

Corrigendum-VIII

Bihar Medical Services and Infrastructure Corporation Limited (BMSICL) had invited E-Bids from the interested parties for the Supply, Installation, & Commissioning of Medical Equipment on Turnkey Basis for IGIC, New Building Patna, Bihar, vide Notice Inviting Tender No.-BMSIC/2018-19/ME-126. In the pre-bid meeting various suggestions were received from the prospective bidders regarding amendment in technical specification. In order to facilitate maximum participation of bidders some amendments have been made by the experts which are annexed as Annexure-I (Revised Schedule of requirement) and Annexure- II (Amended technical specification) of this corrigendum

- Encloser- 1. Annexure-I (Total pages-07)
2. Annexure-I (Total pages-92)

Sd/-

GM (Procurement)

Anexure-1

Section IV-Schedule of Requirement

DEPARTMENT	S.NO.	Name of Equipment	Revised name of Equipment	Qty. Before Amendment	Qty. After Amendment
CARDIAC OT	1	Modular OT Fabrication		2	Deleted
	2	High End DEFIBRILLATOR WITH INTERNAL PADDLES (adult & paediatric) & external paddles (adult & paediatric)		2	2
	3	High End Cardiac OT LIGHT with 3 dome		2	2
	4	OT TABLE ELECTRO HYDRAULIC type (High end Cardiac)		2	2
	5	SURGICAL LED HEAD LIGHT WITH LIGHT SOURCE AND HEAD BAND (with rechargeable batteries -03)		2	2
	6	ABG MACHINE (1 at OT+1 at SICU)		2	2
	7	SURGICAL LOUPES		4 sets	4 sets
	8	STERNAL SAW		2 sets	2 sets
	9	ELECTRO SURGICAL UNIT		3	Deleted
	10	ACT MACHINE (AUTOMATED COAGULATION TIMER)		2	2
	11	HEART LUNG MACHINE with Heater cooler system		2	1
	12	TRANSPORT INCUBATOR(PAED)		2	2
	13	HEMOTHERM MACHINE		2	Deleted
	14	High End Suction Machine		2	2
	15	Video Laryngoscope with blades		2	2
	16	Hand Disinfectant Dispenser System		4	4
	17	Vigileo Monitor		2	Deleted
	18	Flexible bronchoscope Adult and Paediatric with Camera		2	1
	19	Advanced Airway and Clearing system		2	2
	20	Endoscopic Thoracic Surgery Instruments		1	1
	21	Anaesthesia Work Station		3	3
	22	Advanced Patient Trolley with transport ventilator plus monitor		2	1
	23	Tub Dilator with different sizes (each set having 3 nos.)		2	2
	24	IABP Machine		2	2
	25	Cell Saver		1	1
	26	Hypothermia Mattress		2	2
	27	Echo Doppler Machine with TEE Facility		1	1
	28	ECMO system		1	1
	29	Portable OT Light		1	1
	30	NIRS monitor with cerebral oximeter		1	1
	31	Temp Pace Maker-Single Cham		2	2
	32	Temp Pace Maker-Double Cham		2	2
	33	Portable Spirometer		1	1
	34	Freezer (165 Litre)		1	1
	35	Blood Storage Cabinet(165 Litre)		1	1
	38	X ray View Box(2-film)		0	2
	39	Height measuring scale		0	2
	40	Weighing machine digital		0	2
TSSU	1	Washer Disinfectant		1	1
	2	Flash Sterilizer		2	1

CARDIAC CATHLAB	1	Cath lab Fabrication		2	2
	2	Light for CATH procedure (MAVIC Type)		2	2
	3	C-ARM (FOR PACEMAKER)	C-ARM		
	4	X-RAY GENERATOR			
	5	DIGITAL CARDIAC IMAGING SYSTEM			
	6	PATIENT TABLE (WEIGHT BEARING CUSTOMISED)			
	7	CATHLAB RECORDING SYSTEM			
	8	FLAT DETECTOR			
	9	EXAMINATION LAMP, 230 V			
	10	X-RAY GENERATOR / TUBE			
	11	IABP Machine		2	1
	12	2D ECHO CARDIOGRAPHY COLOUR DOPPLER SYSTEM(PORTABLE)		2	1
	13	Infusion Pump-(10 in each lab)		2	Deleted
	14	Injector		2	2
	15	IVUS (INTRA VASCULAR USG)		1	Deleted
	16	OPTICAL COHERENCE TOMOGRAPHY (OCT) SYSTEM		1	1
	17	ACT (AUTOMATED COAGULATION TIMER)		1	1
	18	E.P.LAB(ELECTRO-PHYSIOLOGY) WITH CARDIAC MAPPING SYSTEMS		1	Deleted
	19	EXTERNAL PACER WITH DEFIB		4	2
	20	DUAL CHAMBER TEMPORARY PACEMAKER		2	2
	21	SINGLE CHAMBER TEMPORARY PACEMAKER		2	2
	22	Rota		1	1
	23	Cautery		1	Deleted
	24	Empella		1	Deleted
	25	Defib with external pacer		0	1
	26	Emergency trolley (with Cylinedr facility)		0	2
	27	Crash Cart		0	1
	28	Electrical suction		0	1
	29	X Ray View box(4 film)		0	1
NON INVASIVE LAB SECTION	1	Non invasive lab fabrication		2	Deleted
	2	HOLTER SYSTEM-Advance Analyzers- two (five recorder for each analyzer)		2	2
	3	ABP Monitoring		3	3
	4	TILT TABLE (ELECTRIC OPERATED)		1	1
	5	Advanced Patient Trolley with transport ventilator plus monitor		2	Deleted
	6	Advance TMT Machine		3	2
	7	Defib with external pacer with crashcart		1	1
	8	Master Screen PFT System		2	1
	9	Portable Spiro meter		1	2
	10	Crash Cart(Larangoscope+Ambu Bag+Incubation tubing)		0	1
	11	Height measuring scale		0	1
	12	Weighing Machine Digital		0	1
	13	Mobile BP instrument with Stand and wheel		0	2
	14	Stethoscope		0	2
	15	X ray View box(1 film)		0	1
IMAGING DEPARTMENT	1	CT Scan (256 slice)		1	1

