal cassette loading. It should have rigid IPs or flexible IP embedded on tray for better life		
	17	Processing Server / CR Workstation with 19" LCD Panel		
	18	PC based unified server / workstation for centralized patient identification & management of Images / Studies.		
	19	Process of identification should be ready for interface with existing Hospital Information System (HIS) or Radiology Information System (RIS) in DICOM protocols		
	20	<b>Standards, Safety and Training</b>		
	21	The quoted model should have US FDA or CE (Conformité Européene) BIS certificate and copy of the same should be enclosed along with the technical bid.		
	23	Training should be provided for users and biomedical engineers		
	24	<b>Documentation</b>		
	25	User/Technical/Maintenance manual to be supplied in English		
	26	Certificate of calibration and inspection from factory.		
	5	<b>Colour Doppler</b>	1	Siemens/GE/Philips
	1	State of art colour doppler system with full digital technology for whole body applications to include (both adults and paediatric) which include abdominal, obs/gyn, peripheral vascular, musculoskeletal, small parts imaging and endocavitary (transvaginal / transrectal) with the following specifications		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
2		Latest generation electronic phased array color doppler system with minimum 1000 electronic independent channels. System should be DICOM 3 or higher version compatible and capable of being interfaced with HIS/RIS/PACS and connectivity to any PC/computer etc in DICOM format.		
3		Should be field upgradeable to next generation system on site. All new software should be upgraded free of cost for at least 3 years.		
4		Speckle reduction filter, real time spatial compounding, frequency compounding or better technology should be available in convex and linear probes for better resolution and penetration.		
5		<b>Technical specification</b>		
6		Latest generation electronic phased array color Doppler system with minimum 1000 electronic independent channels.		
7		256 gray shades or more for sharp contrast resolution.		
8		<b>System should be offered with following electronic broad band width transducers</b>		
9		1:Broad band convex array transducer with frequency range of 2 – 6 MHz suitable for radiology applications.		
10		2:Broad band Linear array transducer frequency range of 6 to 12 MHz suitable for vascular and small parts applications.)		
11		3: Trans rectal Transducer 5-9 MHz or more- transrectal probe should have biopsy facility with needle guides .		
12		Harmonic Imaging should be available in all probes with the following modes and setting for:		
13		Tissue harmonic		
14		Contrast harmonic		
15		Harmonic angio		
16		Quantification of harmonics imaging		
17		Harmonic imaging in power Doppler imaging mode for improved sensitivity and specificity in differentiating blood/agent from tissue.		
18		Gain control in two dimensions for additional level of flexibility to image quality control.		
19		Real time high frequency 2D for higher resolution and low frequency Doppler for higher sensitivity in all probes.		
20		Frame rate should be <b>150 FPS</b> or more. The frame rate in triplex mode should not be less than 12 frames per second.		
21		Steerable PW/CW on all phased array probes.		
22		High-definition acoustic zoom for enlarging sections of 2D and color flow images with more acoustic information for greater clarity and detail while maintaining an optimal frame rate.		
23		Modes – 2D B Mode, B/B Mode, M-Mode, steerable PW/CW Doppler, color Doppler, B/M Mode, B/PW Doppler, B/CW Doppler, B / Power Angio, B and Power Angio should be available..		
24		Monitor should be High resolution, non interlaced LCD Color monitor of 17 inches or more with tilt and swivel facility to view in all angles and all light conditions.		
25		Color flow imaging for		
26		Increased lateral & spatial resolution		

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Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
27		Detection of even subtle areas of turbulence, displaying a more physiological blood flow appearance without loss of frame rate		
28		Color flow with capability of automatically picking up color flow as a function of focal depth.		
29		Tissue colorization (B-Color) for improved contrast resolution.		
30		Should have facilities and application software for adult abdominal, obs/gyn, peripheral vascular, musculoskeletal, small parts imaging and endocavitary applications. (All application package should be built into the system).		
31		Cine loop facility, both frame by frame and in cine mode, with a memory for atleast 300 2D color images' review and atleast 20 seconds of doppler and M mode data.		
32		High frame rate review for better clarity of playback images study in slow motion.		
33		Quad loop with memory for pre and post image comparison of any procedure.		
34		Memory – 256 frames or more in quad loop. M Mode & Doppler scroll memory -40 seconds or more.		
35		PW velocity range up to 5.5 m/s & more than 6.5 m/s with HPRF option at 0 degree preferably. Automatic real time/ frozen tracing of instantaneous peak velocity & instantaneous mean velocity( or frequency ) should be available.		
36		Various maps for pre and post processing.		
37		SystemDynamicRange should more than 150db		
38		User defined system and application presets for multi-user department. The number of application presets is to be mentioned		
39		In- built hard disk storage capacity of atleast 80 GB with facility of direct storage and retrieval of B/W and color images (both frozen and cine loops). CD, DVD drive for read and write of stored images.		
40		Depth of Field Minimum 28 cm should be available		
41		PRF Range should be 500 Hz to 50,000 Hz		
42		Alpha numeric key board with illuminated keys and status display. Key panel Height Adjustment Should be Possible. All panel key should be customized, including Freeze Key.		
43		Color Map resolution up to 128 levels.		
44		Facility for high definition digital acquisition, review and editing for complete patient studies.		
45		Unit should have 3transducers holders and one gel bottle holder		
46		3 Active Ports should be available. Any Probes any Port interchangeable connectivity should be possible with simple electronic selection method for interchanging transducers		
47		Detailed Radiology, obs&gyn and vascular measurement packages should be available.		
48		System should have extensive calculation packages		
49		a. Distance, volume ,Area, % stenosis on B mode		
50		b. Distance, Time, Heart Rate, Slope on M mode		
51		c. Velocity, Acceleration time, Slope, PI, RI, S/D Ratio with Auto Doppler calculation on Doppler mode		
52		The system should have Up / Down & Right / Left Image rotation, One touch Image optimization and Edge Enhancement settings		
53		The system should have gate adjustments on spectral modes, auto angle correction, filter adjustment, base line and sweep speed adjustments.		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
	54			
	55	System should have facility for separate 2D quick scan (auto 2D optimization)/ Doppler Quick Scan(auto baseline and PRF adjustment).		
	56	<b>SYSTEM ACCESSORIES AND CONSUMABLES</b>		
	57	Colour Laser printer with direct printing connectivity for printing stored images		
	58	Online UPS with capacity for 30 mins back-up of all functions of the equipment i.e performing ultrasound procedure, exposure onto films		
	59	Color printer paper – 100 sheets		
	60	<b>Power supply</b>		
	61	Power input to be 220 – 240 VAC , 50 Hz fitted with Indian plug. Resettable overcurrent breaker shall be fitted for protection.		
	62	<b>Standards, Safety, and Training.</b>		
	63	Should be US FDA or CE ("Conformité Européene") approved product		
	64	Manufacturer should have ISO certification for quality standards.		
	65	On site comprehensive training for lab staff and support services till customer satisfaction with the system		
	66	<b>Documentation</b>		
	67	User/Technical/Maintenance manual to be supplied in English		
		Certificate of calibration and inspection from factory.		
		<b>ICU/CCU</b>		
6		<b>Biphasic Defibrillator</b>	2	Zoll /Philips
		<b>Specification</b>		
	1	<b>Operational Requirements</b>		
	2	Defibrillator should be Bi Phasic		
	3	Should monitor ECG and display them		
	4	Should print the ECG on thermal papers		
	5	Should work on Manual and Automated External Defibrillation (AED) mode		
	6	Should be capable of doing synchronized cardio version		
	7	Can be operated from mains as well as battery		
	8	<b>Technical Specifications</b>		
	9	Should be Biphasic defibrillator monitor with Recorder, having capability to arrest all arrhythmia within a maximum energy of 200 Joules		
	10	Should monitor ECG through paddles, pads and monitoring electrodes and Defibrillate through pads and paddles.		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
11		Should compensate for body impedance for a range of 25 $\Omega$ to 150 $\Omega$		
12		Should have a built in 50 mm strip printer		
13		Should have charging time of less than 5 seconds for maximum energy.		
14		Should have bright display for viewing messages and ECG waveform of 6 seconds		
15		Should have external paddles with paddles contact indicator – for good paddle contact. Both Adult and pediatric paddles should be available.		
16		Should have event summary facility for recording and printing at least 250 events and 50 waveforms.		
17		Should have a battery capable of usage for at least 90 minutes or 30 discharges.		
18		Should be capable of printing Reports on Event summary, configuration, self test, battery capacity etc		
19		Should have facility for internal self test/check before usage and set up function		
20		Should be capable of delivering energy in increments of 1-2 joules up to 30 J and increments of maximum 50 J thereafter.		
21		<b>System Configuration Accessories, spares and consumables</b>		
22		Defibrillator - 01		
23		Paddles Adult and Paediatric External -01 Each.		
24		Patient cables -01		
25		ECG Rolls -10		
26		<b>Power Supply</b>		
27		Power input to be 220-240VAC, 50Hz fitted with BIS plug (ISI mark).		
28		<b>Standards, Safety and Training</b>		
29		Should be US FDA and CE ("Conformité Européene") approved product.		
30		On site Comprehensive training for lab staff and support services till customer satisfaction with the system		
31		<b>Documentation</b>		
32		User/Technical/Maintenance manuals to be supplied in English.		
33		Quality Test Certificate of calibration		
<b>7</b>		<b>Multiparameter Monitors</b>	<b>2</b>	Philips /GE /Draeger
1		<b>OPERATIONAL REQUIREMENTS</b>		
2		Capability of measuring, displaying of patient data		
3		<b>TECHNICAL SPECIFICATIONS</b>		
4		Minimum 10.4" inches multicolored TFT display screen.		
5		Capable of simultaneous display of Six waveform and eight digital parameters.		
6		Combination of single, dual and multi parameters modes.		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
	7	Multichannel (up to 12 leads) ST segment analysis.		
	8	Facility to monitor and display – ECG, respiration, NIBP, SPO2 with pleth, EtCO2 with capnography, Temperature, Cardiac output & IBP – 2 nos.		
	9	Automatic arrhythmia detection & alarm for standard and lethal arrhythmia.		
	10	Trend of at least 24 hours.		
	11	100 Nos. event recall facility both manually and automatically triggered by alarm.		
	12	Integrated or external printer for report output.(Optional )		
	13	<b>SYSTEM CONFIGURATION, ACCESSORIES, SPARES AND CONSUMABLES</b>		
	14	ECG / Resp : with a set of 5 Lead ECG cable with clip - 1 sets per monitor		
	15	NIBP : Adult cuff – standard size 1 nos. and small size 1 no. and large size 1 no. per monitor (complete sets)		
	16	SPO2: with reusable adult SPO2 sensor with cable – 1 Nos. per monitor.		
	17	2 IBP with 2 Nos. of reusable transducer cables with brackets and disposable domes -10 Nos. per monitor.		
	18	Two Temperature with One Rectal temperature probe and skin temperature probe		
	19	<b>POWER SUPPLY</b>		
	20	Power input to be 220 -240 V AC, 50 Hz.		
	21	<b>STANDARDS, SAFETY AND TRAINING</b>		
	22	Should be US FDA or CE ("Conformité Européene") (4 digit) approved product.		
	23	Manufacturer should have ISO certification for quality standards.		
	24	On Site Comprehensive training for staff and support services till customer satisfaction with the system.		
	25	<b>DOCUMENTATION</b>		
	26	User/Technical/Maintenance manuals to be supplied in the English.		
	27	Certificate of calibration and inspection.		
8		<b>Suction machine</b>	3	SISCO
	1	Shall have Crompton Greaves/American Universal/GEC Motor of minimum ¼ H.P. capacity. The machine should be portable on four wheels and handle for transportation		
	2	<b>Technical Specification</b>		
	3	The Suction pump should be oil immersed fitted on Motor shaft		
	4	Suction pump should have line grinding internally.		
	5	To facilitate maintenance the cover of machine should be easily to open from the top & sides		
	6	The suction machine should be capable of producing minimum vacuum of 500 approx mm Hg. Which should be adjustable and monitored by vacuum gauge of suitable range. The suction capacity should be 15 litres per minute and can be regulated.		



Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
7		It should have two bottles of 1 or 2 liters (As per requirement) with synthetic rubber lids. The bottle shall be fitted with the arrangement to prevent overflow of fluid.		
8		ON/OFF Switch and Power indicator should be available		
9		Body material: Base, top & panel made of rust proof and corrosion resistant moulded ABS/Stainless Steel. Jar/Bottle material: Autoclavable polycarbonate.		
10		Inbuilt maintenance free battery. Battery backup up to 60 minutes on full charge. Should be with built in charger.		
11		Should operate on 230V,50 Hz supply.		
12		<b>Accessories,Spares and Consumables</b>		
13		System as specifies		
14		Powercord 2 metre long with 15A three pin plug top		
15		One litre bottle with over flow protection- 01 no		
16		Lid set -01		
17		Seal for bottle -01 nos		
18		Suction tubing set - 02 set		
19		<b>STANDARDS, SAFETY AND TRAINING</b>		
20		Manufacturer should have ISO certification for quality standards.		
21		On Site Comprehensive training for staff and support services till customer satisfaction with the system.		
22		<b>DOCUMENTATION</b>		
23		User/Technical/Maintenance manuals to be supplied in the English.		
24		Certificate of calibration and inspection.		
9		<b>Head Light Source</b>	1	Keeler/Heine
1		<b>Head light</b>		
2		Should have		
3		a) Light weight		
4		b) Portablility		
5		c) Illumination more than 1lac lux		
6		d) Color temperature of 5000K		
7		e) No light degradation		
8		f) Light spot size 100mm at 16 inch working distance		
9		g) Variable intensity range		
10		h) Battery pack in the belt		
11		i) Battery rechargeable		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
	12	j) Long battery life		
	13	k) Operating time not less than 4 ½ hours		
	14	<b>STANDARDS, SAFETY AND TRAINING</b>		
	15	Manufacturer should have ISO certification for quality standards.		
	16	On Site Comprehensive training for staff and support services till customer satisfaction with the system.		
	17	<b>DOCUMENTATION</b>		
	18	User/Technical/Maintenance manuals to be supplied in the English.		
	19	Certificate of calibration and inspection.		
<b>10</b>		<b>Nebulizers</b>	<b>5</b>	Omron/Bbraun/ Philips
		<b>Technical Specification</b>		
	1	It should be made of highly heat resistant polymeric material which can be disinfected by autoclaving		
	2	Should have pneumoclean air filter to provide purified air for aerosol nebulization		
	3	Should have an easily detachable fan cover and air filter to allowing cleaning of every corner of the passage and the medication cup should be easily attachable and easy to clean. The diaphragm to be replaced for each patient to help prevent cross infection.		
	4	The unit should be capable of removing more than 96% of 0.3 micron or larger airborne dust particle with the help of pneumoclean to provide purified air for aerosol nebulization.		
	5	Patient tube should be 1-1.5 meter in length.		
	6	Should provide extra accessories.		
	7	Disposable cap /diaphragms for drugs – 25, lids – 6 and patient circuit 6/tube-2, air filters – 10 no.s		
	8	Nebulizing rate : atleast 4ml/min		
	9	Mist particle size :Approx 1-5 microns		
	10	Nebulizing time setting: The timer may be set for any desired point between zero and 30 minutes.		
	11	For Nebulization period longer than 30 minutes, the timer can be set for “continuous” operation.		
	12	Medication cup capacity :150 ml		
	13	<b>POWER SUPPLY</b>		
	14	Power input to be 220 -240 V AC, 50 Hz.		
	15	<b>STANDARDS, SAFETY AND TRAINING</b>		
	16	Manufacturer should have ISO certification for quality standards.		
	17	On Site Comprehensive training for staff and support services till customer satisfaction with the system.		
	18	<b>DOCUMENTATION</b>		
	19	User/Technical/Maintenance manuals to be supplied in the English.		
	20	Certificate of calibration and inspection.		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
11		<b>Portable Lights</b>	2	Philips/Hospitech
		<b>Operational Requirements</b>		
	1	LED Type		
	2	<b>Technical Specification</b>		
	3	Extended life		
	4	Color temperature: 5000K		
	5	Light pattern: 3.3" x 6.3" at 27.6" (focal distance) (Day light)		
	6	(85mm x 160 mm @700 mm)		
	7	Light Intensity:		
	8	a) Low 16,000 lux		
	9	b) Medium 20,000 lux		
	10	c) High 24,000 lux		
	11	Operating Voltage: 230 V		
	12	BTUs per hour: 325		
	13	Superior grade dichroic-coated lens with feathered edges to minimize eye fatigue for the doctor		
	14	frame to be Powder-coated to ensure the highest level of corrosion resistance and asepsis control.		
	15	Color-corrected temperature should approximate the color of natural daylight.		
	16	Third axis of rotation should be provided for smooth positioning of the light head for enhanced view.		
	17	<b>STANDARDS, SAFETY AND TRAINING</b>		
	18	Manufacturer should have ISO certification for quality standards.		
	19	On Site Comprehensive training for staff and support services till customer satisfaction with the system.		
12		<b>Patient warmer</b>	2	Online surgicals/Bair Hugger
	1	Intraoperative temperature management unit for forced-air warming.		
	2	The unit should provide safe, quiet and effective warming to the patient.		
	3	Should be light weight making transport easy.		
	4	Should be freestanding as well as be easily attached to an IV pole or bedrail.		
	5	Should have snap-fit hose swivels in at least three points for easy blanket attachment and positioning.		
	6	Matching Adult lower body reusable warming blanket 5 Nos.		
	7	Matching Adult upper body reusable warming blanket 15 Nos.		
	8	Power cord with standard Indian plug and other cables to make the equipment functional.		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
	9	<b>STANDARDS, SAFETY AND TRAINING</b>		
	10	Manufacturer should have ISO certification for quality standards.		
	11	On Site Comprehensive training for staff and support services till customer satisfaction with the system.		
		<b>Operation Theatre</b>		
<b>13</b>		<b>Anesthesia Work Station with Ventilators</b>	<b>4</b>	GE/Maquet/Drager
	1	The Anesthesia Machine should have the following essential components.		
	2	Anesthesia machine complete with		
	3	Anesthesia gas delivery system.		
	4	Circle absorber system.		
	5	Precision vaporizer for halothane, isoflurane		
	6	Anesthesia ventilator.		
	7	Detailed specifications:		
	8	Anesthesia gas delivery system.		
	9	Should have Electronic Gas Mixing facility and should be supplied with Digital Flow meter		
	10	Should have provision for delivery of oxygen, nitrous oxide and medical air with pressure gauges. With 3 flow meters for oxygen ,nitrous oxide and air		
	11	Should have independent attachments for connecting central gas supply and pin indexed cylinders. Should have provision for attaching 1 cylinder of(O <sub>2</sub> and N <sub>2</sub> O).		
	12	Oxygen and Nitrous oxide should be linked either mechanically or pneumatically to ensure a minimum of 25% oxygen delivery at all times to avoid delivery of hypoxic mixture.		
	13	Should have audio-visual oxygen Failure warning System with Nitrous oxide cut off.		
	14	Should have back bar which is ISO pin type to attach vaporizer easily.		
	15	Should be supplied with necessary attachments to use of the breathing circuits (Bains, Jackson-Rees and closed circuit etc.)Reusable circuit for adult and pediatric will be provided.		
	16	Should have top shelf to keep monitors and a tabletop to keep anesthetic drugs, equipments etc.		
	17	The machine should possess battery back up if any electrical components are present		
	18	Castor wheels should be durable and moisture resistance & Smooth.		
	19	The Anesthesia machine frame should be made of rust proof material/Stainless steel.		
	20	Unit provided with a integrated battery back up		
	21	Standard Circle Absorber System		
	22	Should have adjustable pressure limiting valve, breathing circuit pressure measuring device.		
	23	Should have a bag/ventilator selecting valve integrated onto the absorber. Absorber is having isolation when using with patient		