	2	Ultrasound Machine with abdominal & linear transducer (7-20MHz)		1	1
	3	Digital X-ray 800 mA ceiling suspended system with dual detector		1	Deleted
	4	Portable X-ray Machine (Digital 100 mA)	Portable X-ray Machine (100 mA)	5	2
	5	CR System		1	Deleted
	6	Crash Cart(Larangoscope+Ambu Bag+Incubation tubing)		0	1
	7	Height measuring scale		0	1
	8	Weighing Machine Digital		0	1
	9	Mobile BP instrument with Stand and wheel		0	2
	10	Stethoscope		0	2
	11	X ray View box(4 film)		0	2
	12	Lead Aprin(Full body) with Thyroid shield		0	10
DIALYSIS	1	RO Plant		1	Deleted
	2	CRRT		1	1
EMERGENCY	1	Minor OT table		2	Deleted
	2	Crash Cart	Crash Cart (Larangoscope+Ambu Bag+Incubation tubing)	3	2
	3	Suction Machine electrical		2	2
	4	Mobile BP instrument with Stand and wheel		5	5
	5	Advanced Patient Trolley with transport ventilator plus monitor		2	1
	6	Modular Emergency Trolley		30	Deleted
	7	Nebulizer		5	10
	8	X Ray View Box(1-film)		0	2
OPDs	1	Sphygmomanometer with stand		10	10
	2	Stethoscope		10	10
	3	Weighing machine Digital		10	10
	4	Height Measuring Scale		10	10
	5	Patient Examination Couch		10	10
	6	Pulse Oximeter (Small type)	Pulse Oximeter	10	Deleted
	7	View box		10	10
	10	Mobile BP instrument with Stand and wheel		0	10
PROCEDURE ROOM	1	OT Table		1	Deleted
	2	OT Light		1	Deleted
	3	Monitor	Patient Monitor (Basic)	1	Deleted
	4	Defibrillator with external Pacer	Defibrillator with external Pacer on Crash cart	1	1
	5	Electric Suction		1	1
		Lead apron (full body) with thyroid shield		0	5
		Basic Instrument set	Basic Instrument set (Kidney Tray-1, Galipot(small)-01, Galipot(medium)-01 ,Sponge Holder-01 , Artery Forcep-02, Towel Clip-06 ,Needle Holder-01 , Tooth Forcep-01, Straight Cutting Needle-01, Curve Cutting Needle-01 ,BP Holder-01, Lifter with Jar-01)	0	10

ECHO lab	1	Advanced 3D+4D Echo with 3D-TEE probe, adult cardiac probe, paediatric cardiac probe & neonatal cardiac probe	Advanced 3D+4D Echo with adult cardiac probe, paediatric cardiac probe &	1	1
	2	Advanced 2D Echo machine with colour Doppler with strain Imaging having adult cardiac probe, paediatric cardiac probe & neonatal cardiac probe	Advanced 2D Echo machine with colour Doppler with strain Imaging having TEE probe, adult cardiac probe, paediatric cardiac probe & neonatal cardiac probe with Stress Echo Package, added	3	1
	3	Advanced 2D Echo with color Doppler with stress Echo and TEE probe, having adult cardiac probe, paediatric cardiac probe		1	Deleted
	4	Portable ECHO 2D having adult cardiac probe and paediatric cardiac (Emergency, Medical and surgical ICU)	Portable ECHO 2D with Colour Doppler having adult cardiac probe and paediatric cardiac (Emergency, Medical and surgical ICU)	3	3
	5	Crash Cart (Larngoscope+Ambu Bag+Incubation tubing)		0	1
	6	Height measuring scale		0	1
	7	Weighing Machine Digital		0	1
	8	Mobile BP instrument with Stand and wheel		0	1
	9	Stethoscope		0	1
	10	X ray View box (1 - film)		0	1
LABORATORY	1	Biochemistry Analyzer		1	Deleted
	3	Automated Electrolyte Analyzer	Automated Electrolyte Analyzer (with printer)	1	1
		Microbiology			
	4	Auto Clave Vertical		1	1
	5	Centrifuge (16 tube)		1	3
	6	Compound Microscope (Trinocular with Light source system and Fungus free lens)		1	2
	7	Automatic Elisa reader		1	1
	8	Auto coagulo meter (for PT- INR/ APTT/ D- Dimer)		1	2
	9	Auto Analyzer should have Cardiac Marker Facility	Auto Analyzer should have Cardiac Marker Facility with thyroid function and HS Troponin	1	1
	10	Refrigerator-365 Lit		2	2
	11	Auto Washer		1	1
	12	Modular Lab		1	Deleted
	13	Hot air Oven		1	1
	14	Sample Collection couch		3	3
	15	Modular Lab Table		1	Deleted
	16	Auto Pipettes-			
		a. 1-25 micro lit		0	5
		b. 1-100 micro lit		0	5
		c. 100-1000 micro lit		0	5
	18	Auto Multi Pipettes -05 prong		0	
		1-100 Micro lit		0	2
	19	Crash Cart (Larngoscope+Ambu Bag+Incubation tubing)		0	1
	20	Height measuring scale		0	1
	21	Weighing Machine Digital		0	1

	22	Mobile BP instrument with Stand and wheel		0	1
	23	Stethoscope		0	1
	24	X ray View box(1- film)		0	1
	25	Automated Blood cell counter 5 Part		0	1
ICU(MICU/SICU)			ICU(SICU/CCU/ICCU)		
	1	Defibrillator		6	5
	2	Emergency Trolley	Emergency Trolley (with oxygen cylinder)	4	4
	3	Crash Cart	Crash Cart (Larangoscope+Ambu Bag+Incubation tubing)	6	6
	4	Portable Suction Machine		3	4
	5	Weighing Machine Digital		0	3
	6	Mobile BP instrument with Stand and wheel		0	3
	7	Stethoscope		0	3
	8	BP instrument		0	3
	9	X ray View box(2- film)		0	3
TEMPORARY PACING ROOM	1	CARM		1	Deleted
	2	OT Light (small)		1	Deleted
	3	OT Table (small)		1	Deleted
	4	Monitor		1	Deleted
	5	Defibrillator with external Pacer on Crash cart		1	Deleted
GENERAL WARD	1	Commode chair		15	10
	2	Examination couch metal/wooden		5	Deleted
	3	Examination lamp, mobile		5	Deleted
	4	Trolley, dressing		10	30
	5	Trolley, oxygen gas cylinder		15	4
	6	Wheel chair adult		10	10
	7	Manual suction machine	Electric Suction Machine	10	5
	8	Sphygmomanometer		30	20
	9	Thermometer clinical		50	50
	10	Stethoscope		30	30
NON MEDICAL FURNITURE	1	Storage Cabinet (Sliding Doors)		15	Deleted
	2	Storage Rack S.S		15	
	3	Almirah		10	
	4	Staff Chair		200	
	5	Executive Table		200	
	6	Conference Table and Chair		1	
	7	Clean Linen Trolley		10	
	8	Floor Cleaning trolley		10	
	9	Walk in Refrigerator		2	
	10	Waste Bin-SS		15	
	11	Water dispenser with cold & hot outlet		9	
	12	Change Locker -12 compartments		15	
	13	Visitor Chair-3 seater		100	

FURNITURE AND FIXTURES	1	Instrument Trolley		10	Deleted
	2	Dressing Trolley		15	5
	3	Medicine Trolley		15	Deleted
	4	Oxygen Trolley		20	Deleted
	5	Crash Cart		5	Deleted
	6	Storage Cupboard Medical		10	Deleted
	7	Patient Trolley		10	Deleted
	8	Couch for USG/ECHO	Couch for USG/ECHO/TMT	4	8
	9	Over Bed Table		192	Deleted
	10	Wheel Chair		30	Deleted
	11	Surgeon Chair for OT		10	Deleted
	12	Kick Bucket		15	Deleted
	13	Mayo Trolley:		15	Deleted
	14	Attendant bed with mattress		150	Deleted
	15	Drug Cart		15	10
	16	Soiled Linen Cart		10	Deleted
	17	Double Step Stool		10	Deleted
	18	Single Step Stool		10	Deleted
	19	Foot End table		0	250
TRACK SYSTEM		Track System with Curtains		250 Beds	Deleted
IV TREE SYSTEM		I.V. Tree System 5 point hanger with 6' track and all accessories with 2 IV tracks per bed		250 Beds	Deleted
NURSE CALL SYSTEM	1	NURSE STATION CONSOLE		250 Beds	Deleted
	2	Bedside (Normal) Nurse Call Modules			
	3	Bathroom (Emergency) Pull Cord Modules			
	4	Bedside Push Cord			
	5	Corridor Dome Lights			
MGPS	1	OXYGEN SYSTEM			Deleted
	2	NITROUS OXIDE SYSTEM			
	3	COMPRESSED AIR SYSTEM			
	4	VACUUM CENTRAL SYSTEM			
	5	AGS SYSTEM (Imported)			
	6	BED HEAD PANEL			
	7	Medical Grade copper pipe with required copper fittings. The Medical Grade Pipes should be as per EN13348 Standard and to be certified by Lloyd's/TUV SGS. The Copper fitting should be as per EN1254 standard.			
	8	FLOOR ISOLATION VALVES			
	9	VALVE WITH VALVE BOX AND AREA LINE PRESSURE ALARM, (IMPORTED)			
	10	Master Alarm (5 Gas Services, 4 Gas Services, 3 Gas Services, 2 Gas Services)			
	11	COMBINED ELECTRICAL PANELS			
INSTRUMENTS	1	CTVS Surgery Set		0	4
MORTUARY	1	4 Chamber		1	Deleted
	2	Autopsy Table		1	1

BIO MEDICAL WASTE FACILITIES	1	Trolleys	Trolleys with facility of 3 different colour bins of adequate size	10	Deleted
	2	Colored Bins		100	Deleted
	3	Colored Bags		100	Deleted
	4	Needle cutter(electrical)		0	50
RECORD ROOM	1	Filing Cabinet		5	Deleted

Annexure-II (Amended Technical Specification)			
DEPARTMENT	EQUIPMENT NAME	Technical Specification Before Amendment	After Amendment
1. Cardiac O.T	Modular OT fabrication		Deleted
	High End DEFIBRILLATOR WITH INTERNAL PADDLES (adult & pediatric) & external paddles (adult & pediatric)	Biphasic, Manual and AED with voice prompt, compact and light weight.	No Change
		2. Energy selection 5J to 200J in steps.	No Change
		3. Momentary energy selection access on front panel.	No Change
		4. Should have adult and paediatric paddles integrated on same handle.	No Change
		5. Monitor should display selected and delivered energy.	No Change
		6. Charging time maximum 5 secs for 200J.	No Change
		7. Should have battery backup for 50 discharges of 200J.	No Change
		8. Should have ECG inputs through paddles or 5 lead cables.	No Change
		9. Should have display for selected ECG input source	No Change
		10. Should have an inbuilt thermal recorder.	No Change
		11. Should supply 2 bottles of jelly, 12 roll of thermal paper.	No Change
		12. Should supply three pairs of AED pads and the prices of AED Pads should be quoted separately in financial bid.	No Change
		13. Should work on 220VAC +/-10%, 50 Hz.	No Change
		14. US FDA and European CE Approved model should be offered.	US FDA Approved model should be offered
			Added Sl. No-15 Should have external pacing facility with leads
	High End Cardiac OT LIGHT with 3 dome	1) The OT Light should be of latest LED lens technology and consist Of 1 Major Dome and 2 Minor Domes.	1) The OT Light should be of latest LED lens technology and consist Of 2 Major Dome and 1 Minor Domes.
		2) The Light should allow a homogeneous light field with maximum shadow dilution and highest degree of brilliance and color rendition.	No Change
		3) The Light housing should provide for high hygiene levels by providing a closed housing with smooth contours, rounded edges without any visible screw connections to ensure optimum wiping disinfection	No Change
		4) The system should have the following controls integrated in the control keypad	No Change
		- Light field adjustment	No Change
		- ON/OFF	No Change
		- Variable color changes	No Change
		- Brightness control	No Change
			No Change
		5) The light should not have any moving parts for adjusting the light field diameter ensuring less maintenance,	No Change
		6) The light should have an illuminance of 160,000 lux for Major dome and 130000 lux for each of the Minor domes, at a distance of 1 meter	6) The light should have an illuminance, not less than 160,000 lux for Major dome and 130000 lux for the Minor domes, at a distance of 1 meter
		7) Color temperature Should be Variable between 3,600 K - 4,300 K - 4,600K in all domes.	No Change
		8) The Domes should have light field diameter between 160/ 170 to 220/230 mm.	No Change

9) The domes should have Color rendering index of 95	No Change
10) Illumination Depth should be more than 750mm in both major and minor dome.	No Change
11) The luminous efficiency of the lights should be approximately 320 lm/w in the major and minor domes	No Change
12) The light should be dimmable from 30-100% and be a very dim light of 5% during Endo Mode in major and minor domes.	No Change
13) The Working range should be around 670mm to 1400mm or more in major and minor domes	No Change
14) Average LED life > 40,000 h	No Change
15) Primary power requirement 55 VA + 55 VA	No Change
16) The Electronic system of the light should confirm to VDE and IEC	No Change
17) Should have a Protection class acc. to IEC 601 and should confirm to European CE or US FDA	No Change
<u>Specification Of HD Camera For OT Light</u>	No Change
1. The Camera should be High dimension and have full HD video Output.	No Change
2. The Camera Should be Mounted in the centre of the dome.	No Change
3. The camera should have facility for zoom - 120 x zoom (10 x optical / 12 x digital)	No Change
4. The Camera should have convenient control of all camera functions via a separate control unit.	No Change
5. There should be Video signal and control signal interface via combination wall socket.	No Change
6. There should be HD –DSI digital video signal via BNC socket.	No Change
7. There should be Control signals via multiple DIN socket.	No Change
8. There should be no image interference caused by electro-surgery.	No Change
9. The Camera & Monitor Arm Should be of the same manufacturer as of the O.T. Light.	No Change
<u>Technical Data Of HD Camera</u>	No Change
Image Sensor 1/3" CMOS	No Change
Number of pixels 1920 x 1080i	No Change
Effective pixel number approx. 2,000,000	No Change
Signal system Standard : 1080i / 50 Hz, Optional : 1080i / 59.94 Hz, 720p / 50 Hz, 720p / 59.94 Hz	No Change
Aspect (height-to-width) ratio 16:09	No Change
Minimum illumination 12 lx	No Change
Signal-to-noise ratio (SNR) >50 dB	No Change
Zoom 10x optical / 12 x digital	No Change
Focal length (zoom lens) f = 5.1 mm to 51 mm	No Change
Shutter ½ to 1/10,000" S	No Change
White balance Automatic	No Change
Ambient temperature 0 °C – 45 °C (32 °F – 113 °F)	No Change
Ambient temperature during operation 0 °C – 45 °C (32 °F – 113 °F)	No Change
Power requirements : control unit / camera 100-240 V, 50/60 Hz / 24 AC / DC	No Change
Protection class I	No Change
Type B	No Change
Protective conductor (PE) terminal Yes	No Change
Power input : control unit / camera max. 24 W / approx. 6 W	No Change