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Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
	24	Facility to attach oxygen sensor.		
	25	Should have dual absorbent chamber canister. Arranged vertically one above the other.		
	26	Precision Vaporizers (Temperature and flow compensated) for Servoflurane, Isoflurane.		
	27	Should be easy to attach and dismount from the back bar.		
	28	Vaporizers should have ISO pin type (Selectatec) mounting and vaporizer interlocking facility..		
	29	Should have a standard filling port with keyed filling device.		
	30	Should be designed for transport with liquid in vaporizer chamber with protection against tipping and shaking		
	31	Maintenance free vaporizer (desirable)		
	32	Ventilator		
	33	Should be a bag in bottle anesthesia ventilator with standing (ascending) bellows.		
	34	Should be supplied with adult and pediatric bellows.		
	35	Should be able to set tidal volume, respiratory rate and I:E ratio		
	36	Ventilator should have audible alarms for ventilator failure, low oxygen supply pressure, inadequate volume delivery, disconnection alarm, and power supply failure.		
	37	<b>Standards, Safety and Training</b>		
	38	Should be US FDA and CE ("Conformité Européene") approved product.		
	39	Manufacturer should have ISO 9001 certification for quality standards.		
	40	On site Comprehensive training for lab staff and support services till customer satisfaction with the system		
	41	<b>Documentation</b>		
	42	User / Technical / Maintenance manuals to be supplied in English.		
	43	Certificate of calibration and inspection.		
<b>14</b>		<b>Resuscitation Kit</b>	<b>4</b>	Suntech/Online surgicals/Sisco
		<b>Technical Specifications</b>		
	1	Should have Silicone self expanding Manual Resuscitators of all sizes (Infant, Pediatrics. Adult) with mask of all sizes.		
	2	100%, autoclavable; reusable		
	3	Non re-breathing valve with 40 cm of H2O pressure release for infant and paediatric		
	4	360° swiveling patient connector with standard 15 mm / 22 mm diameter		
	5	Oxygen reservoir bag with valves		
	6	2 mtr. PVC oxygen tubing		
	7	Should have Laryngoscope of both straight blades and curved blades of various size Standard blades (Macintosh, Miller), Non-standard blades ( McCoy)		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
	8	Lighted stylet for oral and nasal intubation		
	9	Oral Airways -Silicone, autoclavable & reusable in sizes 000, 00 & 0, 1.2,3,4		
	10	adult size nasal airways, one(1) each 20F, 22F, 24F,26F, 28F, 30F, 32F, 34F		
	11	Four pediatric nasal airways, One(1) each 12F, 14F,16F,18F		
	12	Magils forceps all standard sizes		
	13	All size malleable Stylet ( for endotracheal tube for neonate to adult)		
	14	Gum elastic bougie(size 3/ 4)		
	15	Laryngeal Mask Airway Classic reusable (sizes-1 ,2, 3,4 )		
	16	Cricothyrotomy set		
	<b>15</b>	<b>OT table</b>	<b>4</b>	Maquet/Steris/BenQ/Mediland
	1	Electro- Hydraulic operation table		
	2	heavy weight of the patient. Complete with all accessories.		
	3	Electro-hydraulically powered for movements of height, tilting and trendelenburg.		
	4	The base of stable construction with large twin-disk-castors for easy travel and manoeuvring		
	5	Table top 500 mm x 1940 mm, Hight range 750 mm x 1090 mm		
	6	Trendelenburg - 25 Deg Up & Down, Lateral tilt 25 Deg Right / Left		
	7	The Operation table provided with corded hand control and override – control panel for additional safety.		
	8	The tabletop divided in 5 parts i.e., head plate (removable), back plate, seat plate and leg plates (removable).		
	9	Guided rails for X-Ray cassettes inserted from the head end.		
	10	Reverse positioning of patients on a special shoulder plate (three section) that can be connected at the foot end of the tabletop.		
	11	The back plates are gas spring adjusted offering easy and smooth control.		
	12	The Operation table should have safe positioning and adjustment due to optimal covering of moving joints.		
	13	The Operation table should provide optimal patient positioning in a supine position. The longitudinal shift feature of 290mm should give unobstructed imaging of vertebrae.		
	14	Mobile Operating Table, Electrohydraulic, SFC padding		
	15	Standard Accessories:		
	16	Head Rest, Leg plates, pair, hinged and abductable, SFC padding		
	17	Arm board, Radial Setting Clamp, Geopel knee crutch, Body Strap		
	18	<b>Standard Accessories:</b>		
	19	1. Arm Rests With Pads - 2 Nos.		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
	20	2. Anaesthesia Screens - With Clamps - 1 Nos.		
	21	3. Knee Crutches With Pads/Clamps - 2 Nos.		
	22	4. Body Straps - 1 Nos.		
	23	Lateral Position Accessories:-		
	24	1. Lateral Arm Support - 2 Nos.		
	25	2. Body Horns Large With Pads and square clamps - 2 Nos.		
	26	3. Doughnut Head Pad - 1 No.		
	27	Accessories for Gynecology- 1 set per 4 OT table		
	28	1. Round Drainage Funnel set - 1 No.		
	29	2. Lithotomy Leg Holders - 2 Nos.		
	30	3. Doughnut Head Pad - 1 No.		
	31	<b>POWER SUPPLY</b>		
	32	Power input to be 220 -240 V AC, 50 Hz.		
	33	<b>STANDARDS, SAFETY AND TRAINING</b>		
	34	Should be US FDA or CE (Conformité Européene) or BIS approved product.		
	35	Manufacturer should have ISO certification for quality standards.		
	36	On Site Comprehensive training for staff and support services till customer satisfaction with the system.		
	37	<b>DOCUMENTATION</b>		
	38	User/Technical/Maintenance manuals to be supplied in the English.		
	39	Certificate of calibration and inspection.		
<b>16</b>		<b>OT Lights</b>	<b>4</b>	Philips/Steris/Trilux/Bet
	1	Ceiling suspended high quality Operation Theatre lights with very high lumens. Twin mounted O.T. lights with each Ceiling Suspension Halogen lamps with Constant Voltage Transformer, Battery Back-up and UPS.		
	2	The Light with Double Dome, Micro lens with light heads sealed, smooth extremely flat aero – dynamic design and disinfectant-resistant powder coat paint that ensures minimal disturbance to the laminar flow.		
	3	(>140,000+>100,000LUX) with field size 25 cm to 30 cm (variable)		
	4	The Cool light, homogeneous, colour-true and cast shadow free light with two step interference filtering.		
	5	Optimum lighting conditions, even with extremely deep wounds.		
	6	Double fork system in order to ensure easy manoeuvrability.		
	7	Bulb replacement system from top, thus ensuring easy accessibility and higher hygiene standard.		
	8	IEC norms and international safety standards.		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
	9	Micro Lenses (Light Guides) that produce a uniform cascade i.e. numerous focal points arranged in different, vertical spatial planes. Thus, distinctly more light is directed to every point of the illuminated surgical site – whether large or small, deep or shallow.		
	10	Provides homogeneous light distribution with optimized in depth illumination. Thus the light does not need to be re-positioned even when the surgeon probes deeper into the surgical site.		
	11	Free of cast shadows. This will be possible through micro-lens light system that reduces shadow build-up. The light from micro lens sources in the light head should stream from both the middle and from the side, thus illuminating the entire light field so that any obscuration of one lighting system is compensated by the other, unobscured systems.		
	12	Mechanically the Extension Arms & Spring Arms should be rectangular in Construction giving Maximum stability.		
	13	to be supplied with spare handles and bulbs		
	14	<b>POWER SUPPLY</b>		
	15	Power input to be 220 -240 V AC, 50 Hz.		
	16	<b>STANDARDS, SAFETY AND TRAINING</b>		
	17	Should be US FDA or CE (Conformité Européene) or BIS approved product.		
	18	Manufacturer should have ISO certification for quality standards.		
	19	On Site Comprehensive training for staff and support services till customer satisfaction with the system.		
	20	<b>DOCUMENTATION</b>		
	21	User/Technical/Maintenance manuals to be supplied in the English.		
	22	Certificate of calibration and inspection.		
<b>17</b>		<b>Flash Sterilizer</b>	<b>1</b>	Natsteel/Reico
		<b>Technical Specification</b>		
	1	Stand-alone bench top autoclave 20 Litres, automatic .Single door, self sealing with high-quality silicone gasket		
	2	Dimension should match to suit the voume of autoclave		
	3	The autoclave should have double wall sheet metal with suitable insulation in between walls.		
	4	Pre-set automatic cycles for unwrapped instruments, wrapped instruments/packs		
	5	Two automatic programmes, approx: 2.2 bar at 134 degree C and 1.1 bar at 121degree C.		
	6	The equipment should have automatic pressure control switch /automatic water control device to ensure that the equipment does not run dry.		
	7	System should have digital display for Temperature and Time.System should have analogue display for Pressure.		
	8	System should have audio visual alm for low water level,and other system errors.		
	9	Fit with 5 L water reservoir, automatic fill, autonomy for at least 10 cycles		



Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
	10	Should be with 3 removable shelves		
	11	Should have Double safety door locking device		
	12	Should have safety feature protection against over-pressure and over-temperature		
	13	Audible and visual alert upon cycle interruption or completion		
	14	Unwrapped cycle time: cold 30 min, hot 20 min		
	15	Control panel with alpha-numerical display and cycle indicators		
	16	Should be complete with 3 instruments trays		
	17	Power Supply:230V,50 Hz		
	18	Power consumption: 3000 W(Approx)		
	19	<b>System Configuration Accessories, spares and consumables</b>		
	20	Autoclave-20L		
<b>18</b>		<b>Surgical Diathermy</b>	<b>4</b>	Vallylab/Erbe/ J&J/Martin
	1	It should be a multipurpose Electro Surgical generator, having both Monopolar & Bipolar coagulation and Monopolar cutting		
	2	Automatic Power Regulation		
	3	Using SFS (Smart Feed back System) for response to change in tissue impedance resulting in minimal thermal damage		
	4	Digital Display for power settings		
	5	3 different modes of Monopolar Coagulation		
	6	Soft, forced and spray coagulation		
	7	Bipolar Coagulation with auto start facility		
	8	4 programmable power settings on front panel can be saved and recalled for various applications		
	9	Hemostasis (blend) 4 steps coagulation degree control from front panel		
	10	Monopolar cut: From 1 to 400 watts in increment of 1 watt		
	11	Bipolar Coagulation: From 1 to 120 watts in increment of 1 watt		
	12	Max. HF voltage (Bipolar cut) 700V peak to peak		
	13	Safety class & type (IEC 601.1)		
	14	It should have soft, spray and forced coagulation in Monopolar coagulation mode with the following outputs.		
	15	Soft - 120 watts at 200 ohms		
	16	Settings from 1 to 120 watts in increment of 1 watt		
	17	Spray - 120 watts at 300 ohms		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
18		Settings from 1 to 120 watts in increment of 1 watt		
19		Forced - 120 watts at 300 ohms		
20		Setting from 1 watts to 120 watts in increment of 1 watt		
21		Auto start delay for preparations for 2 seconds		
22		Output power indication by 3 digit display		
23		Output power limitation: 1 watt increment		
24		Should have automatic patient plate detector, which indicates the absence of neutral electrode by LED with acoustic alarm when activated.		
25		Time Limit: LED glows if activated for more than 10 sec and shuts off the HF Power after total 15 sec		
26		Exact Power limitation automatically controlled.		
27		Maximum power consumption 800 VA Max		
28		Length/Breadth/Height - 430/440/175 mm		
29		Weight - 12.5 Kg Max		
30		Impact line voltage 230 V + 15%, 50 Hz		
31		Equipment Classification Degree of mobility for portable		
32		<b>POWER SUPPLY</b>		
33		Power input to be 220 -240 V AC, 50 Hz.		
34		<b>STANDARDS, SAFETY AND TRAINING</b>		
35		Should be US FDA and CE ("Conformité Européene") approved product.		
36		Manufacturer should have ISO certification for quality standards.		
37		On Site Comprehensive training for staff and support services till customer satisfaction with the system.		
38		<b>DOCUMENTATION</b>		
39		User/Technical/Maintenance manuals to be supplied in the English.		
40		Certificate of calibration and inspection.		
		<b>Emergency and Accident</b>		
<b>19</b>		<b>Automatic External Defibrillator</b>	<b>1</b>	Philips/Zoll
1		Simple operation, dedicated therapy controls, configurable options.		
2		Automated External Defibrillator (AED) capability with Shock Advisory System.		
3		Data storage, Transmission and retrieval capabilities.		
4		Power:		
5		Battery Only Configuration-choice of batteries.		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
	6	Dual battery capability.		
	7	DC Power Adaptor for transportation		
	8	Batteries should charge while device operates from Power Adaptor.		
	9	Low Battery Indicator and message.		
	10	Warm start.		
	11	Service indicator.		
	12	Display: LCD, User selectable contrast, minimum 4 secs of ECG		
	13	Data Management: Report Types- Three Formats types, two full capacity patient records.		
	14	Communications: PC Card, Internal Modem, External EIA/TIA Modem, Cellular Modem or serial connection.		
	15	Should be US FDA and CE ("Conformité Européene") approved product.		
		<b>Physio Therapy Department</b>		
<b>20</b>		<b>Interferential therapy unit</b>	<b>1</b>	Physiocare/ Technomed Electronics/Electrocare/Blue bell
		<b>Specification</b>		
	1	Should have 4-Pole interferential therapy facility		
	2	Should have 4-Pole vector therapy facility		
	3	Should have 2-Pole bipolar Interferential therapy facility		
	4	Should have the choice of medium frequencies 4 KHz and 2 KHz		
	5	Base frequency should be 0 to 150 Hz		
	6	Sweep frequency should be 0 to 100 Hz		
	7	Should have the following sweep programs		
	8	a. Square 1/1 Sec		
	9	b. Trapezoidal: 1/5 Sec		
	10	c. Triangular: 6/6 Sec		
	11	Should have 0-99 minutes presettable timer with alarm		
	12	Intensity control should be 0-90 mA continuously variable.		
	13	Should have intensity balance to equalize 2 Channels.		
	14	Output type should be 100% Isolated		
	15	Should have LCD/Digital display		
	16	Input supply to be 230 V AC, 50Hz fitted with Indian plug		
	17	<b>Standards, Safety and Training</b>		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
	18	Should have the ISO certification		
	19	The quoted model should have CE (Conformité Européene) ISO or BIS certificate and copy of the same should be enclosed along with the technical bid.		
	10	<b>Documentation</b>		
	21	User/Technical/Maintenance manual to be supplied in English		
<b>21</b>		<b>Ultra sound therapy Unit</b>	<b>1</b>	Physiocare/Technomed Electronics/Electrocare/BlueBell
	1	Ultra Sound therapy Unit-Digital display for output continuous & pulse modes four selectable settings in pluse mode digital timer, audio alarm for timer conforming.		
	2	<b>Standards, Safety and Training</b>		
	3	Should have the ISO certification		
	4	The quoted model should have CE (Conformité Européene) ISO or BIS certificate and copy of the same should be enclosed along with the technical bid.		
	5	<b>Documentation</b>		
	6	User/Technical/Maintenance manual to be supplied in English		
<b>22</b>		<b>Hydrocolator</b>	<b>1</b>	Physiocare/Technomed Electronics/Electrocare/BlueBell
	1	Hydrocolator-Thermostatic temperature control from 0 to 20 Degree, Min 4 Pac medium size.		
	2	<b>Standards, Safety and Training</b>		
	3	Should have the ISO certification		
	4	The quoted model should have CE (Conformité Européene) ISO or BIS certificate and copy of the same should be enclosed along with the technical bid.		
	5	<b>Documentation</b>		
	6	User/Technical/Maintenance manual to be supplied in English		
<b>23</b>		<b>Electric Muscle Stimulator</b>	<b>1</b>	Physiocare/Technomed Electronics/Electrocare/BlueBell
	1			
	2	Should be microprocessor controlled muscle stimulator		
	3	The unit should have LCD display		
	4	The unit should be light weight and portable		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
	5	Five different stimulus current modes should be available: Galvanic, Interrupted Galvanic, Faradic, Surged Faradic and TENS		
	6	Should display the actual intensity in Galvanic mode Ma		
	7	TENS should have Frequency and width modulation		
	8	Should be supplied with Standard Accessories		
	9	To be operatable at 230 V, 50 Hz AC		
	10	<b>Standards, Safety and Training</b>		
	11	Should have the ISO certification		
	12	The quoted model should have CE (Conformité Européene) ISO or BIS certificate and copy of the same should be enclosed along with the technical bid.		
	13	<b>Documentation</b>		
	14	User/Technical/Maintenance manual to be supplied in English		
<b>24</b>		<b>Computerised traction &amp; Microwave therapy</b>	<b>1</b>	Physiocare/Technomed Electronics/Electrocare/BlueBell
	1	Shortwave diathermy 500W with pulse and continuous mode & Traction machine-deluxe model, progressive & regressive mode & Traction bed, four folds		
	2	<b>Standards, Safety and Training</b>		
	3	Should have the ISO certification		
	4	The quoted model should have CE (Conformité Européene) BIS certificate		
	5	<b>Documentation</b>		
	6	User/Technical/Maintenance manual to be supplied in English		
<b>25</b>		<b>Exercise Therapy Equipment</b>	<b>1</b>	Physiocare/Technomed Electronics/Electrocare/BlueBell
	1	180 D goniometer (SS), 360 D goniometer (SS), digit finger gonimeter (SS), Stethoscope (Make:Diamond)		
	2	<b>Standards, Safety and Training</b>		
	3	Should have the ISO certification		
	4	The quoted model should have CE (Conformité Européene) BIS certificate		
	5	<b>Documentation</b>		
	6	User/Technical/Maintenance manual to be supplied in English		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
26		<b>Infra red lamp</b>	1	Physiocare/Technomed Electronics/Electrocare/BlueBell
	1	<b>Standards, Safety and Training</b>		
	2	Should have the ISO certification		
	3	The quoted model should have CE (Conformité Européene) or BIS certificate		
	4	<b>Documentation</b>		
	5	User/Technical/Maintenance manual to be supplied in English		
27		<b>Wax Bath</b>	1	Physiocare/Technomed Electronics/Electrocare/BlueBell
	1	<b>Technical Specification</b>		
	2	Should be electricity heated mobile wax bath		
	3	Should have capacity of atleast 20 liters		
	4	Inner tank should be made up of SS		
	5	Temperature range should be adjustable from 10 to 80 degree Celsius		
	6	Strip heaters of 2kw should be fitted at the bottom of the tank		
	7	Should have alarm with visual indicator		
	8	To be operatable at 230 V, 50 Hz AC		
	9	Should be supplied with all standard accessories and consumables.		
	10	<b>Standards, Safety and Training</b>		
	11	Should have the ISO certification		
	12	The quoted model should have CE (Conformité Européene) BIS certificate		
28		<b>Shoulder wheel</b>	1	Physiocare/Technomed Electronics/Electrocare/BlueBell
	1	Shoulder Wheel- Marine wheel, 1.2.meters diameter adjustable to arm length		
	2	<b>Standards, Safety and Training</b>		
	3	Should have the ISO certification		
	4	The quoted model should have CE (Conformité Européene) or BIS certificate		
	5	<b>Documentation</b>		
	6	User/Technical/Maintenance manual to be supplied in English		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
		<b>Paediatrics</b>		
<b>29</b>		<b>Radiant Warmer with Bassinet</b>	<b>4</b>	GE/Phoenix / Nice Neotech
	1	The fixed radiant warmer comprises of heating element of 500-600 W and with display of skin temperature in manual mode while control and skin temperature in servo mode. The heater box must be swivel & construction of the stainless steel reflector & guard rail is such that there is no possibility of shock hazards.		
	2	There should be a light source for making (halogen /LED) observation of the patient.		
	3	The baby tray comprises of the clear acrylic collapsible side panels. The baby tray should be of minimum 6 mm thickness, unhinged and can be easily removed for cleaning. Warmer and bassinet should be separate, on wheels and should be able to lock warmer and bassinet in position. Warranty should include replacement of side panel, in case of breakage during warranty period under normal handling. For further replacement, a unit cost per replacement.		
	4	The unit should be able to accommodate X – ray unit. There must be acrylic X–ray tray with X-ray guide for positioning the cassette.		
	5	The system must be design in such a manner that disinfection can be carried out easily. The unit should have Trendelenburg and reverse Trendelenburg (continuous mode maximum upto 15 deg).		
	6	Mattress padding should be with a foam density of 21 – 25 kg / m Mattress cover should be made of fire retardant material and should be anti bacterial and washable. Mattress should be waterproof and resistant to cleaning with chlorine based solution.		
	7	There must be display for the temperature control for the measured value & set value. Temperature display should be bright, numerical with at least 1” LED display. The unit should have a rechargeable battery back up to show the temperature of the baby during the power failure.		
	8	The unit must have two drawers, IV stand & Apgar alarm for 0-10 min. The diameter of I.V stand should be 2.5 cm minimum.		
	9	The heating element should be of quartz /infrared (non-ceramic material) with parabolic reflector /calrod/ with the life time warranty . Heater should be protected by a metal grid.		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
10		<b>PHYSICAL PARAMETERS:</b> Length of Bassinet : Minimum 650 mm Width of Bassinet : Minimum 430 mm Working level from the ground : 840 mm (+/- 5%) Distance from mattress top and heat source : minimum 850 mm Weight Approx : 40 Kg Castors (Brakes / lock on front two wheels) : 75 mm		
11		<b>RECOMMENDED ENVIRONMENTAL SPECIFICATIONS:</b> Operating temperature range : 20° C to 33° C Storage Temperature range : -25° C to 60° C Operating humidity range : 0 – 100 % RH		
12		<b>SKIN TEMPERATURE</b> Range : 32° C to 38° C Accuracy : + / - 0.2° C Resolution : 0.1° C Probe Interchangeability : + / - 0.2° C Infant required temperature range : 32° C to 38° C Heater output controllable from 0 to 100 % in increments of 5 % in manual mode. The unit should stop heating if the temperature exceeds the desired value by one degree and restarts only when temperature fails back into one degree. Operating humidity range : 0 – 100 % RH		
13		<b>ELECTRICAL SPECIFICATION</b> Electrical supply: Work with Standard Electrical supply (220-240V/50Hz) but can tolerate wide range of voltage fluctuation (like 180-260 V).		



Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
	14	Standard Accessories & Consumables : (quoted price should include all accessories and consumables listed below:) Mattress 1 no. Temp. Probe (Reusable) 03 nos Power cord 01 nos. Fuse set 02 nos. IV Pole of length at least 1 metre. One monitor tray Price for one additional monitor tray should be given separately.		
	15	The supplier should have local service facility. The service provider should have the necessary equipments recommended by the manufacturer to carryout preventive maintenance test as per guidelines provide in the service / maintenance manual.		
	16	The complete unit including the heating element should be CE 93/42 ("Conformité Européene") or US FDA certified.		
	17	Test certificate for the equipment to be submitted with the tender		
<b>30</b>		<b>Baby Incubators</b>	<b>2</b>	GE/Phoenix/Nice Neotech
	1	Should be a Microprocessor Controlled System with Air and Skin Modes of operation.		
	2	Should have 3 displays each for Air /Skin Set Temperature, Air Temperature, and Skin Temperature available in both Centigrade and Fahrenheit.		
	3	Should have a Feather Touch operation with large digital display and comprehensive alarms. Control Panel should be liquid proof and allow easy and hygienic disinfection.		
	4	Should have a memory backup to restore set temperature and control mode automatically in the event of power failure.		
	5	Should have an integral bed with trendle and fowler position adjustment of the bed angle and bed should be tiltable at both ends.		
	6	Should have Thermistor Temperature Probes, with accuracy of +/- .2°C,		
	7	Probe should be interchangeable without requiring calibration.		
	8	Should give unimpeded access to the patient with large front door and withdrawable baby tray.		
	9	Should have elbow operated ports to allow easy access and eliminate cross infections.		
	10	Should have an X-ray cassette compartment with X-ray scaling and catheter measuring scale.		
	11	Equipment should be easy to clean and disinfect.		
	12	Should have a High Intensity CFL Light for observation.		
	13	Should have Comprehensive alarms: Air Temp. Low / High, Skin Temp. Low / High, Air Flow Failure, Heater Failure, Probe Failure, Air / Skin, Temperature > 39 ° C, Power Failure, Fan Failure, System fail.		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
14		Heater should automatically cut off if air / skin temperature inside the incubator exceeds 39° C.		
15		Should have rust free and at least 4" Anti Static Castors.		
16		Should have IV Stand Facility.		
17		Should have a built-in thermometer.		
18		<b>Standards, Safety and Training</b>		
19		Should have the ISO certification		
20		The quoted model should have US FDA or CE (Conformité Européene) certificate		
21		<b>Documentation</b>		
22		User/Technical/Maintenance manual to be supplied in English		
<b>31</b>		<b>Photo Therapy Equipments</b>	<b>2</b>	GE/Phoenix/Nice Neotech
1		Should have a source unit with 4 Blue CFL Lamps and 2 white CFL Lamps.		
2		Should have an Irradiance level > 18μW/CM2/nm.		
3		Should have Internal and External Reflectors designed to avoid wastage of light rays by sending uniform rays to the bed surface.		
4		Should have a time totalizer to Measure the Hours of lamps usage		
5		Should be able to be positioned easily over cots, incubator, radiant heat cradles.		
6		Should have more mobility and easy adjustment of height and tilting of source unit.		
7		Chokes, if any, should be placed in the base unit, so that the extra heat dissipated from the choke will not reach the baby. Plastic Body is preferable to minimize heat radiation.		
8		Should have a wide base for rigidity.		
9		<b>Standards, Safety and Training</b>		
10		Should have the ISO certification		
11		The quoted model should have US FDA or CE (Conformité Européene) certificate		
12		<b>Documentation</b>		
13		User/Technical/Maintenance manual to be supplied in English		
<b>32</b>		<b>Neonatal Ventilator</b>	<b>2</b>	Drager/Hamilton
1		ventilator capable of ventilating from pre-mature to pediatric patients < 50 kgs. Principle of working should be Pressure limited, time cycled, continuous flow system.		
2		Multi microprocessor controlled system with individual selection of various ventilation parameters & PEEP. Rapid trigger response time for minimum work of breathing.		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
3		The ventilator should have a display screen brightness and contrast adjustable clearly displaying the mode of ventilation, alarm settings, measured rate display, set rate, inspiratory time, indicator of set mode, Pressure bar graph, sensitivity, breath type display, I:E ratio, digital display of peak inspiratory pressure, Peep alarm etc.		
4		It should have a pressure sensing device to synchronize the patient's natural breathing cycle with the ventilator with a maximum sensitivity of 0.10 cmH <sub>2</sub> O and a response time of 5 to 40 milliseconds depending on the sensitive setting.		
5		It should have a variable triggering facility which should be displayed as a graphical display on the screen.		
6		The system should be such that the Patient pressure delivered should be based on a reference pressure (Patient Circuit Pressure)		
7		Should have the following modes of ventilation:		
8		AC, SIMV/IMV, CPAP, CPAP with backup ventilation, Standby.		
9		The system should have the following parameters:		
10		FLOW: Adjustable 2 TO 32 LPM		
11		I:E RATIO 4:1 TO 1:10		
12		WAVEFORM : Adjustable TAPERED OR SQUARE		
13		EXP PRESSURE : 0 TO 20 cmH <sub>2</sub> O		
14		INS PRESSURE : 5 TO 70 cmH <sub>2</sub> O		
15		RATE : 2 TO 150 bpm		
16		INSP. TIME : 0.1 TO 3 SEC		
17		Should have following audio – visual alarms:		
18		High Inspiratory Pressure		
19		Low/Prolonged Inspiratory Pressure		
20		Low PEEP/Baseline Pressure		
21		Apnea		
22		High Respiratory Rate		
23		Loss/Low Electrical Power		
24		System Error/Vent Inop		
25		Loss of Inlet Gas		
26		Safety pressure relief valve adjustable from 15 to 85 cmH <sub>2</sub> O.		
27		Should be capable of delivering oxygen from 21% to 100%		
28		Electronically controlled manual breath to be based on the inspiratory pressure, time and waveform settings.		
29		Display of breath type should be seen on the display.		
30				

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
31		Two sets of patient tubes should be supplied with the system.		
32		Should have facility for ventilation data transfer		
33		Should be user-friendly & have sturdy design		
34		Should be CE ("Conformité Européene"), ISO and US FDA APPROVED system.		
35		The complete system should be supplied on a single trolley capable of holding the ventilator, compressor, humidifier, hose hanger and the electrical output should have a single output.		
36		<b>HUMIDIFIER:</b> Humidification system with reusable Infant / pediatric chamber capable of using in both manual and automatic mode. It should consist of reusable single heater wire with reusable temp probe and heater wire adapter		
37		<b>Standards, Safety and Training:</b>		
38		Should be US FDA and CE ("Conformité Européene") approved product		
39		Electrical safety conforms to standards for electrical safety IEC- 60601-1 General Requirements		
		<b>OPD Equipments</b>		
<b>33</b>		<b>ECG machine computerized</b>	<b>2</b>	GE/Schiller/Philips
1		<b>Operational Requirements</b>		
2		The ECG Machine should be able to acquire all 12 Leads simultaneously and interpret them dignostically.		
3		<b>Technical Specifications</b>		
4		Should acquire simultaneous 12 lead ECG for both adult and pediatric patients and interpret them dignostically.		
5		Should have Real time Colour display of ECG waveforms with signal quality indication for each lead		
6		Should have Artifact, AC, and low and high pass frequency filters of diagnostic quality		
7		Should have a storage memory of at least 100 ECGs with easy transfer by optional modem and data card.		
8		Should have large size full screen preview of ECG report for quality assessment checks prior to print.		
9		Should have interpretation facility of the amplitudes, durations and morphologies of ECG waveforms and associated rhythm for adult and pediatric patients		
10		Should have alphanumeric Keyboard for patient data Entry. (virtual or hard keys)		
11		Should have High resolution (200 dpix500dpi on 25 mm/sec speed) digital thermal printer		
12		Should have report formats of 3 x4; 6 x2, Rhythm for up to 12 selected leads; 12 Lead Extended measurements, 1 minute of continuous waveform data for 1 selected lead.		
13		Should have battery capacity of at least 30 ECGs or 30 minutes of continuous rhythm recording on single charge		
14		Should be able to be connected to HIS /LAN/Wireless LAN(OPTIONAL)		
15		Should display ECG on LCD/TFT Display of 640x480 pixel resolution.		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
16		USB Support (optional) for Storage on external portable memories.		
17		Multimode of ECG Storage capability on Flash Memory		
18		<b>System Configuration Accessories, spares and consumables</b>		
19		ECG Machine 12 Leads with Interpretation - 01		
20		Patient Cable -01		
21		Chest Electrodes Adult-(set of six) -02 sets.		
22		Chest Electrodes Paediatric-(set of six) -02 sets		
23		Limb Electrodes(set of 4)- 02 sets		
24		<b>Standards, Safety and Training</b>		
25		Should be US FDA or CE (Conformité Européene) or BIS approved product.		
26		Manufacturer should have ISO 9001 certification for quality standards.		
27		On site Comprehensive training for lab staff and support services till customer satisfaction with the system		
28		<b>Documentation</b>		
29		User / Technical / Maintenance manuals to be supplied in English.		
30		Certificate of calibration and inspection.		
34		<b>B.P.apparatus table model (Analog)</b>	10	Diamond/SISCO
35		<b>B.P.apparatus stand model (Analog)</b>	10	Diamond/SISCO
		<b>Gyanecology</b>		
36	1	<b>Foetal Doppler</b>	2	Hunteleigh/ Angelsounds/ Hi Bebe
	2	It should be LCD Display (55 mm x 27 mm)		
	3	It should be ultrasonic emitting frequency – 1 MHz and power - <5mW/cm <sup>2</sup>		
	4	Overall sensitivity at the distances 200mm from the face of the probe >=90db		
	5	Automatic FHR test range 30-240 BPM (beat/minute)		
	6	Resolution – 1 BPM		
	7	Audio output – 1 W		
	8	Battery voltage – 3 x 1.2V (alkaline battery)		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
	9	<b>Standards, Safety and Training</b>		
	10	Should be US FDA or CE (Conformité Européene) or BIS approved product.		
	11	Manufacturer should have ISO 9001 certification for quality standards.		
	12	On site Comprehensive training for lab staff and support services till customer satisfaction with the system		
	13	<b>Documentation</b>		
	14	User / Technical / Maintenance manuals to be supplied in English.		
	15	Certificate of calibration and inspection.		
		<b>ENT</b>		
<b>37</b>		<b>Audiometer</b>	<b>1</b>	Otometrics/ Interacoustics / Maico
	1	Light weight with suitable carrying case to accommodate the main unit and accessories.		
	2	-Channels:2 separate channels with independent attenuators.		
	3	-Test frequencies 250Hz to 8000Hz		
	4	-Hearing level range :		
	5	-air-conduction 10db to 120 db		
	6	-bone -10db to 80db(apprx)		
	7	-masking 10db to 90 db (apprx) narrow band, wide band		
	8	-Attenuator: 2.5db and 5 dB steps		
	9	-Stimulus: continuous pulsed or warable tone		
	10	-Total Harmonic distortion:		
	11	air: less than 2.5 % / bone: less than 5%		
	12	<b>*Display</b>		
	13	-Power supply : suitable mains adapter: 230 VAC		
	14	<b>Standard accessories</b>		
	15	-Microphone -Headphone		
	16	-Patients' response switch required by the system		
	17	-Power cord-Bone vibrator		
	18	-Carrying case to accommodate the main unit & accessories		
	19	-Headphone TDH 39 and TDH 49		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
38		<b>Operating Microscope (ENT)</b>	1	Carl zeiss/ Leica/Moller wedel
	1	Manual 5-step magnification changer with apochromatic optics, magnification factors 0.4x-0.6x-1.0x-1.6x-2.5x; integrated green and orange filters		
	2	Objective lenses f=200 mm, 300 mm (with manual focusing mechanism and sterilizable rubber cap, range: minimum 13 mm) and f=400 mm (mount diameter 48 mm)		
	3	Straight binocular tube f=170 mm, interpupillary distance adjustment from 55 mm to 75 mm		
	4	Pair of widefield push-in eyepieces 10x with sleeves and magnetic locks, diopter setting from -8D to +5D		
	5	With objective lens f=200 mm and eyepieces 10x:		
	6	Magnifications 3.4x-5.1x-8.5x-13.6x-21.3x		
	7	Visual Field Diameter 61.8-41.2-24.7-15.5-10.0 mm		
	8	120 inclined coupling		
	9	Front side handgrips		
	10	Coaxial fibre optic illumination system 12V 100W		
	11	Dual lamp system with quick change over		
	12	Continuously lamp intensity adjustment by control knob near to the surgeon		
	13	Automatic on/off switch for the lamp		
	14	Stable and sturdy floor stand on four lockable castors, column (height: minimum 1.7 m), spring-balance articulated arm, carrier arm, power supply unit, light guide 2 m, power cable 6 m		
	15	Sterilizable rubber caps for all knobs, dust cover, spare halogen lamp 12V 100W (12 Nos.)		
	16	Standards, Safety and Training		
	17	Should be US FDA or CE (Conformité Européene) or BIS approved product.		
	18	Manufacturer should have ISO 9001 certification for quality standards.		
	19	On site Comprehensive training for lab staff and support services till customer satisfaction with the system		
	20	Documentation		
	21	User / Technical / Maintenance manuals to be supplied in English.		
	22	Certificate of calibration and inspection.		
39		<b>ENT Operation set including headlight</b>	2	SISCO

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
		One No of each instrument as below		
		<b>LARYNGOTOMY SET -</b>		
1		BACKHAUS TOWEL CLAMPS 110mm		
2		B.P HANDLE NO.3		
3		B.P. BLADE, ISI "LISTER", SIZE: 10, (BOX OF 100)		
4		B.P. BLADE, ISI "LISTER", SIZE:15, (BOX OF 100)		
5		LANGENBECK RETRACTOR 215mm,35X15mm " "		
6		LANGENBECK RETRACTORS 215mm,40X11mm " "		
7		KOCHER BONE HOOK SHARP 220MM " "		
8		VOLKMANN RETRACTOR SHARP 4 PRONGS220mm " "		
9		SCHONBORN UVULA HOOK 230MM " "		
10		HALSTED MOSQUITO ARTERY FORCEPS CD.125mm " "		
11		CRILES HAEMOSTATIC FORCEPS CD.140mm " "		
12		HALTSED FORCEPS CURVED 1X2 TEETH125MM, " "		
13		STANDARD DISSECTING FORCEPS PLAIN150mm " "F		
14		STD DISSECTING FORCEPS TOOTHED150mm " "		
15		ADSONS DISSECTING FORCEPS PLAIN125mm " "		
16		DRESSING SCISSORS SH/BL ST. 150mm" " S/F		
17		JOSEPH SCISSORS ST.150mm " "		
18		METZENBAUM SCISSORS CURVED 150mm" "		
19		LEXER DISSECTING SCISSORS CURVED165MM, " "		
20		WILLIGIER RASPATORIES 8MM, 160MM " "		
21		JANSEN BONE RONGEURS SINGLE ACTIONST. 175mm " "		
22		KILLIAN LARYNGECTOMY SCISSOR DOUBLE ACTION 200MM " "		
23		CZERNY UTERINE TENACULUM FORCEPS4X4 PRONGS 200MM " "		
24		KOEINIG GUIDING PROBE NARROWFLAT 200MM. " "		
25		KOCHER GUIDING PROBE150MM " "		
26		DESCHAMPS-BLUNT LIGATURE RIGHT210mm " "		
27		DESCHAMPS-BLUNT LIGATURE LEFT210mm " "		
28		FERGUSSON SUCTION CANNULA WITH FINGER CUT-OFF AND STYLET 5.0MM, 180MM " "		
29		DEBAKEY NEEDLE HOLDERS STANDARD150MM T.C. TIP " "		
30		TRACHEOSTOMY TUBE, GERMAN SILVER"CH. JACKSON", SIZE: 18,24,30& 36 (EACH SIZE)		
31				
32				
33		<b>TYMPANOPLASTY SET - " " - CONSISTING OF:</b>		



Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
34				
35		LEMPERT EAR RASPATORY NARROW STRAIGHT 160MM " "		
36		PLESTER SICKEL KNIFE SLIGHTLY CURVED 160MM " "		
37		PLEASTER FLAP KNIFE R/CUTTING BLADE IN LINE WITH SHF. 2.4 X 3.5MM, 160MM " "		
38		PLEASTER FOOT PLATE KNIFE STRAIGHT 160MM " "		
39		PLESTER SCRAPER 60 DEG. ANG. FOR ROUGHENING OF TYMPANUM SURFACE 160MM " "		
40		MICRO EAR HOOK STRAIGHT SHAFT SLIGHTLY ANGLED AT TIP 160MM " "		
41		PLESTER FOOT PLATE HOOK 90 DEG. ANGLED 160MM " "		
42		DOUBLE ENDED SPOON SHAPED ELEVATOR 180MM " "		
43		WULLSTEIN MICRO CUPPED FORCEPS STRAIGHT OVAL JAW 0.8 X 1.3MM SHAFT 80MM " "		
44		WULLSTEIN MICRO CUPPED FORCEPS CURVED UP OVAL JAW 0.9 X 1.0MM SHAFT 80MM " "		
45		BELLUCCI MICRO SCISSOR CURVED TO THE RIGHT SHARP X SHARP SHAFT 80MM " "		
46		PLESTER SUCTION CANNULA WITH FINGER CUT-OFF, & STYLET 1.5MM, 195MM " "		
47		PLESTER SUCTION CANNULA WITH FINGER CUT-OFF, & STYLET 2.5MM, 195MM " "		
48		PLESTER SUCTION CANNULA WITH FINGER CUT-OFF, & STYLET 3.0MM, 195MM " "		
49		MOLLISON S/R RETRACTOR 4 X 4 PRONGS SHARP 150mm " "		
50		PLESTER S/R RETRACTOR BLUNT LEFTLENGTH 110mm,25X18mm " "		
51		PLESTER S/R RETRACTOR BLUNT RIGHTLENGTH 110mm,18X25mm " "		
52		EAR RASPATORY CURVED 8MM, 165MM " "		
53		ROSEN ROUND CUTTING KNIFE 45 DEG. ANG. STR. TIP DIA:2.6MM, 160MM " "		
54		SHAMBAUGH EAR FENESTRA HOOK 90 DEG. ANGLED 0.4MM, 160MM " "		
55		SHAMBAUGH EAR FENESTRA HOOK 90 DEG. ANGLED 0.8MM, 160MM " "		
56		SHAMBAUGH EAR FENESTRA HOOK 90 DEG. ANGLED 1.0MM, 160MM " "		
57		PLESTER ANTRUM HOOK 90 DEG. ANGLED CYLINDRIC TIP 160MM " "		
58		PLESTER ANTRUM HOOK 45 DEG. ANGLED WITH BUTTON TIP 160MM " "		
59		BUCK EAR CURETTE, CURVED SHARP 3.0MM, 150MM " "		
60		BUCK EAR CURETTE, CURVED SHARP 2.5MM, 150MM " "		
61		HALSTEAD MOSQUITO ARTERY FORCEPS ST125mm " "		
62		PLESTER SUCTION CANNULA WITH FINGER CUT-OFF AND STYLE 2.0MM, 195MM " "		
63				
64		<b>MASTOIDECTOMY SET - " " - CONSISTING OF:</b>		
65				
66		RAMPLEY SPONGE HOLDING DRESSINGFORCEPS 250mm " "		
67		BACKHAUS TOWEL CLAMPS 85mm " "		
68		B.P.HANDLE NO.7 " "		

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Dr. B. R. Satpathi 17.12.2015  
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Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
69		GILLIES TISSUE FORCEPS 1x2 TEETH150mm " "		
70		MCINDOE DISSECTING FORCEPS 150mm" "		
71		MAYOS SCISSORS CD 135mm " "		
72		IRIS SCISSORS STRAIGHT 115mm" "		
73		HALSEY NEEDLE HOLDERS SERRATED130MM " "		
74		JENKINS GOUGES 3mm,140mm " "		
75		JENKINS GOUGES 4mm,140mm " "		
76		JENKINS GOUGES 6mm,140mm " "		
77		JENKINS GOUGES 8mm,140mm " "		
78		JENKINS GOUGES 10mm,140mm " "		
79		TILLY NASAL DRESSING FORCEPS 160mm" "		
80		KRAUSE NASAL POLYPUS SNARE KNEE SHAPED 250MM " "		
81		KILLIAN SEPTUM SPECULUM SCREW JOINT 7.0 X 90MM, 145MM " "		
82		THUDICUM NASAL SPECULUM 8.5 X 6.0 X 70MM " "		
83		THUDICUM NASAL SPECULUM 8.5 X 6.0 X 70MM " "		
84		THUDICUM NASAL SPECULUM 8.5 X 6.0 X 70MM " "		
85		THUDICUM NASAL SPECULUM 8.5 X 6.0 X 70MM " "		
86		THUDICUM NASAL SPECULUM 8.5 X 6.0 X 70MM " "		
87		COTTLE MALLET WEIGHT 240GMS " "		
88		GILLIES SKIN HOOK 185mm " "		
89		JANSEN CURETTE DOUBLE ENDED 160MM " "		
90		HOWARTH NASAL RASP. DOUBLE ENDED 230MM " "		
91		VOLKMANN RETRACTOR SHARP 4 PRONGS220mm " "		
92		JANSEN SELF RETAINING RET. BLUNT3X3 PRONGS 105mm " "		
93		WETLANER SELF RETAINING RETRACTORBLUNT 3 x 4 PRONGS 165mm " "		
94		MOLLISON S/R RETRACTOR 4X4 PRONGSSHARP 150mm " "		
95		LEMPERT CURETTES FIBRE HANDLEFIG.0000,1.8mm 215mm " "		
96		LEMPERT CURETTES FIBRE HANDLEFIG.0,2.6mm 215mm " "		
97		CAWTHORNE NIBBLING FORCEPS NARROW JAW 3MM, 160MM " "		
98		ADITUS SEEKER & CURRETE " "		
99		FREER ELEVATOR CURVED SIDEWARDS 187MM " "		
100		RUSKIN BONE RONGUER DOUBLE ACTION190mm " "		
101		KERRISON PITUITARY PUNCH 40DEG. UPCUTTING 3mm x 180mm " "		
102		LEMPERT SUCTION AND IRRIGATION TUBE (SET OF 4) " "		
103				

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Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
104				
105		<b>RHINOPLASTY SET - " " - CONSISTING OF:</b>		
106				
107		RAMPLEY SPONGE HOLDING DRESSINGFORCEPS 250mm " "		
108		B.P HANDLE NO.3		
109		BACKHAUS TOWEL CLAMPS 85mm " "		
110		HALSTED MOSQUITO ARTERY FORCEPS CD.125mm " "		
111		HALSTED MOSQUITO ARTERY FORCEPS 1 X 2 TEETH, CURVED 125MM " "		
112		STEAVENTS TENOTOMY SCISSORS 4" STR. " "		
113		FOMON LOWER LATERAL SCISSOR STRONGLY CURVED 135MM " "		
114		DRESSING SCISSORS SH/BL CD. 150mm" "		
115		GRAEFE TISSUE FORCEPS WITH SHARP TEETH 110MM " "		
116		IRIS FORCEPS STRAIGHT 10CM " "		
117		IRIS FORCEPS STRAIGHT TOOTHED 10CM " "		
118		COTTLE COLUMELLA CLAMP WITH FIXATION BEARING & ADJ. SCREW 100MM " "		
119		TROELTSCH EAR DRESSING FORCEPS KNEE SHAPED TIP 1.8MM SERR. 115MM " "		
120		DIRECTOR WITH ANEURYSM NEEDLE110mm" "		
121		AUFRICHT RETRACTOR SPECULUM 160MM " "		
122		WEIL-BLAKESLEY ETHMOIDAL FORCEPS4.2mm X 120mm " "		
123		GILLIES SKIN HOOK 185mm " "		
124		COTTLE RETRACTOR 4 PRONGS 140MM " "		
125		TONGUE DEPRESSOR SMALL 13mm" "		
126		TONGUE DEPRESSOR MEDIUM 19mm" "		
127		TONGUE DEPRESSOR LARGE 22mm " "		
128		LIST BONE CUTTER ANGLED SINGLE ACTION 200MM " "		
129		JANSEN BONE RONGEURS SINGLE ACTIONCD. 175mm " "		
130		ASH SEPTUM STRAIGHTENING FORCEPS 220MM " "		
131		JANSEN MIDDLETON NASAL FORCEPS SPOON SHAPED BITING 200MM " "		
132		WALSHAM SEPTUM STRAIGHTENING FORCEPS RIGHT 210MM " "		
133		WALSHAM SEPTUM STRAIGHTENING FORCEPS LEFT 210MM " "		
134		COTTLE MALLET WEIGHT 240GMS " "		
135		COTTLE SEPTUM KNIFE 150MM " "		
136		LANDOLT PERIOSTEAL ELEVATORS SEMI-SHARP WIDTH 5mm 175mm " "		
137		ADSON PERIOSTEAL ELEVATORS SHARPWIDTH 5mm 165mm " "		
138		SUCTION CANNULA FOR NOSE, CURVED16CM, 5MM DIA " "		

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Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
139		COTTLE OSTEOTOMES 4mm,180mm" "		
140		COTTLE OSTEOTOMES 6mm,180mm" "		
141		COTTLE OSTEOTOMES 8mm,180mm" "		
142		COTTLE OSTEOTOMES 10mm,180mm" "		
143		JENKINS GOUGES 4mm,140mm" "		
144		JENKINS GOUGES 6mm,140mm" "		
145		JENKINS GOUGES 8mm,140mm" "		
146		JENKINS GOUGES 10mm,140mm" "		
147		JOSEPH NASAL RASPATORIES 180mm" "		
148		JOSEPH NASAL RASPATORIES 180mm" "		
149		SCHNIDT TONSIL ARTERY FORCEPS SLIGHTLY CURVED 185MM" "		
150		HALSEY NEEDLE HOLDERS SERRATED130MM" "		
151		CRILE WOOD NEEDLE HOLDERS 150mm" "		
152		<b>MYRINGOPLASTY SET - " " - CONSISTING OF:</b>		
153		B.P HANDLE NO.3		
154		HALSTED MOSQUITO ARTERY FORCEPS CD.125mm" "		
155		SPONGE HOLDING DRESSING FORCEPS250mm" "		
156		BACKHAUS TOWEL CLAMPS 110mm" "		
157		METZENBAUM SCISSORS CURVED 200mm" "		
158		HARTMANN EAR FORCEPS SERRATED JAWS, 1X2 TEETH 2 X 6MM SHAFT STRAIGHT 80MM - " "		
159		HARTMANN EAR FORCEPS SERRATED JAWS 1 X 8MM SHAFT STRAIGHT 80MM - " "		
160		MICRO EAR ALLIGATOR FORCEPS CURVED DOWN 45DEG JAW 0.8MM X 3.5MM SHAFT 80MM " "		
161		TOYNBEE EAR SPECULUM ADULT SET OF 3		
162		SENN MILER SKIN RETRACTOR 165mm" "		
163		MAYO HEGARS NEEDLE HOLDERS 150mm" "		
164		STD DISSECTING FORCEPS TOOTHED150mm" "		
165		MAYOS SCISSORS ST. 160mm" "		
166		HARTMANN - WULLSTEIN EAR FORCEPS FOR EXAMINATION EXTRA FINE PATTERN, 0.8 X 6M SHAFT STRAIGHT 80MM " "		
167				
168				
169		<b>TONSILLECTOMY SET - " " - CONSISTING OF:</b>		
170				
171		SCHNIDT TONSIL ARTERY FORCEPS SLIGHTLY CURVED 185MM" "		
172		TONSIL ARTERY FORCEPS 8" STRAIGHT" "		
173		IRWIN MOORE TONSIL HOOK TYPE 180MM" "		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
	174	BRAIN TISSUE GRASPING FORCEPS 3 X 3 PRONGS 155MM " "		
	175	WHITE TONSIL HOLDING FORCEPS 180MM " "		
	176	BEAVIOS PILLAR RETRACTOR DOUBLE END " "		
	177	EVES TONSIL SNARE 250MM " "		
	178	NEGUS KNOT TIER FLAT HANDLE 9" " "		
	179	LUC SEPTUM FORCEP WITH FENESTRATED JAW SHAFT 9MM X 12MM, 200MM " "		
	180	ST CLAIR THOMPSON ADEN.CURETTE FIB.HANDLE WITH CAGE 8mm 215mm " "		
	181	ST.CLAIR THOMPSON ADEN.CURETTE FIB.HANDLE WITH CAGE 10mm 215mm		
	182	METZENBAUM SCISSORS CURVED 150mm" "		
	183	LANDOLT SUCTION CANNULA O.D. - 3MM SHAFT-8MM, 150MM " "		
	184	FINE DISSECTING FORCEPS TOOTHED200mm " "		
	185	FINE DISSECTING FORCEPS PLAIN200mm " "		
	186	DOYENS MOUTH GAG ANAESTHETIC" "		
	187	BACKHAUS TOWEL CLAMPS 150mm" "		
<b>40</b>		<b>ENT Nasal Set</b>	<b>1</b>	SISCO/Venus
	1	<b>THYROIDECTOMY SET - " " - CONSISTING OF:</b>		
	2			
	3	MAIER SPONGE & DRESSING FORCEPSWITH RATCHET 265MM CD. " "		
	4	BACKHAUS TOWEL CLAMPS 110mm " "		
	5	BACKHAUS TOWEL CLAMPS 125mm" "		
	6	B.P.HANDLE NO.4 " "		
	7	B.P HANDLE NO.3		
	8	METZENBAUM SCISSORS TC TIP CD 180mm" "		
	9	METZENBAUM SCISSORS TC TIP CD200mm " "		
	10	MAYO-LEXER SCISSOR CURVED165mm,T/C TIP " "		
	11	DRESSING SCISSORS SH/BL ST. 150mm" "		
	12	STANDARD DISSECTING FORCEPS PLAIN150mm " "		
	13	STD DISSECTING FORCEPS TOOTHED150mm " "		
	14	STANDARD DISSECTING FORCEPS TOOTHED18cm " "		
	15	DEBAKEY DISSECTING FORCEP TRAUMANILJAWS ST. 2mm 150mm " "		
	16	HALSTED MOSQUITO ARTERY FORCEPS CD.125mm " "		
	17	HALSTEAD FORCEPS, CURVED, 1 X 2TEETH, 125MM " "		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
18		KOCHERS HAEMOSTATIC FORCEPS STRAIGHT 150MM " "		
19		KOCHERS HAEMOSTATIC FORCEPS ST.200mm " "		
20		BABY MIXTER LIGATURE FORCEPS 185mm" "		
21		OVERHOLT GEISSENDOERFER, DISSECTING FORCEPS 210MM " "		
22		OVERHOLT GEISSENDOERFER, DISSECTING FORCEPS 220MM " "		
23		BRAUN TISSUE GRASPING FORCESP 4 X 4 PRONGS 155MM " "		
24		BABCOCK TISSUE GRASPING FORCEPSATRAUMATIC JAW 150mm " "		
25		ALLIS TISSUE GRASPING FORCEPSATRAUMATIC JAW 200mm " "		
26		DESCHAMPS-BLUNT LIGATURE RIGHT210mm " "		
27		DESCHAMPS-SHARP LIGATURE RIGHT210mm " "		
28		PARYS RECTAL DISSECTOR 200MM " "		
29		CRILE WOOD NEEDLE HOLDERS145mm T.C. TIP " "		
30		MAYO HEGAR NEEDLE HOLDER T/C TIP200MM " "		
31		DEBAKEY NEEDLE HOLDER STANDARD180MM T.C. TIP " "		
32		VOLKMANN RETRACTOR SHARP 4 PRONGS220mm " "		
33		ROUX RETRACTORS 165mm,19X22mm,23X30mm " "		
34		ROUX RETRACTOR 165mm,25X26mm,28X38mm " "		
35		ROUX RETRACTOR 165mm,28X29mm,33X45MM " "		
36		KOCHERS RETRACTORS 230mm" "		
37		JOLLS S/R TWIN CLAMP 155mm " "		
		<b>S.M.R. SET - CONSISTING OF:</b>		
38		B.P.HANDLE NO.7 " "		
39		ADSON PERIOSTEAL ELEVATORS CURVEDBLUNT WIDTH 6mm 170mm " "		
40		THUDICHUM NASAL SPECULUM." " (SET OF 7)		
41		LEMPERTS ENDURAL SPECULAM" "		
42		TILLEY HARPOON TROCAR WITH FIBRE HANDLE 171MM " "		
43		FINE SUCTION TIP." "		
44		KILLIAN CLAUS SEPTUM GOUGE WITH NOTCH BAYONET SHAPED 170MM " "		
45		LUC SEPTUM FORCEPS WITH FENESTRATED JAWS SHAFT - 9MM X 12MM, 200MM " "		
46		JOSEPH NASAL RASPATORIES 180mm" "		
47		TILLEY ANTRUM BURS FOR BREAKING DOWN THE FRONTO-ETHMOIDEL CELLS WITH FIBRE HANDLE - 6MM, 171MM " "		
48		TILLY NASAL DRESSING FORCEPS 160mm" "		
49		STD DISSECTING FORCEPS TOOTHED150mm " "		
50		SCHADEL TOWEL CLAMPS 90mm " "		
51		MAYO HEGARS NEEDLE HOLDERS 150mm" "		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
52		METZENBAUM SCISSORS CURVED 150mm" "		
53		HOWARTH NASAL RASP DOUBLE ENDED230mm" "		
		<b>MICRO LARYNGEAL SURGERY SET - " " - CONSISTING OF:</b>		
54		MICRO LARYNGEAL GRASPING FORCEPSSHAFT STRAIGHT 250MM " "		
55		MICRO LARYNGEAL GRASPING FORCEPSSHAFT CURVED TO LEFT 250MM " "		
56		MICRO LARYNGEAL GRASPING FORCEPSSHAFT CURVED TO RIGHT 250MM " "		
57		MICRO LARYNGEAL CUP SHAPED FORCEPCUP D:2MM SHAFT STR. 250MM " "		
58		MICRO LARYNGEAL CUP SHAPED FORCEPCUP D:2MM SHAFT CVD. TO LEFT 250MM		
59		MICRO LARYNGEAL CUP SHAPED FORCEPCUP D:2MM SHAFT CVD. TO RIGHT 250MM		
60		MICRO LARYNGEAL CUP SHAPED FORCEPCUP D:2MM SHAFT UPWARD ANGLED 250MM		
61		MICRO LARYNGEAL SCISSOR SHAFTSTRAIGHT 250MM " "		
62		MICRO LARYNGEAL SCISSOR SHAFTCURVED TO LEFT 250MM " "		
63		MICRO LARYNGEAL SCISSOR SHAFTCURVED TO RIGHT 250MM " "		
64		MICRO LARYNGEAL SCISSOR SHAFTUPWARD ANGLED 250MM " "		
65		WEERDA CARTILAGE FORCEPS1 X 2 TEETH, 250MM " "		
66		WEERDA LARYNGEAL NEEDLE HOLDER225MM " "		
67		MICRO LARYNGEAL CUP SHAPED FORCEPSSTR. OVAL JAW 2 X 3MM, 250MM		
68		LARYNGEAL CUTTING FORCEPS WITHFENESTRATED JAW SH. STR.250MM		
69		LARYNGEAL BIOPSY PUNCH 90 DEG.ANGLED 250MM " "		
70		HANDLE FOR USE WITH LARYNGEALINSTRUMENTS " "		
71		MICRO LARYNGEAL SICKLE KNIFE SHAFT250MM " "		
72		MICRO LARYNGEAL SICKLE KNIFESHAFT, HORIZONTAL 250MM " "		
73		MICRO LARYNGEAL SICKLE KNIFESHAFT, VERTICAL 250MM " "		
74		MICRO LARYNGEAL ROUND CUTTING KNIFE45 DEG. ANGLED SHAFT 250MM " "		
75		MICRO LARYNGEAL HOOK 90 DEG. ANG.BLUNT SHAFT 250MM " "		
76		MICRO LARYNGEAL PROBE 30 DEG.BACKWARD CURVED SHAFT 250MM " "		
77		MICRO LARYNGEAL SUTURE GUIDE FORKSHAPED SHAFT 250MM " "		
<b>41</b>		<b>Laryngoscope fibreoptic ENT</b>	<b>5</b>	SISCO
	1	Should have swiveling blade tip facilitates difficult intubation.		
	2	The flexible tip with Macintosh Laryngoscope Blade should be adjustable through 70°.		
	3	A lever controls the tip angle during intubation to lift the epiglottis, giving a clear view of the vocal cords.		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
	4	System should be capable of avoiding unnecessary pressure on the tongue and soft tissue.		
	5	Should have alternative of LED or Xenon Halogen Lamp illumination facility.		
	6	Should have Integrated Fiber Optics with 6000 or more individual micro-fibers for light transmission and illumination.		
	7	Should have High quality stainless steel construction.		
	8	Should have measures to prevent damage to teeth and soft tissue.		
	9	Should be capable of withstanding standard autoclave cycle.		
<b>42</b>		<b>Laryngoscope indirect</b>	<b>2</b>	SISCO
<b>43</b>		<b>Otoscope</b>	<b>2</b>	Heine/Keeler
	1	Should be of compact and handy design		
	2	Should have bright Xenon Halogen lamp illumination with concentrated white light.		
	3	Should have 3 x magnifications		
	4	Casing surface should have minimal reflection.		
	5	Should have swiveling viewing window		
	6	Should have automatically Switch off facility when placed in pocket.		
	7	Should have high-quality sturdy and non-slip handle		
	8	Should be compatible with replaceable AA batteries		
<b>44</b>		<b>Head Light (cold light)</b>	<b>2</b>	Heine/Keeler
	1	Should have comfortable head band fully adjustable spot selection		
	2	Should be bright white light without temperature increase		
	3	should be available with double outlet		
	4	The front cable adapter is suitable for all reputed companies Cable fitting.		
	5	Brilliant dual halogen illumination 24V-150/250W Halogen bulbs compact and light weight equipment.		
	6	Should have facility for easy replacement of lamps		
	7	Should have auto cut illumination control		



Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
	8	Should have heat filter and low noise cooling fan		
	9	Length of Fiber Optic Cable should be more than 2.0 Meter		
<b>45</b>		<b>Sound Proof Room</b>	<b>1</b>	Fabrication
	1	Sound proof Room fabrication to be compatible for Audiometer		
	2	Standards, Safety and Training		
	3	Should be US FDA or CE (Conformité Européene) or BIS approved product.		
	4	Manufacturer should have ISO 9001 certification for quality standards.		
	5	On site Comprehensive training for lab staff and support services till customer satisfaction with the system		
	6	Documentation		
	7	User / Technical / Maintenance manuals to be supplied in English.		
	8	Certificate of calibration and inspection.		
		<b>Ophthalmology</b>		
<b>46</b>		<b>Snellen chart/Drum with remote</b>	<b>1</b>	Appasamy/AOL/heine
	1	Features: Should have the following charts – Snellen’s Charts (English and Tamil), Tumbling E chart, Landolt’s broken ring chart.		
	2	<b>Digital LCD Visual Acuity Chart</b>		
	3	LCD Type - 17-inch LCD		
	4	Resolution - 1280 × 1024		
	5	(20’ LCD Monitor) – with remote –		
	6	VA Chart Type - Snellen’s Charts (English, Hindi and Numerals), Tumbling E chart, Landolt’s broken ring chart, Contrast Sensitivity Chart, Picture Charts, Single Optotype Chart, LogMar Vision Chart, ETDRS Chart, Red/Green Testing		
	7	Isolation - Single Letter, Horizontal		
	8	Special Chart type - Dots, Astigmatism, Fixation, Red-Green, Amsler Grid, Color Blindness		
	9	Chart Change Over Device - Remote Control		
	10	Range - 6ft,10ft,20ft(2m,3m & 6m)		
	11	Standard Accessories - Remote Control, Multipurpose Screws(X2)		
	12	Floor stand to be provided		
	13	Should work on 230V,50 Hz power supply.		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
	14	Should be CE (Conformité Européene) or ISO approved Product		
47		<b>Trial lens sets with frames</b>	1	Appasamy/AOL/heine
	1	Should be supplied with set of 226 trial lens with durable metal frame		
	2	<b>Technical Specification</b>		
	3	<b>Lens set</b>		
	4	Set of 226 trial lenses with polished metal rims in an elegant carrying case.		
	5	70 Spherical Concave Lenses: 0.12 to 20.00 Diopters (0.25D increments)		
	6	70 Spherical Convex Lenses: 0.12 to 20.00 Diopters (0.25D increments)		
	7	34 Cylindrical Concave Lenses: 0.12 to 6.00 Diopters (0.25D increments)		
	8	34 Cylindrical Convex Lenses: 0.12 to 6.00 Diopters (0.25D increments)		
	9	12 Prismatical Lenses: 0.5(2), 1(2), 2(2), 3, 4, 5, 6, 7, 8		
	10	6 Accessory Lenses: Red, Green, Slit, Dark, Aperture(2)		
	11	<b>Metal Frame</b>		
	12	Should be durable and light weight		
	13	Number of lenses which can be inserted in to left or right lensframe simulataneously:4 pieces		
	14	Degree of lens rotation around optical axis in the lens frame:360 degree		
	15	Horizontal and vertical bridge adjustments. Free-rocking saddle bridge assures comfortable nose fit.		
	16	Range of nose rest adjustment Length:0 ~ 14 mm,angle:0 ~ 30 degree		
	17	Separate PD adjustment for each eye to compensate for asymmetrical factors in facial structure. PD of both eye: 48 ~ 80 mm Left or right PD: 24 ~40 mm		
	18	Individual adjustments for temple length and angle.		
	19	Adjustment for rotating cylinders to correct axis.		
	20	Scales with large, easy-to-read numerals.		
	21	Should be CE (Conformité Européene) or ISO approved Product		
48		<b>Log Mar Vision Charts</b>	1	Appasamy/AOL/heine
	1	Should be made using high contrst letters on washable polystyrene		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
	2	The progression of letter height is that any line is 1.2589 times greater than the line below. This multiplier is the root of ten or 0.1 log unit. Therefore, a three line worsening of visual acuity is equal to a doubling of the visual angle regardless of the initial acuity		
	3	The charts are designed for use at 4 metres which helps with smaller examining rooms		
	4	<b>Should be CE (Conformité Européene) or ISO approved Product</b>		
<b>49</b>		<b>Ophthalmoscope - Direct</b>	<b>2</b>	Heine/Well allyn/Keeler
	1	Modular wall unit		
	2	Standard - 2 instrument bays		
	3	2 meter spiral cord handles with magnetic automatic on/off and ceramic rheostats.		
	4	Dismantable Direct Ophthalmoscope and Streak Retinoscope heads.		
	5	<b>Should be CE (Conformité Européene) or ISO approved Product</b>		
<b>50</b>		<b>Slit Lamp</b>	<b>1</b>	Appasamy/ Haagstraight/Topcon
	1	Front lens f : 105 mm.		
	2	Angle of optical axes : 13°		
	3	Total Diameter of Magnification field: 5 Step magnification		
	4	Binocular tube f 132 for convergent viewing		
	5	Range of pupillary distance : 52-78 mm		
	6	Slit width: 0-12mm or better		
	7	Slit length adjustable in steps 0.1 – 14mm		
	8	Slit angle continuous +90 to -90		
	9	Diaphragm Sizes 0.2 to 14mm		
	10	Rotation: 0-180 degrees		
	11	Light source- Tungsten bulb		
	12	Filters: Cobalt blue, red free, neutral, UV protection		
	13	<b>Should be CE (Conformité Européene) or ISO approved Product</b>		
<b>51</b>		<b>Retino scope</b>	<b>2</b>	Welch Allyn /Appasamy/Haag Streit/Topcon
	1	Sturdy and Simple in Construction, Compact , Working distance of 50 Cm		
	2	and a +-2.0D		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
	3	Should be CE (Conformité Européene) or ISO approved Product		
52		<b>Perimeter</b>	1	Haag Streit/Appasamy/ /Topcon
1		Operating Range – 50deg. To 104deg. F (10deg. To 40deg.C)		
2		Operating Humidity – 35 to 85% (non-conductivity)		
3		Target Size – Goldmann III Size		
4		Method of Presentation – Rear Projection LED		
5		Luminance Range – 0.01 to 1000 Apostilbs (50 to 10dB)		
6		Number of Stimuli – 133		
7		Luminance Accuracy - +/- 0.5dB		
8		Colour – Pale Green		
9		Duration – 0.2 to 0.5 sec in 0.2 sec increment		
10		Interval – 0.3 to 4.9 sec in 0.2 sec increment		
11		Spatial Angle - +/- 70deg. Horizontal, 55/-65 deg. Vertical		
12		Fixed at – 31.5 Apostilbs		
13		Luminance Accuracy - +/- 0.5dB		
14		Electro-optical monitoring of eye position		
15		HK fixation control		
16		Should be CE (Conformité Européene) or ISO approved Product		
53		<b>Ophthalmic Dr Chair</b>	1	Appasamy/ Biomedix/Topcon
1		With full motorized recline facilities		
2		With full motorized up & down movements for 300mm		
3		With illuminating soft light for examination		
4		With controls for ophthalmic chair		
5		For “up& down” movement tool pedal is also provided as an additional option.		
6		Back and forward by motorized system		
7		Height – 7.6”		
8		Length – after reclining 9.6”		
9		Should be CE (Conformité Européene) or ISO approved Product		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
54		<b>Keratometre</b>	1	Appasamy/ Biomedix/Topcon
	1	<b>KERATOMETRY</b>		
	2	Radius of curvature:5.5 to 10 mm (Increments: 0.01mm)		
	3	Corneal power:33.75 to 61.25 D when cornea equivalent refractive index is 1.3375 (Increments: 0.05D, 0.12D, 0.25D)		
	4	Axis:1° to 180° (Increments: 1°)		
	5	Corneal periphery:Measurement area: 30°		
	6	when radius of curvature is 8mm		
	7	<b>CORNEAL DIAMETER MEASUREMENT</b>		
	8	Corneal diameter:2.0 to 16.0 mm (Increments: 0.1mm)		
	9	Retroillumination:Available;		
	10	2 images can be stored in memory		
	11	Built-in printer		
	12	Should work on 230 V,50 Hz		
	13	Power-saving system should be available		
	14	<b>Acessories,Spare and Consumable</b>		
	15	Motorized table		
	16	Keratometry model eye (with contact lens holder)		
	17	Printing paper		
	18	Chin rest paper		
	19	Blower brush		
	20	Dust cover		
	21	<b>Should be CE (Conformité Européene) or ISO approved Product</b>		
55		<b>Auto Refractometer</b>	1	Canon/Nidek/Topcon
	1	<b>Objective Refraction Mode</b>		
	2	Sphere -30D to +20D (0.12D/0.25D step)		
	3	Cylinder – 00 – 10D (0.12 /0.25D step)		
	4	Axis 0 – 180 degree in one degree step		
	5	Minimum pupil diameter 2.0 mm		
	6	Target fixation Auto fog		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
7		<b>Other Parameters</b>		
8		IPD measurement range – 35 mm – 85 mm in one mm step		
9		Measurement start – Manual / Auto start (selectable)		
10		Display – LCD colour monitor		
11		Measurement recording – Built in printer (upto 5 measurement of each eye can be stored in memory)		
12		Vertex distance – 0 mm, 12 mm, 13.75 mm (selectable)		
13		Energy saving mode – Automatic power saving mode left unused for 5 – 10 minutes		
14		Mounting table – Motorized, operated with switch		
15		Portability – should be portable		
16		<b>REFRACTOMETRY</b>		
17		Sphere (SPH) -30 to +22 D		
18		when VD=12mm (Increments: 0.12D and 0.25D)		
19		Cylinder (CYL) 0 to ±10 D (Increments: 0.12D and 0.25D)		
20		Axis (AX) 1° to 180° (Increments: 1°)		
21		Pupil distance (PD) 0 to 85 mm (Increments: 1mm)		
22		Vertex distance (VD) 0/12/13.5 mm		
23		Cylinder form –, +, +/-		
24		Minimum pupil size 2.5mm		
25		Cylinder form –, +, +/-		
26		Minimum pupil size 2.5mm		
27		<b>Should be CE (Conformité Européene) or ISO approved Product</b>		
56		<b>Non contact tonometer</b>	1	Topcon/ Canon
1		Technical Specification		
2		Non contact tonometer with pneumatic and with digital display		
3		Measuring Range: 0 to 30 mm of Hg		
4		Mode: Auto/Manual		
5		Working distance : 11 mm		
6		Measuring time : less than 3 ms		
7		Fixation target: Internal target, fixed green LED		
8		Alignment: One light alignment/ Focus indicator		
9		Safety lock: to avoid physical contact with eye		
10		Hard copy: Thermal printer		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
	11	With height adjustement and alignment detector		
	12	Coarse and fine logitudinal transverse and vertical adjustments		
	13	<b>Should be CE (Conformité Européene) or ISO approved Product</b>		
		<b>Dental Equipments</b>		
	<b>57</b>	<b>Dental Chair with accessories</b>	<b>2</b>	Mectron / KAVO/ UNICON
	1	It should be Electrically operated Deluxe Multi programmable Remote controlled Dental Chair,controlled by both Hand & Foot		
	2	It should have Synchronised movement with moulded seat,with unit consist operating light with two Intensity ,auto water connection for tumbler & ceramic Spittoon,High & Low motorized suction with Imported motor one Airtor,One Micromotor point,(Without motor and hand pieces)2 nos.		
	3	It should have imported Autoclavable 2 Nos .		
	4	It should have 3 way syringes X-ray viewer.		
	5	It should have S.S Instrument Tray with Remote control and Zero stool.		
	6	Product should have ISO or BIS approval		
	<b>58</b>	<b>Dental X Ray</b>	<b>1</b>	Profi-dental /Appa dental/ Adent/skan ray
	1	Should be a floor stand unit with scissor arm, fiber wheels and locking system		
	2	Should have a counter balanced arm mechanism.		
	3	Should have a X-ray tube current of minimum 4 to 8 mA in steps of 1mA		
	4	Should have X-Ray kv range: 50 to 70 KV selectable in steps of 1kv.		
	5	Should have a constant potential minimum 100Khz high frequency X-ray generator.		
	6	Should have an exposure timer of minimum .04 to 4 sec in steps of 10 m sec		
	7	Focal Spot size should not exceed 0.8 x 0.8 mm.		
	8	Should be compatible for digital radiograph.		
	9	The x ray unit should have option for selecting exposure parameters for Adult & Child.		
	10	X-ray tube head should have swing angulations of at least 290 degree in the vertical plane and 360 degree continuous rotations in the horizontal plane.		
	11	Leakage radiation should be less than 25 mR per hour at 1 meter.		
	12	X-ray tube head should have angle indication.		
	13	Should be supplied with cones.		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
	14	Should work on 110-253 Vac/50 Hz - 60 Hz .		
	15	The quoted model and tube should be AERB type approved and relevant copies of the certificate should be attached with the bid.		
	16	Should have safety certificate from a competent authority CE ("Conformité Européene")/US FDA/STQC CB certificate /STQC S certificate or valid detailed electrical and /functional safety test report from ERTL		
	17	Product should have ISO or BIS approval		
<b>59</b>		<b>Dental Instruments &amp; Accessories</b>	<b>2</b>	Mectron/ Appa dental/ Adent/skan ray/: Clinix
		Endodontic motor and hand piece with speed range with Digital Apex locator		
		Hanau articulator with mounting jig and face bow (fully adjustable)-1.		
		Vibrator		
		Hand piece lubrication system		
		Orthodontic welder		
		PORTABLE FLASH AUTOCLAVE		
		ACRYLIZER		
		AMALGAMATOR FOR MIXING DENTAL SILVER AMALGAM		
		MANUAL X-RAY DEVELOPER		
		Brushless Micromotor Engine with Handpiece		
		<b>Laboratory Equipments</b>		
<b>60</b>		<b>Electric Colorimeter</b>	<b>1</b>	Systronics/Coleparmer/ Ika
	1	Filter : Seven Glass filter		
	2	Photometric Range : 0-100%T(Transmittance) 0- 2.0Abs(Absorbance)		
	3	With digital readout		
	4	Sample Container : Square cuvette 10x10x45(mm) Round cuvette 10(ID),12(OD),105(L)mm		
	5	Works on 230V,50 Hz		
	6	Acessories		
	7	Filter case-1 pc		
	8	Filter-7 Pc		
	9	Analog output cable-1 Pc		

Sd/-  
Dr. B. R. Satpathi 17.12.2015  
Director of Health Services  
Govt. of West Bengal



Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
	10	Power cord-1 Pc		
	11	Operation manual -1 copy		
	12	Bulbs-3 nos		
	13	Extra Cuvettes -10 nos		
	14	Should be CE (Conformité Européene) or ISO approved product		
	15	Test and calibration Reports to be provided		
	16	Should be supplied with reagents, calibrator and controls for demonstration and installation		
<b>61</b>		<b>Semi -Auto analyser Bio Chem</b>	<b>1</b>	Chemwell /Erba/ Mindray/ Siemens
	1	Should be microprocessor controlled general purpose bi-chromatic photometer system with at least 6 filters/arating system ranging from 340 to 630nm.		
	2	Temperature 37 self monitoring built-in incubation systems for temperature controlled absorbance reading.		
	3	Light source: Tungsten/ halogen or higher grade with 2 (two) additional bulb.		
	4	Should have end point, kinetic and two point kinetic measurement modes.		
	5	Should have flow cell measuring device having capability of measuring with 500 µl or less volume of reaction mixture.		
	6	Should have inbuilt printer.		
	7	Should have a measurement range from 0.001 to 2.500Abs or more		
	8	Should have facility for reading results on LCD display.		
	9	The system should have good repeatability and precision		
	10	Should have quality control – two control/test QC survey of at least 30 points. Levy Jenvy plot.		
	11	Should have a filter half bandwidth of 10nm or lesser.		
	12	Should have a test programme memory of 50 or more.		
	13	Should be provided with sample carry over prevention facility.		
	14	Should be supplied with 1 variable (10-100ul) and one fixed volume 500ul pipettes.		
	15	Aspiration should be based on Bellow/Peristaltic Pump/ Vacuum pump.		
	16	Should provide 500 ml of reagents with calibrators for urea, Serum creatinine, Serum bilirubin, Plasma Glucose, Cholesterol, and Quality control 5ml one each for normal and abnormal for installation and demonstration. Should be supplied as and when required by users.		
	17	Should submit cost per ml of all reagents and consumables		
	18	Should be supplied with on line pure sine wave UPS of sufficient capacity for a minimum back of 30 minutes.		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
	19	Should be provided with calibration certificate issued by the manufacturer at the time of installation and calibration certificate should be issued for the machine by the supplier during preventive maintenance visit in the warranty/AMC period if demanded by the end user.		
	20	Should have safety certificate from a competent authority CE ("Conformité Européene")/ US FDA / STQC		
	21	CB certificate / STQC S certificate or valid detailed electrical and functional safety test report from ERTL. Copy of the certificate / test report shall be produced along with the technical bid.		
<b>62</b>		<b>Micro pipettes of different volumes (set of 10 pipettes)</b>	<b>1</b>	Eppendorf/Sartorius/Gilson/Biohit/ Pipettman/ Tarson
	1	Pipettors		
	2	Calibration / opening tool		
	3	Grease		
	4	Instructions for use		
	5	Pipettor holder		
	6	Tip		
	7	Identification stickers		
	8	Caps for colour coding		
	9	Filters (pipettors less than 10 micro litre)		
	10	Pipettes of following volumes – 5, 10, 20, 25, 50, 100 micro litres (Variation 1 channel +/- 0.3, +/- 0.4, +/- 0.8 and +/- 1.5)		
	11	Pipettes of following volumes – 200, 250, 500, 1000, 2000 and 5000 micro litres (Variation 1 channel +/- 2, +/- 5, +/- 10, +/- 20, +/- 50)		
	12	For multi-channel pipettes – 10 micro litre +/- 0.6 micro litre		
	13	For multi-channel pipettes – 250 micro litre +/- 4.0 micro litre		
<b>63</b>		<b>Shaker Water bath</b>	<b>1</b>	Tanco /Remi/Cole parmer
		<b>Technical Specification</b>		
	1	Double Wall, both outer and Inner chamber are Stainless steel with insulation between outer and inner chambers.		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
	2	Special type of transparent PP/PVC/acrylic cover in the shape of inverted V to avoid evaporation of water and draining of condensed water back into water bath.		
	3	Shaking speed (Approximately): 25 to 200 strokes/min.		
	4	Temperature Range: from Ambient to 100 ° C with accuracy of $\pm 1^{\circ}$ C		
	5	Thermostatically controlled with Regulator.		
	6	Mercury thermometer must be provided		
	7	Digital temperature indicator cum Regulator		
	8	Removable stainless steel tray with the following capacities (Approximately) must be provided.		
	9	1.100 ml x 10-12 flask		
	10	2.250 ml x 4 - 6 flask		
	11	3.500 ml x 2 - 4 flask		
	12	4. Test tube racks.		
	13	Should work on 230 V,50 Hz		
<b>64</b>		<b>Hot Air oven</b>	<b>1</b>	Panasonic/Tanco/Remi/Cole parmer
	1	Double Walled, inner wall made of aluminum and outer wall Mild Steel sheet.		
	2	Shelves: 3 to 5 stainless steel, perforated shelves, could be adjusted at any levels.		
	3	Heating Elements: placed at the bottom and sides.		
	4	Temperature control: Thermostatic control from 40 to 250 o C with Regulator and digital temperature-indicator.		
	5	Automatic timer 0 - 60 minutes.		
	6	Air circulating fan.		
	7	Volume : 50 L		
	8	<b>Standard,Safety and Training</b>		
	9	The manufacturer should have ISO certification.		
	10	<b>Documentation</b>		
	11	User Manual in english		
	12	Service Manual in english		
<b>65</b>		<b>Lab Incubator</b>	<b>1</b>	Panasonic/ thermo fisher heratherm/memmert/NSW/ EPPENDORF
	1	<b>Technical Specification</b>		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
	2	Capacity: 120 L		
	3	Interior chamber: SS 316 for easy cleaning and decontamination		
	4	Timer: 1 min. to 100 hours and hold position		
	5	Minimum turbulence and no cross contamination		
	6	Adjustable safety thermostat for temp setting at 1 deg C increment		
	7	Temp Accuracy : +/-1%		
	8	Internal glass door for the observation		
	9	With minimum two adjustable shelves		
	10	Audiovisual Alarm to Indicate when temperature deviates more than 1°C from setpoint, and when program or time has finished. Equipment should have provision to mute the alarm.		
	11	Peltier heating with continuous air circulation and Heating by natural/forced convection for homogenous temperature distribution		
	12	Temperature range: +5° C to <b>60°C</b>		
	13	There should be a Membrane Keypad with LCD/LED Display to set and display operating parameters, current status, running time and alarm conditions for time and temperature.		
	14	The Equipment should have Interior lighting facility, and insulated door fitted with heavy hinges		
	15	Power Supply:230V,50 Hz		
	16	<b>System Configuration Accessories, spares and consumables</b>		
	17	Incubator as per specification		
	18	All consumables required for installation and standardization of system should be provided free of cost		
	19	Should be supplied with all the accessories required for the functioning of the equipment.		
	20	Power Cord		
	21	<b>Standard,Safety and Training</b>		
	22	The manufacturer should have ISO certification.		
	23	<b>Documentation</b>		
	24	User Manual in english		
	25	Service Manual in english		
<b>66</b>		<b>Hot plates</b>	<b>1</b>	Tanco/Tarson/Remi
		Technical Specification		
	1	Dimensions (mm) (approximately) : 445x110x395		
	2	Glass ceramic area(mm) : 430x280		
	3	Heated zone (mm) : 165 and 145 x145		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
	4	Stirrer : Inbuilt Stirring facility		
	5	Min/max speed (MIN) : 100/1000		
	6	Temperature control : Right heating arc, each temp sensor between 35 and 199°C		
<b>67</b>		<b>Rotor / Shaker</b>	<b>1</b>	Tanco/Remi
		Technical Specification		
	1	Double Wall, both outer and Inner chamber are Stainless steel with insulation between outer and inner chambers.		
	2	Special type of transparent PP/PVC/acrylic cover in the shape of inverted V to avoid evaporation of water and draining of condensed water back into water bath.		
	3	Shaking speed (Approximately): 25 to 200 strokes/min.		
	4	Temperature Range: from Ambient to 100 °C		
	5	Thermostatically controlled with Regulator.		
	6	Mercury thermometer must be provided		
	7	Digital temperature indicator cum Regulator		
	8	Removable stainless steel tray with the following capacities (Approximately) must be provided.		
	9	1.100 ml x 10-12 flask		
	10	2.250 ml x 4 - 6 flask		
	11	3.500 ml x 2 - 4 flask		
	12	4. Test tube racks.		
	13	Should work on 230 V,50 Hz		
<b>68</b>		<b>Counting chamber</b>	<b>2</b>	Rotherm/ Tanco
	1	TCDC count will be performed by Haematology Auto analyzer. However, in the event of failure of the machine, the same should be performed manually with a Neubauer counting chamber which should have very thin marking on the glass (visible only under microscope)		
	2	The small marking shall be for RBC and the big markings for WBC counting		
	3	Weber Bright Line Counting Chamber		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
69		<b>Paediatric Glucometer</b>	1	J&J/Bayer/Roche
	1	Should be digital, battery operated		
	2	Code strips should be easily available		
	3	Should operate at room temperature		
	4	Package should come with disposable sterile lancet		
	5	Should give results within 1 minute		
	6	Should be able to store data for at least last 3 tests		
	7	Should come with CE marking		
70		<b>Glucometer</b>	2	J&J/Bayer/Roche
	1	Should be digital, battery operated		
	2	Code strips should be easily available		
	3	Should operate at room temperature		
	4	Package should come with disposable sterile lancet		
	5	Should give results within 1 minute		
	6	Should be able to store data for at least last 3 tests		
	7	Should come with CE marking		
71		<b>Haemoglobinometer</b>	1	Rapid/ Haemocontrol
	1	Should be digital, battery operated		
	2	Code strips should be easily available		
	3	Should operate at room temperature		
	4	Package should come with disposable sterile lancet		
	5	Should give results within 2-3 minutes		
	6	Should not be affected by haemoglobin variation		
	7	Cartridge should be self-contained		
	8	Should be able to store data for at least last 3 tests		
	9	Should be NGSP certified		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
	10	Should come with CE marking		
	11	Accessories free of cost:		
	12	1.Micro Pipette - 2.5 ml : 1 No.		
	13	2..Lancing device - 1 Unit		
	14	3 Lancettes : 25 Nos		
	15	4. 1-heme cuvettes with rubber cap		
<b>72</b>		<b>Automated Microtome</b>	<b>1</b>	Leica/Microm/Thermoshandon
	1	Fully automated motorized rotary microtome along with manual operation having microprocessor controlled panel with provision for motorized cutting via operating panel or foot pedal control.		
	2	Precise micrometer feed system via stepper motor permits precision sectioning selectable at least from 2.0-40/60 micron in 0.5 micron increments.		
	3	Trimming section selectable from 2 micron onwards.		
	4	The vertical specimen stroke length of 70mm, larger specimen can be sectioned. The specimen holder should be clamp type and hold 60mm size block.		
	5	Suitable knife holder for high profile and low profile should be provided.		
	6	The specimen retraction should occur on return stroke.		
	7	Knife angle position locking facility should be provided.		
	8	Cold light source.		
	9	Precise specimen orientation with zero point indication, with an orientation 6° X-Y axis helps in marking perfect orientation of the sample for sectioning.		
	10	Motorised coarse feed in two speeds 30 micron/sec and 90 micron/sec. Variable sectioning speed adjustable from 0.5 to 420 mm/sec.		
	11	Disposable blade holder with lateral displacement feature that can hold both high and low profile blades and knife holder which can accommodate 16 cm C&D type knives.		
	12	Knife holder should be vibration free.		
	13	Integrated section waste tray.		
	14	<b>Accessories</b>		
	15	Microtome disposable blades (high profile coated) - 1 packets (50 blades/pack).		
	16	Microtome disposable blades (low profile coated) - 1packets (50 blades/pack).		
	17	C type knife 16 cm - 1 Nos		
	18	Cold plate (Dry type)		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
73		Elisa Reader cum washer	1	Biorad/Thermo/Eppendorf/
		<b>Technical Specifications</b>		
1		Optical system		
2		Digital light control		
3		8 measurement channels including 1 reference.		
4		Single and dual wavelength measurement with facility for kinetic measurement		
5		8 s maximum measurement time for single and dual wavelength and 5 s(+/-1Sec.) for kinetic		
6		Measurement Range 400-700nm		
7		Indication Range 0-2.999 abs		
8		Accuracy Plus/Minus 2% or Plus/Minus 0.005 abs		
9		Resolution 0.001 abs		
10		Inbuilt Filters: Narrow band interference		
11		Should have the following filters – 405, 450, 492(+/-2nm), 540, 620 (+/-10nm) and 690 nm		
12		Should measure end point, curves and kinetic.		
13		SOFTWARE:		
14		Storage of immediately preceding measurement At least 15 user programmable tests permanently stored		
15		Time programmable between each measurement. Agitation programmable before each reading		
16		Bidirectional printer interface.		
17		Data memory not less than 300 plates/curves		
18		Built in Windows based software programming software.		
19		MEASUREMENT MODES		
20		Plate shaking mode for sample mixing selectable speed and time)		
21		Flexible blank mode setting		
22		Matrix Modes: Matrix -x/t, Matrix-/0-0 (Range ),		
23		Matrix-/f/(Floating cut off)		
24		Difference Mode: Absorbance of each well in even numbered subtracted from those of odd numbered columns		
25		Curve fit Modes: LIN/LIN.LIN/LOG/LOG or auto curve transformation with ability to add the standard curve; 8 to 12 way string orientation or kinetic modes		
26		Table of optical densities, Delta DD, Graphic, Reaction rate/V-Max		
27		Adjustable for different micro plate geometrics		
28		Halogen Lamp 20 - 40 W.		
29		16 digit alphanumeric fluorescent display		
30		Membrane keyboard.		

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Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
74		<b>Electrolyte Analyser</b>	1	Roche/Nova/Siemens
		System should measure Na, K and Ca, Li.		
		Facility for auto sampler tray for constant loading. Sample can be fed by capillary syringe or sample tube directly		
		Sample volume should be less than 100 micro-liters.		
		Auto Calibration Facility and provision for economy mode.		
		Quality control facility		
		Facility of flagging of abnormal results and user programmable ranges.		
		Stand by mode: user controlled and automatically controlled		
		Memory for last 100 messages.		
		Built in printer for printing the data.		
		RS.232.C (standard serial port) should be available		
		<b>ISE Analyser-01</b>		
		Na, K, Ca, , Li, Electrodes- 02 each (1 standard and 1 spare		
		Should be provided with reagents and consumables for 300 tests		
75		<b>Glycosylated Haemoglobinometer</b>	1	Biorad/J&J/ Roche/ERBA
	a	Fully automatic		
	b	User Friendly, easy to use		
	c	Multiple sample accommodation in primary tubes and sample vials. Whole blood primary tube sampling		
	d	Facility of result display with chromatogram in a printed format		
	e	Minimum interference from other labile HbA1C, Lipemic samples, other haemoglobin		
	f	variants		
	g	With Bar Code Facility.		
	h	With LCD Display.		
	i	With Built in printer.		
	j	With Data Storage facility.		
	k	With Service port for connectivity		
	l	With Suitable UPS for ½ hr capacity.		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
	m	Consumables and specific reagents worth of 300 tests to be provided as per the requisition of the end user.		
<b>76</b>		<b>Haematology Analyser</b>	<b>1</b>	Sysmex / Beckman / Siemens / Roche
1		Should be a fully automated haematology analyser providing 18 parameters including a 3-part differential, with user definable settings to have either RDW-CV or RDW-SD.		
2		The system should be capable of processing samples at a speed of 60 samples/hour.		
3		The system should have large LCD display to have a review of all the results along with the three histograms of WBC, RBC and PLT on the screen.		
4		The system should have around 200 samples test result memory.		
5		The system should have auto probe wiper to clean the sample probe automatically after sample aspiration.		
6		The system should use non cyanide based reagent for Hgb estimation.		
7		The system should have an option to print the results with or without histograms, also with the option to print only basic 8 parameters.		
8		System should have world reference "Electrical Impedance" method of cell counting for the reliability of the results, with an integrated temperature sensor for monitoring and compensating for shifts in room temperature.		
9		The system should use the proven and approved "volumetric metering" system of cell counting, for WBC's, RBC's and PLT's for high precision of the results and stability of the calibration.		
10		The system should have a system of count and aperture monitoring every 0.5sec for precision and reliability of the counts.		
11		The system should be rotary valve ways for the precise sample aliquoting for dilutions.		
12		The system should have automatic floating thresholds for the correct separation of WBC's, RBC's and PLT's.		
13		The system should also have additional facility for manual discrimination in order to process veterinary samples.		
14		The system should give the differential count as lymphocytes, mid population and neutrophils. While mid population should include eosinophils, basophils and monocytes.		
15		System should not require any daily maintenance except automatic daily shut down.		
16		The system should automatically give an alarm to the operator for doing the maintenance.		
17		The system should use high intensity LED for Hgb estimation and not the lamp.		
18		The system should have a low cost per test. All reagents required should be available locally from the company or its authorised distributor.		
19		The company should have an original external software for the system to be provided.		
20		Lastly and most importantly the manufacturer of the system should have a worldwide reputation for high quality and reliable systems and the Indian distributor should have a wide network of trained technical, service and application support persons.		

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Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
	21	Consumables and specific reagents worth of 3000 tests to be provided as per the requisition of the end user.		
<b>77</b>		<b>Laboratory Autoclaves</b>	<b>2</b>	Panaonic/Natsteel/Yorco/Reico
	<b>1</b>	<b>Technical Specification</b>		
	1.1	Stand-alone bench top autoclave 20 Litres, automatic .Single door, self sealing with high-quality silicone gasket		
	1.2	Dimension should match to suit the voume of autoclave		
	1.3	The autoclave should have double wall sheet metal with suitable insulation in between walls.		
	1.4	Pre-set automatic cycles for unwrapped instruments, wrapped instruments/packs		
	1.6	Two automatic programmes, approx: 2.2 bar at 134 degree C and 1.1 bar at 121degree C.		
	1.7	The equipment should have automatic pressure control switch /automatic water control device to ensure that the equipment does not run dry.		
	1.8	System should have digital display for Temperature and Time.System should have analogue display for Pressure.		
	1.9	System should have audio visual alarm for low water level,and other system errors.		
	1. 10	Fit with 5 L water reservoir, automatic fill, autonomy for at least 10 cycles		
	1.11	Should be with 3 removable shelves		
	1.12	Should have Double safety door locking device		
	1.13	Should have safety feature protection against over-pressure and over-temperature		
	1.14	Audible and visual alert upon cycle interruption or completion		
	1.15	Unwrapped cycle time: cold 30 min, hot 20 min		
	1.16	Control panel with alpha-numerical display and cycle indicators		
	1.17	Should be complete with 3 instruments trays		
	1.18	Power Supply:230V,50 Hz		
	1.19	Power consumption: 3000 W(Approx)		
	<b>2</b>	<b>System Configuration Accessories, spares and consumables</b>		
	2.1	Autoclave-20L		
	2.2	1 x set of 3 matching instrument baskets		
	2.3	1 x set of 3 matching sterilizing drums		
	2.4	1 x roll of sterilization indicator		
	<b>3</b>	<b>Standard,Safety and Training</b>		
	3.1	The manufacturer should have ISO certification.		
	3.2	Equipment should have CE/BIS certification		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
	4	<b>Documentation</b>		
	4.1	User Manual in english		
	4.2	Service Manual in english		
	4.3	Certificate of calibration and inspection from factory.		
<b>78</b>		<b>Ordinary Refrigerator (double door)</b>	<b>2</b>	Samsung/Godrej/LG
	1	<b>Microprocessor Control:</b>		
	a	Microprocessor temperature control, digital temperature display, fan cooling air circulation, the temperature fluctuation inside cabinet + - 2°C, the inside temperature will be kept between 2°C to 8°C		
	b	The freezer temperature should not be less than (-)18°C (minus 18°C)		
	c	With perfect visual and audible alarm system with sound buzzer and flashing alarm functions of over temperature alarm, under voltage alarm, sensor failure alarm, door open alarm etc.		
	d	Alarm silence, ring back and automatic reset function.		
	e	In build battery back up ensures control panel function during power failure.		
	f	In built voltage stabilizer ensure stable voltage ranging from Single phase 50Hz 150 Volt A.C to 250 Volt A.C but to be steady at 230 Volt 50 Hz A.C		
	2	<b>Refrigeration System</b>		
	a	Provide heavy duty, industrial-grade, hermetically sealed compressors.		
	b	Automatic defrost for optimum cooling capacity		
	c	Automatic condensate removal, no drain lines required.		
	d	Refrigerant may be used with Freon 134 (tetrafluoroethane)		
	e	Positive forced air circulation maintains temperature uniformity at all selves.		
	f	Directional air flow assures quick recovery after door opening.		
<b>79</b>		<b>Floatation Bath</b>	<b>2</b>	Yorco/ Embee
		To be used for tissue culture , fermentation of tissue and processing		
		should be able to process wrinkle free specimen		
		should have round double walled single piece inner and outer chamber made of aluminium		
		rim should be wide enough to dry the wet slides		
		should have a capillary thermostat from ambient to 70 degree centi grade with accuracy of +- 2 degree celcius		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
80		<b>Class – I Bio Safety Cabinet</b>	1	Clean Air/ESCO/yorco
	1	<b>Operational Requirements</b>		
	1.1	Laminar Air Flow system with HEPA Filters is required.		
	2	<b>Technical Specifications</b>		
	2.1	Direction of flow of air should be horizontal.		
	2.2	HEPA Filter with Retention 0.22 Micron and Efficiency 99.97 with Ultra clean glass fiber paper having Epoxy coated CRCA frame casing with finely corrugated aluminum foils separators.		
	2.3	PRE Filter with Synthetic, non-woven polyester fibers having Casing of Enamel painted CRCA frame with Retention of 10 - 15 Micron and 90 % Efficiency.		
	2.4	Material of construction: Basic cabinet of complete CRCA sheet metal construction with powder-coated finish.		
	2.5	Working area should be 24 cu. ft 4ftX2ftX3ft with maximum variation of 6 inches with stainless steel platform.		
	2.6	Blower Assembly: DIDW type blower system with high RPM motor with variable speed, enclosed in a powder coated MS casing suitably suspended & connected to the filter chamber through flexible canvas duct.		
	2.7	Front Windows Acrylic, fixed by clamps.		
	2.8	Illumination with Fluorescent tubes with diffusers & 2 UV lamps.		
	2.9	Should be provided with the pressure gauge, control panel & gas burner inside		
	3	<b>System Configuration Accessories, spares and consumables</b>		
	3.1	Spare HEPA Filters and PRE Filters- 1 SET each		
	4	<b>Standards, Safety and Training</b>		
	4.1	Should be CE/BIS approved product.		
	4.2	Manufacturer should have ISO certification for quality standards.		
	5	<b>Documentation</b>		
	5.1	User/Technical/Maintenance manuals to be supplied in English.		
	5.2	Certificate of calibration and inspection.		
81		<b>Cyto Spin</b>	1	Remi / Yorco
		Microcentrifuge with speed of 5000 rpm and RCF of 3900		
		24 X 1.5 ml angle head along with timer		
		<b>Endoscopy Equipments</b>		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
82		<b>Endoscope (OGD)</b>	1	Olympus/Pentax/Karlstorz
		<b>Operational Requirements</b>		
		COMPRISING OF 1. VIDEO ENDOSCOPE 2. VIDEO PROCESSOR WITH LIGHT SOURCE 3. FLAT PANEL (LCD) MONITOR 4. DIATHERMY COMPATIBLE WITH THE VIDEOSCOPE. 5. ENDOSCOPE STERILIZING SYSTEM.		
		<b>Technical Specification</b>		
		<b>VIDEO UPPER GI SCOPE (DIAGNOSTIC)</b>		
		a) Field of view 140 degree		
		b) Direction of view Forward viewing		
		c) Depth of field 2 to 100mm		
		d) Total length - 1340 to 1365mm		
		e) Working length more than 1000mm		
		f) Insertion tube outer diameter 9.8mm		
		g) Distal end diameter 9.8 to 10.3mm		
		h) Bending section tip deflection		
		i. Up – 210 degrees,		
		ii. Down – 90 to 120 degrees		
		iii. Left - 100 to 120 degrees		
		iv. Right – 100 to 120degrees		
		i) Instrument channel - Diameter – 2.8 to 3mm		
		<b>UPPER GI SCOPE (THERAPEUTIC)</b>		
		a) Field of view 140 degree		
		b) Direction of view Forward viewing		
		c) Depth of field 2 to 100mm		
		d) Total length - 1340 to 1365mm		
		e) Working length more than 1000mm		
		f) Insertion tube outer diameter 11 to 12mm		
		g) Distal end diameter 11 to 12mm		
		h) Bending section tip deflection		
		i. Up – 210 degrees		
		ii. Down – 90 to 120 degrees		
		iii. Left - 100 to 120 degrees		
		iv. Right – 100 to 120degrees		
		i) Instrument channel - Diameter – more than 3.5mm		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
		<b>VIDEO DUODENOSCOPE</b>		
		a) Field of view 100 degree		
		b) Direction of view Side viewing (Retro 5 to 10 degrees)		
		c) Depth of field 4 to 65mm		
		d) Total length - 1500 to 1600mm		
		e) Working length more than 1230mm		
		f) Insertion tube outer diameter 11.5 to 12.5mm		
		g) Distal end diameter 13 to 13.5mm		
		h) Bending section tip deflection		
		i. Up – 120 degrees,		
		ii. Down – 90 degrees		
		iii. Left - 90 degrees		
		iv. Right – 100 to 110degrees		
		i) Instrument channel - Diameter – more than 4mm		
		<b>VIDEO COLONOSCOPE ( SINGLE CHANNEL)</b>		
		a) Field of view 140 degree		
		b) 2.Direction of view Forward viewing		
		c) 3.Depth of field 2 to 100mm		
		d) 4.Total length - 1600mm to 2000mm		
		e) 5.Working length more than 1300 mm to 1700mm		
		f) 6.Insertion tube outer diameter 11.5 to 13mm		
		g) 7.Distal end diameter 11.5 to 13mm		
		h) 8.Bending section tip deflection		
		i. Up – 180 degrees		
		ii. Down –180 degrees		
		iii. Left - 160 degrees		
		iv. Right – 160 degrees		
		i) Instrument channel - Diameter – more than 3.6mm		
		<b>VIDEO COLONOSCOPE (TWO CHANNEL)</b>		
		a) Field of view 140 degree		
		b) 2.Direction of view Forward viewing		
		c) 3.Depth of field 2 to 100mm		
		d) 4.Total length - 1600mm to 2100mm		
		e) 5.Working length more than 1300 mm to 1750mm		
		f) 6.Insertion tube outer diameter 12 to 13mm		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
		g) 7. Distal end diameter 13 to 14mm		
		h) 8. Bending section tip deflection		
		i. Up – 180 degrees		
		ii. Down – 180 degrees		
		iii. Left - 160 degrees		
		iv. Right – 160 degrees		
		i) Instrument channels - Diameter – First channel more than 3.6mm/ second channel more than 2.6mm.		
		<b>VIDEO PROCESSOR WITH LIGHT SOURCE COMPATIBLE WITH THE ABOVE MENTIONED VIDEOSCOPE.</b>		
		a) Colour system single CCD Colour.		
		b) Xenon lamp 100 – 300 W		
		c) Out put for high video image transfer		
		d) Convenient digital to digital recording of both still and moving images.		
		e) Picture and picture display for any combination of endoscopic images.		
		f) Convenient index display for documentation.		
		g) Scope ID function for endoscopy suite management.		
		h) External devices controls		
		i) 1 printer control connector, 2 external device control connectors.		
		j) Power supply : 220 – 240V AC		
		k) Should include Air feeding & water feeding system with detachable water container.		
		<b>HIGH DEFINITION LCD COLOUR MONITOR ( FLAT PANEL)</b>		
		a) Full digital High Definition TV compatible high resolution LCD monitor		
		b) LCD Screen 19 or more inches in size		
		c) Power supply 220 – 240 V AC		
		d) Computer connector		
<b>83</b>		<b>Laparoscope operating major with accessories</b>	<b>1</b>	<b>Karlorsz/Stryker/ Olympus</b>
		<b>High Definition Laparoscopy System</b>		
		a) High Definition Three Chip Camera System		
		b) Camera console 220 v with universal coupler & Autoclavable camera head		
		c) Pure Digital signal with high definition video(1280*1024 native resolution)		
		d) Resolution-2000 horizontal lines		
		e) 8 specialty settings		
		f) Integrated Flexible Scope filter		



Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
		g) Signal to Noise ratio-70 db		
		h) Progressive scan technology both on camera head & console		
		i) Brightness Control on console & camera head		
		j) Aperture Control on console		
		k) Inbuilt 16 step digital Image Enhancer on console		
		l) Digital zoom & white balance on camera head		
		m) Integrated Gain/shutter/Enhancement with brightness control		
		n) Two peripheral control on camera head		
		Video Output		
		a) 2 DVI output		
		b) 2 SVHS & 1 RGB out put		
		c) One Composite out put		
		Automatic Light source		
		a) 220 V,300 W. Xenon Bulb(with one spare bulb)		
		b) Elliptical Bulb technology		
		c) Bulb Working life 5800hrs		
		d) Digital Bulb life counter on light source		
		e) Automatic /Manual Light Adjustment		
		f) Stand By Mode		
		g) Universal Jaw Assembly to adapt any make of fiber optic cable without adapter.		
		Fiber optic Cable		
		a) 6.5mm*7.5 feet Snap Fit cable		
		Monitor		
		a) 19" Flat Panel Monitor Colour		
		Insufflator		
		a) 40Liter of high flow		
		b) Microprocessor controlled unit		
		c) Soft Approach Pressure control for safe recovery of abdominal pressure		
		d) Gas heating		
		e) LCD based central display monitor with multilingual text & graphics		
		f) AV warning signal		
		Suction irrigation apparatus for Laparoscopic surgery		
		Laparoscopes, Fully Autoclavable with working length 300mm		
		a) Wide angled distortion free view		
		b) Universal adaptor for other light sources		

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Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
		c) Yellow Glass index for optimum evenness of focus & contrast		
		d) 0 degree, 10mm		
		e) 30 degree, 10 mm		
		f) 0 degree , 5mm		
		g) video telescope		
		Specifications		
		a) Laparoscopic hand instruments (reusable) with 310mm working length, take apart locking / unlocking mechanism, rotatable with interchangeable handle with monopolar diathermy attachment ( Except trocars and veress needle)		
		b) veress needle 12 cm length 4		
		c) Veress needle 15 cm length 4		
		d) Carbon-di-oxide gas tubing 4		
		e) Trocars sleeves 11 mm 4		
		f) Reducer 11/5 mm 2		
		g) Trocars sleeves 5.5 mm 4		
		h) Trocars (pyramidal tip) 10 mm 4		
		i) Trocars (pyramidal tip) 5 mm 4		
		j) Trocars washer 5 mm 100		
		k) Trocars washer mm 50		
		l) Laproscopic biopsy forceps 5 mm, 2		
		m) Maryland dissector 5mm with unipolar diathermy 2		
		n) Maryland dissector 5mm, high performance with bipolar		
		o) Cutting 2		
		p) Atraumatic graspers, 5mm 2		
		q) Metzenbaum scissors (5cm) with unipolar diathermy 2		
		r) Metzenbaum scissors (5cm) high performance with bipolar 2		
		s) cutting		
		t) Fan retractors 5 mm 2		
		u) Laproscopic cautery lead 4		
		v) Suction irrigation device with two way valve 2		
		w) L shaped hook electrode 5mm		
		x) L shaped hook 5mm , high performance with bipolar cutting2		
		y) Laproscopic bowel grasper 5mm, length 33-36 cm 2		
		z) Laproscopic spoon forceps 10mm length 33- 36 cm2		
		aa) Needle holder 5mm, 33 cm long 4		
		bb) Laproscopic suction cannula, 10 mm 2		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
		cc) Laparoscopic suction cannula 5 mm 2		
		dd) Clip applicator 10 mm Large, Medium, Small Clips		
		ee) Gall bladder extraction 5mm Large, Medium, Small Clips		
		ff) Hassan cannula		
		gg) Lap		
		hh) Eondotrainer		
		ii) Port closure needle		
		jj) Sterilization tray with cover 3 x 1		
		<b>Medical Gas system</b>		
<b>84</b>		<b>Medical Gas system</b>	1	BOC/Praxair/MDD/ BS Medical
	1	<b>Fully Automatic Oxygen Control Panel (Indigenous )</b>		
		<b>Design, Supply, installation and commissioning of centralized medical gas pipeline system (MGPS):</b> Flow designing, selection of copper pipping and installation and commissioning of the system should be done as per HTM 20-22 system		
	1.1	The manifold control panel will have following features:		
	1.2	The panel will be enclosed in a metal cabinet with a hinged front cover. The panel – cover will be fitted with a lock to prevent unauthorized access and can be swung open for maintenance. Will have fully automatic changeover operation and requiring no manual action. Gas changeover system will be electro-pneumatically operated, in the event of electrical Tenderer failure gas supply will not be interrupted.		
	1.3	A visual indication of the state of the manifold will be provided by 3 gauges within the control panel which are clearly visible through the transparent cover. These gauges are provided to indicate the pressure of the right and left-hand banks, and the supply pressure from the control panel to the distribution system. The panel will be supplied with sensing facilities to provide visual signals and other ancillary services.		
	1.4	In addition the panel will be fitted with audio alarm indication for changeover of empty cylinder bank to filled cylinder bank and vice versa.		
	1.5	The automatic gas manifold control includes:		
	1.6	Two supply pressure gauges, One delivery pressure gauge		
	1.7	Pressure reduction in primary side by two stage incorporating two regulators		
	1.8	Line pressure regulators with bypass valve to facilitate easy maintenance		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
	1.9	One line pressure relief valve		
	1.10	Instruction for changing the cylinders clearly identified on the front of the control cabinet		
	1.11	Rated capacity (Delivery) to suit hospital's requirement		
	2	<b>Oxygen Manifold (Indigenous )</b>		
	2.1	To provide one Oxygen manifold extendable type size 2x10 for bulk oxygen cylinders, Manifold will be suitable to withstand a working pressure of 140 Kg / cm <sup>2</sup> and Will be Tested after Installation at 140 Kg/cm <sup>2</sup> oxygen cylinder pressure. Manifold will also have high pressure copper annealed tail pipes with one end having Brass adaptor suitable for oxygen cylinders and other end suitable for Manifold Non-Return Valves. Manifold will also have 20 brass non-return valves for individual oxygen cylinder. Manifold middle frame of 2x10 size will be made with circumferential mild steel flat duly powder coated with black colour & along with chain for individual bulk O <sub>2</sub> cylinder.		
	2.2	Oxygen Emergency Cylinder System. – Indigenous		
	2.3	To provide 4+4 cylinder emergency system with high flow Pressure Regulators, pig tail pipes, manifold of 4+4 cylinders with Top & middle frame for Oxygen.		
	2.4	Surface type front Loading Gas Outlets ( BS Type ) for O <sub>2</sub> , N <sub>2</sub> O, C Air & Vacuum		
	2.5	The medical gas terminal unit will be in accordance to HTM 2022 Standards. The wall mounted first fix assembly will consist of brass pipeline termination block with copper stub pipe permanently secured between a back plate and a gas specific plate which allows limited radial movement of the copper stub to align with the pipeline. The first fix will incorporate a maintenance valve (except for vacuum) and a test plug. The test plug provides an effective blank to enable carcass pressure testing. The second fix plastic components will be moulded from fire retardant polycarbonate with the pin index permanently moulded into the gas specific socket. The socket assembly retains a capsule assembly, a sealed containing the check valve and probe 'O' ring seal. This replaceable capsule assembly enables all working parts subject to wear and tear through usage to be replaced as a factory tested assembly, thereby reducing maintenance time. Medical gas terminal units will accommodate a variable plaster depth up to a maximum of 16mm.		
	2.6	Terminal units will be gas specific and only accept the correct medical gas probe. Gas specific components will be pin-indexed to ensure that a correct gas specific assembly is achieved so that in normal course of dismantling for repair or maintenance, parts from other gases cannot inadvertently be used. Wall mounted terminal units will incorporate an anti-rotation pin to engage with connected downstream medical equipment ensuring correct orientation.		
	2.7	Terminal units installed in booms or pendants will be attached to their respective flexible gas hose by a gas specific NIST fitting and anti-rotation pins will not be fitted. Terminal Units located in a rigid installation will be capable of single-handed insertion and removal of the correct medical gas probe.		

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Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
	2.8	The terminal units will have two years warranty from manufacturer, subject to the recommended minimum routine maintenance operations being carried out by correctly competent persons.		
	2.9	For aesthetic appeal each outlet will include a one piece ivory trim plate. The trim plate will be constructed of high impact, flame retardant Cycology.		
	2.10	The wall outlet can accommodate various finished wall thickness from 3/8" ( 10mm) to 1-1/4" ( 32mm).		
	2.11	Equipment is manufactured in USA and produced in an ISO 13485 registered facility.		
	2.12	Cycology is a registered trademark of GE Plastics.		
	2.13	<b>FEATURES:</b>		
	2.14	Accepts Ohmeda Diamond Gas Specific Adapters. Pin indexed to prevent interchangeability of gas services.		
	2.15	Each outlet is cleaned for medical gas service and pressure tested.		
	2.16	Less than 3 psi ( 21KPa) pressure drop through the outlet @ 120 l/min and 50 psig ( 345KPa) inlet pressure.		
	2.17	Inlet pipe can be swiveled 360 degrees for ease of installation.		
	2.18	Gas specific back bodies can accept either Quick connect or DISS front identification bodies.		
	2.19	Outlet can be adjusted up to 1 1/4" ( 32mm) wall thickness.		
	3	<b>Oxygen Flow meter &amp; Humidifier Bottle(Indigenous )</b>		
	3.1	Back Pressure Compensated Flow meter will be of accurate gas flow measurement and control within a range of 0-13 litres per minute for use in a variety of respiratory therapy gas delivery system. The flow tube and shroud components will be made of good quality plastic. It Will be supplied with plastic transparent reusable humidifier bottle.		
	3.2	<b>High pressure tube for O2, N2O, Compressed Air &amp; Vacuum, (Indigenous )</b>		
	4	<b>N2O System (Indigenous )</b>		
	4.1	Fully Automatic N2O Control Panel		
	4.2	The manifold control panel will have following features:		
	4.3	The panel will be enclosed in a metal cabinet with a hinged front cover. The panel – cover will be fitted with a lock to prevent unauthorized access and can be swung open for maintenance. Will have fully automatic changeover operation and requiring no manual action. Gas changeover system will be electro-pneumatically operated, in the event of electrical		
	4.4	A visual indication of the state of the manifold will be provided by 3 gauges within the control panel which are clearly visible through the transparent cover. These gauges are provided to indicate the pressure of the right and left-hand banks, and the supply pressure from the control panel to the distribution system. The panel will be supplied with sensing facilities to provide visual signals and other ancillary services.		
	4.5	In addition the panel will be fitted with audio alarm indication for changeover of empty cylinder bank to filled cylinder bank and vice versa.		
	4.6	The automatic gas manifold control includes:		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
4.7		Two supply pressure gauges, One delivery pressure gauge		
4.8		Pressure reduction in primary side by two stage incorporating two regulators		
4.9		Line pressure regulators with bypass valve to facilitate easy maintenance		
4.10		One line pressure relief valve		
4.11		Instruction for changing the cylinders clearly identified on the front of the control cabinet		
4.12		Rated capacity (Delivery) to suit hospital's requirement		
5		<b>Nitrous Oxide Manifold (Indigenous )</b>		
5.1		To provide one N2O manifold extendable type size 4x4 for bulk N2O cylinders, Manifold will be suitable to withstand a working pressure of 140 Kg / cm2 and Will be Tested after Installation at 140 Kg/cm2 oxygen cylinder pressure. Manifold will also have high pressure copper annealed tail pipes with one end having Brass adaptor suitable for oxygen cylinders and N2O other end suitable for Manifold Non-Return Valves. Manifold will also have 16 brass non-return valves for individual N2O cylinder. Manifold middle frame of 4x4 size will be made with circumferential mild steel flat duly powder coated with black colour & along with chain for individual bulk N2O cylinder.		
6		<b>N2O Three Cylinder Emergency System. (Indigenous )</b>		
6.1		To provide three cylinder emergency system with high flow Pressure Regulators, pig tail pipes, manifold of three cylinders with Top & middle frame for N2O.		
7		<b>Vacuum System(Indigenous )</b>		
7.1		Vacuum Central System complete with duplex 15 VX model Ingersoll Rand Make Pump,		
7.2		two vacuum pumps, air cooled type , Model 15 V X 10 H.P.( Ingersoll Rand make ), each		
7.3		pump having piston displacement - 149.6 Cfm. Free Air delivery to suction - approx. 90 %		
7.4		of P.D. , maximum working pressure 29" of Hg or 730mm of Hg, single stage duplex cylinder,		
7.5		fitted with M.I. channel frame complete with V-Belt drive, belt guard etc.		
7.6		Vacuum system will also have followings:-		
7.7		- Electric motor either BBL or crompton Greaves, 10 H.P., TEFC 440 volts ,3 phase. - 2 Nos.		
7.8		- 2" BSP stainless steel ball valve with PTFE seat & quarter turn open able handle		
7.9		for pump isolation		
7.10		- Silencers at Vacuum pump discharge end		
7.11		- Vacuum filters size 6" dia x 12" long with drain valve and housing chrome plated. - 2 Nos.		
7.12		- One 3000 ltr water capacity vacuum receiver made of M.S. material as per - 1 No.		
7.13		- IS-226 and code of construction IS-2825 with drain valve .		
7.14		- Inter connection copper piping of suitable sizes		
7.15		- Vacuum gauges		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
7.16		- 2" BSP vertical non return valve of brass/G.M.		
8		<b>Ward Vacuum Unit (Indigenous )</b>		
8.1		The vacuum unit will include vacuum regulator along with 0 - 760mm of Hg vacuum gauge of 2 1/2" size dial, 600 ml capacity reusable plastic collection bottle with overflow safety trap with plastic slide wall mounted type.		
8.2		<b>Theatre Vacuum Unit (Indigenous )</b>		
8.3		It will be trolley mounted. The unit will include one regulator having gauge and mounted on the trolley stand , having two reusable each 2000 ml plastic collection bottles mounted on the base of trolley unit and connected with regulator & low pressure tube inter-connections.		
9		<b>Compressed Air System(Indigenous )</b>		
9.1		The unit will have three stationary air cooled silenced (Reciprocating) Oil-Free Air Compressor with		
9.2		critical maintenance free technology each having 50 scfm capacity.		
9.3		The system will have the following accessories.		
9.4		Air reservoir as per international standards of minimum 1500 liters. -1 No.		
9.5		with safety valve, drain valve and pressure gauge of 4 inch dial size.		
9.6		Air Dryer, desiccant each of 50 scfm capacity for – 40 degree centigrade dew point.-1 Nos.		
9.7		Inter connection air piping between the compressor, receiver and air dryer , NRV temperature		
9.8		gauges. -1 Set After Cooler of matching capacity for reciprocating compressor		
9.9		15Hp motor Crompton /Siemens /BBL make		
9.10		Compressed Air Filtration System –		
9.11		One set of four – stage filter (one as working and one standby) Will be provided as follows:		
9.12		The filters will be made of die cast aluminum housing with epoxy powder paint on the outside and		
9.13		anodized surface treatment inside to prevent corrosion and ensure extra long life.		
9.14		The filters Will have maximum contaminant removal efficiency with minimum pressure drop.Total 4		
9.15		stages of filters Will be used (stage 1 & 2 Will be installed before the desiccant dryer and balance two stages after it as mentioned below :		
9.16		Stage – 1 : Coalescing filters for general purpose protection, removing liquid water and		
9.17		oil aerosol to 0.1mg . cum.(0.1 ppm) and particles down to 1 micron.		
9.18		Stage – 2 Particulate filters for dust protection, removing particles down to 1 micron		
9.19		Stage – 3 : high efficiency coalescing filters, removing liquid water and oil aerosol to		
9.20		0.01 mg/cu.m (0.01 ppm) and particles down to 0.01 micron		
9.21		Stage- 4 : active carbon filter for removal of oil vapors and hydrocarbon odours with		
9.22		maximum remaining oil content of 0.003 mg/cum. (0.003 ppm) Will be installed after stage 3 filter		
9.23		Combined Electrical Control Panel for Air Compressors & Vacuum Pumps		