		Camera dimensions 131 x 88 mm (length x diameter)	No Change
		Weight of camera installed in light head Approx. 1 Kg.	No Change
		Weight of camera mounted on separate arm Approx. 0.8 Kg.	No Change
		Dimensions of control unit (complete) 270 x 120 x 20 mm (W x H x D)	No Change
		Weight of control unit Approx. 2 Kgs.	No Change
		Mark of conformity CE	No Change
		Wall socket connector standard 3 x BNC socket for video signal 1 x multiple DIN socket for control signals	No Change
		Resolution 1920 x 1080 pixels	No Change
		Specification Of The Monitor	No Change
		The Monitor should be LED HD Medical Grade Monitor (Approx 21") and should be mounted on the 4th arm of the OT Light.	No Change
		<ul style="list-style-type: none"> (If Height is a constraint then the third dome & monitor arm may be fixed on a separate ceiling plate) 	No Change
	OT TABLE ELECTRO HYDRAULIC type (High end Cardiac)	1. Description of Function.	No Change
		C arm compatible Electro-Hydraulic OT Tales are operated with ease and smoothness with press of buttons of remote or control panel and also operated by manual in case of power failure.	No Change
		2. Operational Requirements.	No Change
		OT Table is required for general surgery and should have	No Change
		X-Ray translucent tops.	No Change
		3. Technical Specifications.	
		1. Four / Five section table top with divided foot section.	No Change
		2. Table top should be constructed from a high-pressure laminate to permit x-ray penetration and fluoroscopy.	No Change
		3. All table positioning, i.e., height, back section, lateral tilt, trendelenburg and anti-trendelenburg, except foot and head section should be operated hydraulically.	No Change
		4. Should have a manual position selector. Table should be operational even in case of power failure & without battery.	No Change
		5. The casings on the frame and centre supporting column should be made of hygienic stainless steel and should have built in elevator for kidney and chest bridge.	No Change
		6. Mattress should be radio lucent and suitable for fluoroscopy.	No Change
		7. Measurements: (all dimensions are approximated to +/- 10 % variations).	No Change
		a. Height : 600 mm - 950 mm.	No Change
		b. Side tilt : + 30 degrees.	No Change
		c. Back section adjustment : - 15 degrees to 70 degrees.	No Change
		d. Foot section adjustment : - 90 to 0 degree, detachable.	No Change
		e. Trendelenburg : 25 degree.	No Change
		f. Anti trendelenburg : 25 degree.	No Change
		g. Head section adjustment : -40 to -30 degree, detachable.	No Change
		h. Maximum width : 550 mm or more.	No Change
		i. Length : 1950 mm.	No Change
		4. System Configuration Accessories, Spares and Consumables.	No Change
		1. System as specified.	No Change
		2. Accessories should include.	No Change
		a. Padded arm rest with straps - pair with dampers.	No Change

		b. Anaesthesia screen with clamps.	No Change
		c. Side supports : pair with clamps.	No Change
		d. Shoulder supports : pair with clamps.	No Change
		e. Knee crutches : pair with damp.	No Change
		f. X-ray cassette tray.	No Change
		g. Kidney bridge.	No Change
		h. SS bowl with clamps.	No Change
		i. Infusion rod with clamp.	No Change
	SURGICAL LED HEAD LIGHT WITH LIGHT SOURCE AND HEAD BAND (with rechargeable batteries -03)	Name of equipmet-SURGICAL LED HEAD LIGHT WITH LIGHT SOURCE AND HEAD BAND (with rechargeable batteries -03)	Name of Equipment- Battery operated surgical head light (Head Light power operated-01 + Head light Battery Operated-01)
		Both the main and the satellite domes should be shadow less and have the single IRC halogen bulb with automatic changeover standby bulb.	Cool, bright LED light
			Simple, quiet and comfortable
		The luminance guarantee of the standby lamp should be 100%.	Greater Freedom
			<ul style="list-style-type: none"> Homogenous illumination across a broad range of surgical procedures
		The reflectors of the domes should be of poly spherical mono reflector type and should incorporate a central reflector which can be switched on and off when needed.	<ul style="list-style-type: none"> Cool LED light eliminates concerns over heat generation
			<ul style="list-style-type: none"> Vibrant color rendition maximizes visualization of critical anatomy
		The light head diameter of the both the main dome and satellite dome should be 65 cm.	<ul style="list-style-type: none"> 25,000+ hour lamp life limits uncertainty over system brightness and cost of ownership
			<ul style="list-style-type: none"> Simple 2-point adjustment enables comfortable fit for all heads of all sizes
		The maximum illuminance at a distance of 1 meter should be 130000 lux and that of the satellite dome should be 85000 lux with a guaranteed constant color temperature.	<ul style="list-style-type: none"> Unique negative-flow cooling system is whisper-quiet
			<ul style="list-style-type: none"> Easy to reach 4-position intensity switch is mounted on the headband
		The lights should be cool enough for the total protection of tissue desiccation.	<ul style="list-style-type: none"> Light weight 20' power cord increases freedom from clutter of floor stands and fiber optic cables
			<ul style="list-style-type: none"> Light weight battery power allows untethered movement from side to side of the operating table and from OR to OR
		The life of each halogen bulb should be within 600-1000 operating hours.	Extra set of battery for uninterrupted work
			Portable head light with light source-

		The color of the lights should be safe enough for the proper identification of tissue changes.	Increased Lamp Warranty - 1000 hours • True warranty, not pro-rated • Better cooling leads to longer lamp life • Membrane Touchpad Controls • Precise light attenuation in 5% increments • Lamp and System Age meters Stand-by Switch • System starts up in Stand-by Mode • Allows electronic self-check • Put unit into Stand-by to block light when removing the cable • Starts up at the same light output setting
			UltraLite® Pro Headlight-
		The technology should be incorporated so that the lights can be focused exactly on the needed tissue region with improved depth and high-contrast illumination.	Maximum Comfort Maximum Headlight Performance: Premium Headlight Cable: • Occipital Basket • Balances and distributes the weight of the headlight and reduces neck strain • Cranial Support - Stabilizes the headlight • Adjustable Headband- Provides perfect sizing without temporal compression • Superior optics • Optimized light output • Enhanced Design • New lighter design • 3-Point Support System for comfortable stability • Extended linkage for better vertical alignment with surgical loupes • Lightweight and flexible 3mm cable • Bifurcated design allows even weight distribution and balance • Translucent outer sheath provides visualization of fiber integrity • Lifetime Warranty Against Browning.
		All the adjustments viz. adjustments of the light field diameter and the normal operations can be controlled through the sterilizable handles of the lights.	
		The modular digital camera with 360 degree focus and minimum 300x zoom facilities to be incorporated inside the sterilizable handle and the TFT monitor to be installed on a separate arm for proper viewing of the surgical team, which optionally can be wired with the LAN system.	
		The options for backlight should be incorporated for a reduced illumination during endoscopic procedures.	
			State of the Art Quality
			Description • The flat beam illumination and custom optics provide superb focus across the entire depth of the visual field • Super light weight camera adds less than one ounce
	ABG MACHINE (1 at OT+1 at SICU)	Specifications for Automated Blood Gas Analyzer (With Cost Per Test Basis) :~	No Change
		The analyzer should be able to measure blood gas (Ph, Po2,	No Change
		Pco2) electrolytes (Na+, K+,	No Change
		Ca++ / Cl-) and Glucose, Lactate, with 17 calculated	No Change
		parameters.	No Change
		Sampling by automated probe aspiration.	No Change
		The instrument should be operated with cartridge / cassettes.	No Change
		The cartridge / cassettes should have multi test variable pack	No Change
		sizes from 100 to 600 tests.	No Change
			Additional Haemoglobin assessment
		Analyzer should have onboard help system via multimedia tutorials.	No Change
		Analyzer should have automated entry and logging of	No Change
		consumables.	No Change
			No Change

Analyzer should have a start-up time should be 30 minutes.	No Change
Analyzer should have large color touch screen facility	No Change
optional for keyboard operation.	No Change
Analyzer should not use any Gas Bottle / Tanks / Cylinders	No Change
for calibration.	No Change
Analyzer should have an inbuilt printer and minimum	No Change
inbuilt memory of 100 samples.	No Change
Analyzer should have data back-up with read / write CD	No Change
Drive / USB ports.	No Change
Analyzer should be able to measure all parameters with	No Change
maximum sample volume of 150	No Change
micro L.	No Change
Analyzer should have the cycle time of ≤ 100 sec.	No Change
Analyzer should have integrated barcode reader to support	No Change
sample identification.	No Change
Analyzer should have correlation correction software.	No Change
The analyzer should perform samples like whole blood,	No Change
other fluids and hemodiluted	No Change
samples.	No Change
Analyzer should have automatic on-board / internal QC	No Change
for maintenance free operations and in view to obtain	No Change
qualitative result.	No Change
Analyzer should have unlimited user ID and access level	No Change
verification.	No Change
Analyzer should have automatic lock-out of parameters that	No Change
fails QC or option to inactivate individual sensors for	No Change
failed calibration.	No Change
Analyzer should have QC statistics.	No Change
Should have FDA certificate for in vitro diagnosis	No Change
application.	No Change
Cartridges / Cassettes supplied should have minimum 3 – 6 months shelf life.	Cartridges supplied should have minimum 3 – 6 months shelf life.
The tenderer shall replace the unutilized	No Change
balance cassettes / cartridges when there is expiry, on request.	No Change
Analyzer should have product safety compliance to UL	No Change
listed under UL-544 / TUV Listed / Complies with	No Change
IEC 61010 – 1 / European CE / US FDA.	No Change
The Cost Per Test / Sample should be taken into consideration for 300 Samples / month & 600	No Change
Samples for the period of ten years for the purpose of evaluation including all the cassettes,	No Change
cartridges, printer papers etc.	No Change
	No Change
Monthly two times running of external / third party control	No Change
(High, Low & Normal) is to be included in the test per cost & should submit a copy of the	No Change
report along with the invoice.	No Change
All consumables i.e. cartridges, cassettes, printer papers etc.	No Change
includes in the cost / test and the cost for different test loads should be quoted separately as details below :	No Change
a. 300 – 500 Tests Per Month.	No Change
b. 501 – 1000 Tests Per Month.	No Change
Example :-If for 300 test it requires "X" Nos. Cassettes,	No Change
"Y" Nos. Cartridges & "Z" Nos.	No Change
Printer Papers, the cost per test = $C = \{(Prices\ of\ all\ units\ X + Y + Z) / 300\}$. Then later on institute can process the order for 300 tests / month as	No Change
"300 x C" or 600 tests / month as "600 x C". This cost includes	No Change

		each & every consumables that required for 300 or 600 tests	No Change
		/ month.	No Change
		Proper calibration certificates shall be provided after	No Change
		installation, preventive maintenance & major repairs	No Change
		during comprehensive warranty & CAMC period.	No Change
		A copy duly signed by the concerned dept. HOD of the	No Change
		number of test done report should be submitted along with	No Change
		the invoice.	No Change
		For the purpose of price evaluation of tender, cost of system with ;	No Change
		1. 500 Test Per Month for 10 Years.	No Change
		2. 1000 Test Per Month for 10 Years.	No Change
		for each case / category and with 5 years warranty and t	No Change
		hereafter 5 years CMC shall be taken for the purpose of	No Change
		price evaluation.	No Change
		•	No Change
	SURGICAL LOUPES	1. Magnification Approx : 2.5 – 4.0 X.	customised type -02
		2. Adjustable or customized as per your requirement.	Adjustable -02 ,Adjustable should be flip up variety
		3. Optics should have superior resolution, field size and image brightness.	No Change
			Facility for attaching light source
		4. Configurations : TTL; Flip-up.	No Change
		5. Field width & depth : 8 – 15 cm.	No Change
		6. Weight: 60 – 90 grams.	No Change
		7. Working distance: Customized between 25 – 60 cm.	No Change
		8. Waterproof, Hypo allergenic, Corrosion resistant.	No Change
		9. Unique adjustable nose pad.	No Change
		10. Lightweight, Unparalleled in strength.	No Change
		11. Carrying case with engraving doctor's name on the box & temple.	No Change
		12. It should be European CE and US FDA approved.	No Change
			Consumable prices to be provided
			Start up-500 patient cases to provided
	STERNAL SAW	Electrically operated motor control unit with forward and reverse speed motor.	Battery operated (with ETO sterilisable battery) motor control unit with forward and reverse speed motor.
		Power cable with motor working with the power supply 220-240 VAC 50Hz	Battery operated with ETO sterilisable battery
		Should contain a foot control paddles with waterproof and anaesthetic agent proof. 130x200x60 mm	Deliberate, substantive changes handpieces improved ergonomics, and give you a better wrist position and firmer grip
		Sternal saw with primary and redo (Oscillating) blades, Light weight with blade protector, saw cable connector for both blades Overheating cut off of motor with reset facility.	High-capacity cells deliver improved performance to get you through the toughest cases.
		Additional blades 10each of normal and redo (Oscillating)	Plus, large batteries now last more than 2 times longer over the course of their total lifespan without needing replacement.
		Saw should be in all respects complete and ready to use	Quick and efficient locking keyless chuck engineered to prevent loosening, with the addition of a secondary locking mechanism.
		Flexible cable with minimum 180 cm in length.	handpieces are built to be actively washed – able to be temporarily submerged when you need to do so during cleaning, prior to sterilisation
		• Should provide minimum 1 Nos. of sterile micro oil 300 ml	batteries can live on the shelf for 30 days without compromising performance.
			Plus, insulation within each battery for increased resistance to thermal damage during extended exposure to high temperatures.
	ACT MACHINE (AUTOMATED COAGULATION TIMER)	• ACT machine having at least two test well	No Change
		• 2 point clot detection facility to get accurate results (Optional).	No Change