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
9.24		Common Electrical Control Panel for Air-Compressors and Vacuum Pumps, cubicle type, complete		
9.25		with Mains Incomer, Bus Bar arrangement, Voltmeter with VSS, Phase indicating lights, Phase		
9.26		loss/Phase Reversal indicating light, individual MCBs for all starters, individual Ammeters for all		
9.27		motors, Single Phasing Preventer, Contactors, Overload Relays, Control Circuit MCB, Start/Stop		
9.28		Push buttons, Auto/Manual switches, Pump "ON" and Pump "TRIP" indicating lights, Sequencing		
9.29		Relays (Separate for Air Compressors and Vacuum pumps) with overriding feature.		
9.30		The Sequencing Relays must be door mounted. It will have all indications like Mains ON, Input ON,		
9.31		Pump Next in Turn, Pump "A"/Pump "B" ON, , Pump "A"/Pump "B" Fault etc, Audio Alarm in case of		
9.32		Fault and having an option of locking the sequencing arrangement on either pump. Sequencing		
9.33		relay also must have an option for parallel operation of both pumpsets in case the need arises. The		
10		<b>Air-Compressors (Indigenous )</b>		
10.1		The powder coated Panel enclosure. All terminals, switches and lights must be duly marked. Internal wiring must be duly ferruled. Incomer shall be of adequate size so that it is suitable for the total load of the system.		
10.2		Copper pipes (material): Copper Pipes used will be solid drawn, seamless, deoxidized, non arsenical, half hard, tempered and degreased, manufactured as per EN 737/BS 2871 part I, Table-X of 1971 and chemical composition as per BS-6017 of 1981, Table 2, Cu-DHP.		
10.3		To provide Manufacturer's Test Certificate of copper pipes for physical properties and chemical composition. Further, the pipes will be tested by a reputed third party i.e. Lloyds Register Services and certificates for the same will also be furnished.		
11		<b>Pipe sizes will be used as per HTM 2022 standards:</b>		
11.1		76mm ODX 1.2mm thk, 54mm OD X 1.2mm thk, 42mm OD X 1.2 mm thk, 28mm OD X 0.9 mm thk		
11.2		22mm OD X 0.9 mm thk, 15mm OD X 0.9 mm thk, 12mm OD X 0.7 mm thk		
11.3		Pipeline Installation: Before erection, all copper pipes, valves, fittings like bends, tees, reducers etc. will be cleaned for dirt, and Will be degreased.		
11.4		Proper pipe cutters, and bending machine will be used during installation of copper pipes.		
11.5		All copper pipes and fittings like bends, Tees, reducers and straight couplings Will be as per BS 864 and joined by silver brazing method for copper to copper. Inert gas welding technique Will be used by passing Nitrogen gas inside the copper pipes during silver brazing, in order to avoid carbon deposition inside the copper pipes. Copper pipes of the diameter up to 42mm OD Will be installed on the wall with the help of plastic saddles at the required span, as per HTM-2022 of U.K. and metallic white powder coated clamps Will be used for pipe sizes above 54mm OD. Wherever the pipes cross brick walls, it will be covered with plastic pipes. All pipes will be installed without springing or forcing. All pipes will be protected against mechanical injury in a manner satisfactory to authorities having jurisdiction		
11.6		Test: After erection, all the pipes will be cleaned or purged with the help of dry nitrogen gas, & Will be tested with dry nitrogen at a pressure of 10 Bar for 48 hours.		
11.7		Painting: All installed pipes will be painted with two coats of synthetic enamel paint & colour codification as per IS-2379 of 1963.		
12		<b>Isolation Valve (Indigenous )</b>		

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Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
12.1		It will be wall mounted, Aluminum box with lockable front glass panel having ball type valves with PTFE seat Brass body with Nickel plating valves having quarter turn handle opening. Sizes suitable for 15 mm OD copper pipe to 42 mm OD copper pipes will have screwed ends will have brass adopter suitable for copper pipe, these valves will be manufactured by an ISO 9001 certified company.		
13		<b>Medical Gas Alarm (Main &amp; Area)(Indigenous )</b>		
13.1		The medical gas alarms will have displays for various fault indications and capable of monitoring a maximum of 4 to 5 medical gas services by means of pressure switches, which detect deviations from the normal operating limits of either pressure or medical vacuum.		
13.2		Each gas service will be displayed by coloured 'Normal' 'Low' and 'High Pressure' conditions. Medical vacuum systems will be displayed in the 'Normal' and 'Low Vacuum' conditions only. Failure indicators will be displayed by flashing lights and normal indications will be steady.		
13.3		An audible warning will sound simultaneously with any failure indication and a mute facility will be provided. A maintenance 'Mute' switch will be provided internally to the panel for use during maintenance, which results in prolonged pipeline or plant shutdown. This facility will automatically reset when the gas service returns to normal.		
13.4		The alarm panel will have a 'test' facility to prove the integrity of the internal circuits, LED's and audible warning. The alarm panel will incorporate a volt free normally closed relay to allow for interconnection to either a medical gas central alarm system or an event recording circuit of a building management system.		
14		<b>Bed Head Panel (Indigenous )</b>		
14.1		The panel will integrate the mechanical, electronic and data systems at the patient bed side with an aim to facilitate easier access to doctors, enhance the comfort of the patient and of aesthetics of the ward.		
14.2		The bed head panel (horizontal) is made from high strength extruded aluminum profiles with powder coating with a choice of colour to suit the interior décor of the hospital. It will be custom built to house gas and electrical outlets		
14.3		Bed head panels will be supplied with powder coating on aluminum with a choice of colour to suit the interior décor of the hospital's ICU etc.		
14.4		Each bed head panel 5 feet long for ICU Beds will be following :		
14.5		- Provision for One Oxygen outlets, One vacuum outlet, One C.Air outlet.		
14.6		- 4 no. Electrical Sockets & I.V Pole		
		<b>Mortuary</b>		
85		<b>Cold Storage Mortuary Cabinet (6 bodies)</b>	2	Bluestar/Freezer India/Yorco
		<b>Operational Requirements</b>		
		<b>Technical Specification</b>		
1		SS chamber of 6 cabinets		
2		Each cabinet is for storing one cadaver		
3		Temp -2 to +5 degree celsius		

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Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
4		Digital temp. controller		
5		81 1/2" High x 55" Wide x 34.6" Deep		
6		Epoxy coated wire shelves		
7		Door mounted security lock		
8		Top-mounted, non-CFC refrigeration system (R404A)		
9		Air Cooled Condensor		
10		Automatic Defrost		
11		Digital Thermometer LED		
12		Perimeter anti-condensate door opening heater wires to prevent "freeze-out"		
13		Door activated interior fluorescent light		
14		Condensation is automatically evaporated in a collection pan.		
15		Cabinet interior and exterior door and sides are fabricated of premium grade stainless steel.		
16		Galvanized exterior top and bottom corrosion proof powder coated.		
		<b>General Furniture specification - Common to all</b>		
		Procedures for Quality Assurance (ISO 9001:2008, ISO 14001:2004, OHSAS 18001:2007 & ISO 13485:2009). Ensures all products are with improved comfort, accessibility, safety and hygiene to patients and care takers.		
		MS tubular parts, linkages, flats are pretreated in-house, shot blasted and epoxy powder coated as per ISI Standards - 50 to 60 microns. SS parts are with matt finish.		
		Main frame of beds are of 60 mm x 30 mm x 16 gauge ERW MS Rectangular tube. The sheet top is of 18 gauge of CRCA MS sheets. This ensures stability of the bed		
		The sheets are perforated with uniformly spaced holes in each section. Enhances breathing of mattress – ensures better hygiene and durability of mattress		
		Perforation are burr free and have no sharp edges - ensures safety for house keeping & nursing care staff		
		Finishing & Workmanship must be of high standards as it of prime importance in medical furniture.		
		MS parts pass the 8 dip tank pre treatment for preparation of metal surface to absorb powder coating. Followed by Phosphate coating for corrosion resistance. The phosphate layered parts are passed through oven at temperature of 180 to 200 degree to ensure the parts are completely dry before entering the epoxy powder coating chamber. Test certificate for Phosphate coating can be shared on request		
		To ensure highest quality of powder coating, in-house laboratory test for: Impact test, bend test and salt spray test is conducted on MS parts as it comes out of epoxy powder coating conveyor		
		<b>Office Furnitures</b>		<b>Indicative Model (Godrej make)</b>

Sl. No.	Dept	Description of item / Equipment	Quantity	Suggested makes / Equivalent
			5 Storeyed	
86		Executive Chair	8	Bravo High Back
87		Executive Table	8	Godrej make Finesse 5026 +ERU3619+pedestal
88		Office Table	70	Godrej make Enterprise 1350
89		Office Chair	200	Godrej make Fiona MB
90		Visitor Chair	200	Bravo Visitor
91		Side Table	90	PISA
92		Conference Table	1	Senate (Each seater)
93		Library Rack	5	Double sided Steel book rack
94		White Board	6	Sq Mtr
95		Notice Board	4	Sq Mtr
96		Low ht Storage	30	VSDU 2
97		Over head cupboard	2	OHSU
98		15 seater conf table	1	Senate
99		2 seater sofa	5	Midas 2 seater
100		center table	5	PISA
101		Chair with Arm	120	CARINA VISITOR
102		Chair without arm	80	CH 1112
103		Chair Revolving	20	BRAVO Mid back
104		Weighing Machine adult	20	<b>Omron make</b>
105		Weighing Machine Baby	10	<b>Omron make</b>
106		Sectrtariate table	15	Ascent
107		Half Sectrtariate Table	20	Enterprise 1650
108		Table dispensing	16	Insight 1800
109		Water purifier	20	

**Modified Form 3.2.1**  
**Medical Equipments - 5 Storeyed**

Sl.	Description of item/ Medical Equipment	Quantity in number	Unit Cost* (In INR)	Cost* (Quantity X Unit Cost) (In INR)
<b>Radiology</b>				
1	Digital Radiography System (Ceiling Suspended)	1		
2	300 M.A. X-ray machine with Radiography and Fluroscopy	1		
3	C arm with accessories	1		
4	CR System	1		
5	Colour Doppler	1		
<b>ICU/CCU</b>				
6	Biphasic Defibrillator	2		
7	Multiparameter Monitors	2		
8	Suction machine	3		
9	Head Light Source	1		
10	Nebulizers	5		
11	Portable Lights	2		
12	Patient warmer	2		
<b>Operation Theatre</b>				
13	Anesthesia Work Station with Ventilators	4		
14	Resuciation Kit	4		
15	OT table	4		
16	OT Lights	4		
17	Flash Sterilizer	1		
18	Surgical Diathermy	4		
19	Automatic External Defibrillator	1		
<b>Physio Therapy Department</b>				
20	Interferential therapy unit	1		
21	Ultra sound therapy Unit	1		
22	Hydrocolator	1		
23	Electric Muscle Stimulator	1		
24	Computerised traction & Microwave therapy	1		
25	Exercise Therapy Equipment	1		
26	Infra red lamp	1		
27	Wax Bath	1		
28	Shoulder wheel	1		
<b>Paediatrics</b>				
29	Radiant Warmer with Bassinet	4		
30	Baby Incubators	2		
31	Photo Therapy Equipments	2		
32	Neonatal Ventilator	2		
<b>OPD Equipments</b>				
33	ECC machine computerized	2		

Sl.	Description of item/ Medical Equipment	Quantity in number	Unit Cost* (In INR)	Cost* (Quantity X Unit Cost) (In INR)
34	B.P.apparatus table model (Analog)	10		
35	B.P.apparatus stand model (Analog)	10		
<b>Gynecology</b>				
36	Foetal Doppler	2		
<b>ENT</b>				
37	Audiometer	1		
38	Operating Microscope (ENT)	1		
39	ENT Operation set including headlight	2		
40	ENT Nasal Set	1		
41	Laryngoscope fibreoptic ENT	5		
42	Laryngoscope indirect	2		
43	Otoscope	2		
44	Head Light (cold light)	2		
45	Sound Proof Room	1		
<b>Ophthalmology</b>				
46	Snellen chart/Drum with remote	1		
47	Trial lens sets with frames	1		
48	Log Mar Vision Charts	1		
49	Ophthalmoscope - Direct	2		
50	Slit Lamp	1		
51	Retino scope	2		
52	Perimeter	1		
53	Ophthalmic Dr Chair	1		
54	Keratometre	1		
55	Auto Refractometer	1		
56	Non contact tonometer	1		
57	Dental Chair with accessories	2		
58	Dental X Ray	1		
59	Dental Instruments & Accessories	2		
<b>Laboratory Equipments</b>				
60	Electric Colorimeter	1		
61	Semi -Auto analyser Bio Chem	1		
62	Micro pipettes of different volumes (set of 10 pipettes)	1		
63	Shaker Water bath	1		
64	Hot Air oven	1		
65	Lab Incubator	1		
66	Hot plates	1		
67	Rotor / Shaker	1		
68	Counting chamber	2		
69	Paediatric Glucometer	1		
70	Glucometer	2		
71	Haemoglobinometer	1		
72	Automated Microtome	1		
73	Elisa Reader cum washer	1		
74	Electrolyte Analyser	1		
75	Glycosylated Haemoglobinometer	1		

Sl.	Description of item/ Medical Equipment	Quantity in number	Unit Cost* (In INR)	Cost* (Quantity X Unit Cost) (In INR)
76	Haematology Analyser	1		
77	Laboratory Autoclaves	2		
78	Ordinary Refrigerator	2		
79	Flootation Bath	2		
80	Class - I Bio Safety Cabinet	1		
81	Cyto Spin	1		
	<b>Endoscopy Equipments</b>			
82	Endoscope (OGD)	1		
83	Laparoscope operating major with accessories	1		
	<b>Medical Gas System</b>			
84	Medical Gas system	1		
	<b>Mortuary</b>			
85	Cold Storage Mortuary Cabinet (6 bodies)	4		
<b>Cost (3.2.1)</b> <b>(Total cost of Medical Equipments for one 5 Storeyed Hospital)</b>				

\* The cost is inclusive of all Taxes and charges

The specified field assigned against "Medical Equipment (B)" in the BOQ in .xls consist of Cost (3.2.1)

**Modified Form 3.3.1  
( Furniture - 5 Storyed Hospital)**

Sl. No.	Description of item/Furniture	Quantity in number	Unit Cost* (In INR)	Cost* (Quantity X Unit Cost) (In INR)
<b>Office Furniture</b>				
1	Executive Chair	8		
2	Executive Table	8		
3	Office Table	70		
4	Office Chair	200		
5	Visitor Chair	200		
6	Side Table	90		
7	Conference Table	1		
8	Library Rack	5		
9	White Board	6		
10	Notice Board	4		
11	Low ht Storage	30		
12	Over head cupboard	2		
13	15 seater conf table	1		
14	2 seater sofa	5		
15	Center table	5		
16	Chair with Arm	120		
17	Chair without arm	80		
18	Chair Revolving	20		
19	Weighing Machine adult	20		
20	Weighing Machine Baby	10		
21	Sectrtariate table	15		
22	Half Sectrtariate Table	20		
23	Table dispensing	16		
24	Water purifier	20		
<b>Cost (3.3.1) (Total cost of Furniture for one 5 Storeyed Hospital)</b>				

\* The cost is inclusive of all Taxes and charges  
The specified field assigned against "Furniture (C)" in the BOQ in .xls consist of Cost (3.3.1)

**Modified Form 21A**  
**CMC rate in INR of Medical Equipments**  
**(after completion of 3 years warranty)**

Sl.	Description of item/ Medical Equipment	Quantity in number	Year1	Year2	Year3	Year4	Year5
<b>Radiology</b>							
1	Digital Radiography System (Ceiling Suspended)	1					
2	300 M.A. X-ray machine with Radiography and Fluroscopy	1					
3	C arm with accessories	1					
4	CR System	1					
5	Colour Doppler	1					
<b>ICU/CCU</b>							
6	Biphasic Defibrillator	2					
7	Multiparameter Monitors	2					
8	Suction machine	3					
9	Head Light Source	1					
10	Nebulizers	5					
11	Portable Lights	2					
12	Patient warmer	2					
<b>Operation Theatre</b>							
13	Anesthesia Work Station with Ventilators	4					
14	Resuscitation Kit	4					
15	OT table	4					
16	OT Lights	4					
17	Flash Sterilizer	1					
18	Surgical Diathermy	4					
19	Automatic External Defibrillator	1					
<b>Physio Therapy Department</b>							
20	Interferential therapy unit	1					
21	Ultra sound therapy Unit	1					
22	Hydrocolator	1					
23	Electric Muscle Stimulator	1					
24	Computerised traction & Microwave therapy	1					
25	Exercise Therapy Equipment	1					
26	Infra red lamp	1					
27	Wax Bath	1					
28	Shoulder wheel	1					
<b>Paediatrics</b>							
29	Radiant Warmer with Bassinet	4					
30	Baby Incubators	2					
31	Photo Therapy Equipments	2					
32	Neonatal Ventilator	2					
<b>OPD Equipments</b>							



Sl.	Description of item/ Medical Equipment	Quantity in number	Year1	Year2	Year3	Year4	Year5
33	ECG machine computerized	2					
34	B.P.apparatus table model (Analog)	10					
35	B.P.apparatus stand model (Analog)	10					
<b>Gyanecology</b>							
36	Foetal Doppler	2					
<b>ENT</b>							
37	Audiometer	1					
38	Operating Microscope (ENT)	1					
39	ENT Operation set including headlight	2					
40	ENT Nasal Set	1					
41	Laryngoscope fiberoptic ENT	5					
42	Laryngoscope indirect	2					
43	Otoscope	2					
44	Head Light (cold light)	2					
45	Sound Proof Room	1					
<b>Ophthalmology</b>							
46	Snellen chart/Drum with remote	1					
47	Trial lens sets with frames	1					
48	Log Mar Vision Charts	1					
49	Ophthalmoscope - Direct	2					
50	Slit Lamp	1					
51	Retino scope	2					
52	Perimeter	1					
53	Ophthalmic Dr Chair	1					
54	Keratometre	1					
55	Auto Refractometer	1					
56	Non contact tonometer	1					
57	Dental Chair with accessories	2					
58	Dental X Ray	1					
59	Dental Instruments & Accessories	2					
<b>Laboratory Equipments</b>							
60	Electric Colorimeter	1					
61	Semi -Auto analyser Bio Chem	1					
62	Micro pipettes of different volumes (set of 10 pipettes)	1					
63	Shaker Water bath	1					
64	Hot Air oven	1					
65	Lab Incubator	1					
66	Hot plates	1					
67	Rotor / Shaker	1					
68	Counting chamber	2					
69	Paediatric Glucometer	1					
70	Glucometer	2					
71	Haemoglobinometer	1					
72	Automated Microtome	1					
73	Elisa Reader cum washer	1					
74	Electrolyte Analyser	1					

Sl.	Description of item/ Medical Equipment	Quantity in number	Year1	Year2	Year3	Year4	Year5
75	Glycosylated Haemoglobinometer	1					
76	Haematology Analyser	1					
77	Laboratory Autoclaves	2					
78	Ordinary Refrigerator	2					
79	Floatation Bath	2					
80	Class - I Bio Safety Cabinet	1					
81	Cyto Spin	1					
<b>Endoscopy Equipments</b>							
82	Endoscope (OGD)	1					
83	Laparoscope operating major with accessories	1					
<b>Medical Gas System</b>							
84	Medical Gas system	1					
<b>Mortuary</b>							
85	Cold Storage Mortuary Cabinet (6 bodies)	4					