		<ul style="list-style-type: none"> Parameters- ACT (Mandatory) APTT & PT (Optional). 	No Change
		<ul style="list-style-type: none"> Shall use fresh blood at the bedside. 	No Change
		<ul style="list-style-type: none"> Shall require less than 3 cc of blood per sample 	No Change
		<ul style="list-style-type: none"> Digital Display on Screen of any size. 	No Change
		<ul style="list-style-type: none"> Should work on 180-270 V AC as well as batteries. Mains adaptor to be supplied. 	No Change
	HEART LUNG MACHINE with Heater cooler system	Technical specifications of Heart Lung Machine	No Change
		A. 5-Pump console	No Change
		1. The unit should have 5 pump console compactly arranged with separate power supply and control module should have easy access connectors for interchanging the pump.	The unit should have 3 single & 1 twin pump, which should show accurate measurements & should be usable for paediatric & neonatal surgery. The design of pump must be horse shoe rac way design & have a direct drive system which should be maintenance free . Ech unit should work on its own.
		3. The unit should be supplied with a battery backup for all five pumps, all safety system and accessories for a minimum 60 minutes. Switch over from main power to battery backup should be automatic and immediate. The battery built in to the pump base and it should be recharged automatically when the system is operating with main power supply.	3. The unit should be supplied with a battery backup for all five pumps, all safety system and accessories for a minimum 90 minutes. Switch over from main power to battery backup should be automatic and immediate. The battery built in to the pump base and it should be recharged automatically when the system is operating with main power supply.
		4. Individual pump head should have Harvey roller pump with the facility for tubing to be used, adjustable & easily changeable mechanism.	No Change
		5. At least one pump should be able to deliver pulsatile flow.	All pumps should have pulsatile mode in build.
		6. Individual pump heads should have digital display of the flow rete in LPM and in RPM.	No Change
		7. Each pump should have easy mechanism for occlusion setting for different thickness of tubes available in the market	Each head should be controlled individually & rotatable in different direction with master - slave control. Occlusion accuracy should be 0.015 mm & should have thumb wheel locking mechanism.
		8. Should have unidirectional hand crank facility as a critical safety feature. Hand crank loading should be from top for faster access.	No Change
		9. The console should have compact base mount for the entire pump heads together, with poles and handles.	No Change
		10. Should have variable, changeable tubing holders in each pump head	No Change
		11. Should have three (3) vertical masts and one (1) horizontal mast with necessary I.V. Hooks.	No Change
		12. Roller pump should have a self-diagnostic circuit with provision to detect and display critical alarm conditions.	No Change
		13. Should have a monitor mount with adjustable monitoring arm.	No Change
		14. Instrument tray position able with long monitoring arm.	No Change
		15. Light weight surface table; writing surface.	No Change
		B. Monitors:	
		1. Pressure monitor: Facility to monitor one arterial line pressure and one cardioplegia line pressure (total 2) along with necessary pressure transducers, cable and domes (reusable), with accurate digital display and alarm facilities audio and visual.	No Change
		2. Time Monitor: facility for 4 times displays 2 for arterial and 2 for cardioplegia delivery. With stop, reset and start function.	No Change
		3. Temperature Monitor: 4 to 6 temperature displays for patient monitoring and for cardioplegia monitoring with digital display in Celsius with necessary compatible temperature 6 probes and 6 additional probes (6X2=12 probes) with (3X2=6) of them for nasal, rectal and oesophageal use.	No Change
		C. Air – oxygen blender	No Change
		To work at 50 -60 PSI for membrane oxygenator with water trap attached with necessary houses and	No Change
		Connections of minimum of 5meters length and with triple flow glass flow meters.	No Change
		D. Safety devices	No Change

i. Safety monitor should have capability for computer interface to retrieve perfusion data	No Change
ii. Ultra Air sensor: Ultra sonic air sensor to detect bubbles to work equally well with crystalloid and blood should be possible to fit anywhere in the circuit easily.	No Change
iii. Level Sensor system: Ultrasonic transducers to work well crystalloid and blood with adhesive pads, with alarm settings.	No Change
E. Accessories,	No Change
1. LED lamp with flexible arm.	No Change
2. Stainless steel line clamps for cardio pulmonary by pass 12 nos.	No Change
3. Instrument tray with mounting arm.	No Change
4. Thermal blanket for adult & Paediatric patients.	No Change
5. On- line measurement of PH, PCO2 & Hb for neonatal cardiac surgery.	No Change
F. System configuration accessories, spares and consumables.	No Change
i. Machine cover.	No Change
ii. System should be provided with appropriate furniture like adjustable revolving chair for the per fusionist to operate the system.	No Change
iii. The system should contain all the above accessories in integrated or as separate accessories.	No Change
G. Environmental Factors.	No Change
i. The unit shall be capable of being operating continuously in ambient. Temperature of 05-5 deg.C and relative humidity of 15-90%.	No Change
ii. The unit shall be capable of being stored continuously in ambient. Temperature of 05-45 deg.C and relative humidity of 15-90%.	No Change
iii. Shall meet IEC -60601-1-2:2001 (Or Equivalent BIS) General Requirement of safety for Electromagnetic compatibility.	No Change
	No Change
H. Power supply	No Change
i. Equipment shall operate on 220V-240V, 50 Hz, single phase electric supply.	No Change
ii. The mains supply voltage variation may be 180-270V and frequency variation max. 3 %. The necessary protective like Servo controlled stabilizer /CVT/UPS shall be there with the machine	No Change
iii. On line UPS of suitable rating with voltage regulation and spike protection for 60 minutes backup	No Change
	No Change
I. Standards, safety and training:	No Change
i. Should by US FDA or CE approve product.	No Change
ii. Electrical safety conforms to standards for electrical safety IEC-60601/IS-13450.	No Change
iii. One engineer should be posted to impat training for at least 15 days.	No Change
iv. Manufacturer should have ISO certification for quality standards.	No Change
	No Change
J. Documentation:	No Change
i. User manual in English.	No Change
ii. Service manual in English.	No Change
	No Change
iii. List of important spare parts and accessories with their part number and costing available in stock with the supplier.	No Change
iv. Certificate of calibration and inspection from factory.	No Change
v. Log book with instruction for daily, weekly, Monthly and quarterly maintenance checklist.	No Change
vi. The job description of the hospital technician and company service engineer should be clearly spelt out.	No Change
viii. List of Equipment available for providing calibration and routine preventive Maintenance support as per manufacturer documentation in service/ technical Manual.	No Change
	No Change
Technical specification of Heater Cooler Pump Assembly	No Change
1. Temperature Control Module	No Change
Temperature control & monitor system with cardioplegia supply and remote temperature display with the following features.	No Change
(i) Simultaneous delivery of water for arterial and cardioplegia heat exchangers and to thermal blankets to be available from suitable ports.	No Change
(ii) Pressure regulated blanket ports maintaining the temperature of the arterial port	No Change

		(III) Temperature display range of 0-50°Celsius remote accuracy of 0.3°Celsius and remote temperature display unit module with 3 temperature display.	No Change
		(IV) Microprocessor based unit to control cool, rewarm and maintain temperature.	No Change
		(V) Water outlet temperature of heat exchanger and blanket range 0 - 42°C.	No Change
		(vi) Maximum flow performance of oxygenator heat exchanger supplies port 15-22 LPM for fast cooling; 480 mm Hg maximum pressure; Blanket 1.5 to 2.5 LPM at zero rate.	No Change
		(VII) Built in ice Maker to provide 50 lbs of ice in about 4 to 8 hours from 25°C.	No Change
		(VIII) Should be capable of providing ice water for cardioplegia independently with variable cooling rate.	No Change
		(IX) Rewarming facility with venous difference mode settable at 6 to 10°C gradients to hold the water bath temperature at higher than the venous blood temperature.	No Change
		(x) Temperature probe module for the operating ranges of 0 - 50°C.	No Change
		(xii) Temperature probes to fit in standard oxygenators.	No Change
		(xiii) Adult Blankets three(03) numbers and paediatric Blankets one(01) numbers.	No Change
		2. Power supply	No Change
		i. Equipment shall operate on 220V-240V, 50 Hz, single phase electric supply.	No Change
		ii. The mains supply voltage variation may be 180-270V and frequency variation max. 3 %. The necessary protective like Servo controlled stabilizer /CVT/UPS shall be there with the machines.	No Change
		3. Standards, safety and training:	No Change
		i. Should be US FDA / CE/ BIS approve product.	No Change
		ii. Electrical safety conforms to standards for electrical safety IEC-60601/IS-13450.	No Change
		iii. One engineer should be posted to impart training for at least 15 days.	No Change
		iv. Manufacturer should have ISO certification for quality standards.	No Change
			No Change
			No Change
		4. Documentation:	No Change
		i. User manual in English.	No Change
		ii. Service manual in English.	No Change
		iii. List of important spare parts and accessories with their part number and costing available in stock with the supplier.	No Change
		iv. Certificate of calibration and inspection from factory.	No Change
		v. Log book with instruction for daily, weekly, Monthly and quarterly maintenance checklist.	No Change
		vi. The job description of the hospital technician and company service engineer should be clearly spelt out.	No Change
		viii. List of Equipment available for providing calibration and routine preventive Maintenance support as per manufacturer documentation in service/ technical Manual.	No Change
		•	
	TRANSPORT INCUBATOR(PAED)	• Nominal length -95.9 cm (37.75")	After Amendment specification of TRANSPORT INCUBATOR(PAED)
		• Nominal width-52.7cm (20.75")	1. It should have Visual and audible alarms for: (i) Patient and air high/low temperature alarm. (ii) Air circulation / probe / system / power failure alarm.
		• Nominal height -61 cm(24.00")-max,30.5 CM(12.00")-MIN	2. It should have Battery and AC supported.
		• External power requirement-110v/120vac,50/60/400 hz,270 w maximum sine or square wave,220/240 v ac50/60/400 hz ,270 w maximum sine or square wave,	3. Built-in-sealed rechargeable batteries capable of working for at least 3 hrs when fully charged.
		11v dc 13 v dc,200 w max	4. Internal noise level 60 dB.
		26 v dc to 30 v dc,200 w max	5. Mode of operation should be properly displayed.

		<ul style="list-style-type: none"> Internal battery type-lead acid,vented,rechargeable 	6. Indicator light should be provided for its ready to be in normal use.
		<ul style="list-style-type: none"> Internal battery VOLTAGE-12 V DC NOMINAL 	7. Infants straps should be provided to restrict the baby movement.
		<ul style="list-style-type: none"> Internal battery quantity-1(2 optional) 	8. skin temperature probe should be small in size not more than 10mm diameter and 4mm in height to fix the probe firmly on the infant. Baby contact material should be biocompatible.
		<ul style="list-style-type: none"> Internal battery capacity-24 amps hours per battery 	9. Infant bed should be drawable. Mattress foam density should be minimum 25kg./cm ³ and infant bed mattress cover should be biocompatible material. Baby Mattress should be at least 60X30cm.
		<ul style="list-style-type: none"> Internal battery charge time-10 hrs per battery 	10. Examination light should be provided for inspection.
		<ul style="list-style-type: none"> Internal battery life expectancy-200 complete chare / dischargeable cycle 	11. Warmup time 30-40 minutes and shall not differ by more than 20%.
		<ul style="list-style-type: none"> Chassis leakage current-300*10⁻⁶ A or less(110v/120vac) 	12. Shall be equipped with a thermal cut-out. It shall be so arranged that the heater is disconnected and an audible and visual warning is given at an incubator temperature which does not exceed 40° C.
		<ul style="list-style-type: none"> 500*10⁻⁶ A or less(220v/240vac) 	13. Patient skin temperature range: 35°C to 37.5 ° C. Temperature accuracy less than ± 0.2°C.
		<ul style="list-style-type: none"> Operating temperature-maintains a differential of up to25 degree Celsius between the ambient temp and set point for 90 minute per battery 	14. Air temperature range: 30 °C to 39°C. Temperature accuracy less than ± 0.2°C.
		<ul style="list-style-type: none"> Storage temperature—40 degree Celsius to +70 degree Celsius ambient 	15. Display is to be backlit and allows easy viewing in all ambient light levels.
		<ul style="list-style-type: none"> Noise level with in the hood -less than 60dBa with ambient levels to <= 50 dBa 	16. Should have Oxygen port with tubing, also mount for oxygen cylinder of 5 litre size.
			17. Should have Accommodates shelves, suction unit and I/V poles.
			18. Should have collapsible trolley with lockable castors.
			19. Two extra sets of all sensors.
			20. US FDA / European CE approved model should be offered.
			21. Power Supply 220VAC +/- 10 %, 50Hz fitted with Indian plug.
	HEMOTHERM MACHINE	<ul style="list-style-type: none"> Dimensions: 22" W x 22" D x 32" H (55.9cm x 55.9cm x 81.3cm) 	Deleted
		<ul style="list-style-type: none"> Weight: 198 lbs. (89.8kg) 	Deleted
		<ul style="list-style-type: none"> Water Cooling Temperature Range: 3°C – 32°C (37.4°F – 89.6°F) 	No Change
		<ul style="list-style-type: none"> Water Heating Temperature Range: 25°C – 42°C (77°F – 107.6°F) 	No Change
		<ul style="list-style-type: none"> Heater: 1750 Watts 	No Change
	High End Suction Machine	<ul style="list-style-type: none"> Should have maintenance free membrane pump 	No Change
		<ul style="list-style-type: none"> Should have regulated vacuum with maximum of: -98 kPa 	No Change
		<ul style="list-style-type: none"> Should have power consumption upto 100W 	No Change
		<ul style="list-style-type: none"> Should have voltage: 230V,50-60Hz 	No Change
		<ul style="list-style-type: none"> Should have operating time: continuous operation 	No Change
		<ul style="list-style-type: none"> Should have ambient condition during operation: 	No Change
		<ul style="list-style-type: none"> Temperature: 10 to 32 degree celcius 	No Change
		<ul style="list-style-type: none"> Humidity: 20 to 80% without condensation 	No Change
		<ul style="list-style-type: none"> Should have weight around 30-35 kg 	No Change
		<ul style="list-style-type: none"> Should have standard rail holder for mounting accessories 	No Change

		<ul style="list-style-type: none"> Should have provision for two numbers 3liter or 5 liter jars with changeover lever 	No Change
			Added- Should be US FDA approved model
	Video Laryngoscope with blades	Laryngoscope required with video illumination to visualize and document the operational area on screen. It should consist of following features :	No Change
		<ul style="list-style-type: none"> One miller size 0 & 1 blade should present in the set. 	No Change
		<ul style="list-style-type: none"> Screen size 7-10 inch for display with feature control buttons on the screen with HDMI output for connecting to a big screen. 	No Change
		<ul style="list-style-type: none"> It should be a chip based video laryngoscope and not a prism based device 	No Change
		<ul style="list-style-type: none"> Monitor should have a facility to connect flexible scope and video-laryngoscope blade 	No Change
		<ul style="list-style-type: none"> Automatic as well as manual white balance facility should be available. 	No Change
		<ul style="list-style-type: none"> Integrated video as well as still picture recording should be possible on data card and USB drive with JPEG and MPEG4 format which can be easily transferred to the computer/laptop. Monitor should have two ports for SD card and USB drive. Video and still picture can be retrieved on the screen. It should be an upgradable system 	No Change
		<ul style="list-style-type: none"> Safety bag for screen to be provided with the facility to operate monitor from the bag. 	No Change
		<ul style="list-style-type: none"> Unit should run on both a/c and battery with battery life more than 60 minutes 	No Change
		<ul style="list-style-type: none"> Movable stand should be provided to hang the screen 	No Change
		<ul style="list-style-type: none"> Accessories like protection cap, tray for cleaning and sterilization of blades (at least two blades at a time) should be provided 	No Change
		<ul style="list-style-type: none"> Sterrad and Steris should be permissible for disinfection of blades 	No Change
		<ul style="list-style-type: none"> Blades and connection cable should be fully immersible in disinfecting solution 	No Change
		<ul style="list-style-type: none"> Equipment should be European CE/ US FDA approved 	No Change
		<ul style="list-style-type: none"> All accessories/ equipment's should be of same manufacturer and USFDA/CE approved. 	No Change
		<ul style="list-style-type: none"> All equipment's should be reusable, can be autoclave/ ETO and chemical sterilized 	No Change
		<ul style="list-style-type: none"> Rate of consumable should be quoted separately and fix for minimum 3 years in Indian rupees. 	No Change
		<ul style="list-style-type: none"> One special blade for difficult intubation with device for introduction of suction catheter for size 16-18 Fr., angle of view should be approx. 80 degree. One special blade for pediatrics 	No Change
		<ul style="list-style-type: none"> Special shaped adult and pediatric Magill forceps for foreign body removal and for assisting nasal intubation should be provided. 	No Change
	Hand Disinfectant Dispenser System		Deleted
	Vigileo Monitor	1. Should display continuous non-invasively measure hemodynamic, and cardiac output variables.	No Change
		2. Should have the following parameters: Heart rate, Stroke volume, Cardiac output, Cardiac index, Index of contractility, variation of index of contractility, systolic time ratio, thoracic fluid index, stroke volume variation.	No Change
		3. Should be based on electrical velocimetry method.	No Change
		4. Same machine should be suitable for neonates, children, and adults.	No Change
		5. Should use only four electrodes.	No Change
		6. Should be able to detect proper electrode placement	No Change
		7. Should be able to indicate signal quality	No Change
		8. Should have fast optimization and minimal delay in measurement of beat-to-beat result.	No Change
		9. Hand held, or bedside machine.	No Change

		10. Digital interfaces support value link interface protocol should have internal data storage data export on to excel sheet.	No Change
		Should be US FDA and European CE approved.	No Change
	Flexible bronchoscope Adult and Paediatric with Camera	<ul style="list-style-type: none"> Flexible Intubation Endoscope with CMOS chip on tip for digitally transferring the image to the screen. There should be NO Optical Fibre bundles/non fibre optics. Intubation Endoscope should display Full Frame 4/3 or 16/9 Imaging and not the circular image. 	No Change
		<ul style="list-style-type: none"> For adult outer diameter of scope should be ranging 4.8- 5.5mm with working length of 65cm or more. Up and down tip deflection should be same ranging 120-160 degrees. Working channel should be 2.0 -2.3mm and it should take ETT from 5.5 sizes onwards. 	No Change
		<ul style="list-style-type: none"> For Pediatric outer diameter of scope should be ranging 3.0- 4.1 mm with working length of 65cm or more. Up and down tip deflection should be same ranging 120-160 degrees. Working channel should be 1.4 -1.6mm and it should take ETT from 3.5 sizes onwards. 	No Change
		<ul style="list-style-type: none"> Flexible Intubation scope should display good quality picture by connecting it with 7inch or more TFT monitor/integrated LED light source 	No Change
		<ul style="list-style-type: none"> TFT monitor/Screen should have feature control buttons on the screen with HDMI output for connecting to a big screen. 	No Change
		<ul style="list-style-type: none"> Automatic/ manual white balance facility should be available 	No Change
		<ul style="list-style-type: none"> Monitor should run on battery, when fully charged should work for more than 60 minutes 	No Change
		<ul style="list-style-type: none"> Monitor should be upgradable 	No Change
		<ul style="list-style-type: none"> Documentation of Video & still images should be possible with operating buttons on the scope to be recorded on SD card and USB pen drive present in the monitor 	No Change
		<ul style="list-style-type: none"> It should be light weight, high resolution & potable flexible scope 	No Change
		<ul style="list-style-type: none"> Airway Guide (cum Bite block) for Oral intubation should be provided with the set. 	No Change
		<ul style="list-style-type: none"> ET TUBE HOLDER has to be a part standard accessory and 5 piece should be provided 	No Change
		<ul style="list-style-type: none"> Set should include- Suction Adaptors (Disposable), Cleaning brush & Leakage tester as standard accessories 	No Change
		<ul style="list-style-type: none"> Container for sterilization and storage of scope should be provided 	No Change
		<ul style="list-style-type: none"> One imported Trolley to hang Scope as well monitor should be provided 	No Change
		<ul style="list-style-type: none"> Ten reusable suction caps to be also provided 	No Change
		<ul style="list-style-type: none"> Equipment should be European CE-/US FDA approved 	<ul style="list-style-type: none"> Equipment should be US FDA/European CE-(notified-body)approved
		<ul style="list-style-type: none"> Suitable for following applications- 	No Change
		- Bronchoscopy	No Change
		- Foreign body removal.	No Change
		- Bronchial Lavage	No Change
		- Inspection of The Airways	No Change
		- Dilatation Tracheotomy	No Change
		- biopsy forceps, grasping forceps should be provided with alligator jaw	No Change
		- trolley from same manufacturer	No Change
		- USFDA & CE European approved	No Change
		Rate of consumable should be quoted separately & fix for minimum 3years in Indian rupees	No Change
		Note: All equipment's /accessories should be reusable /Autoclavable/ chemical sterilization	No Change
	Advanced Airway and Clearing system		Deleted
	Endoscopic Thoracic Surgery Instruments	CASTROVIEJO NEEDLE HOLDER:	No Change
		Length 180 mm / 7", 1.2 mm x 11 mm straight tip for suture 5-0 and smaller – 2	No Change
		b) Length 180mm / 7", 0.4 mm x 11 mm straight jaw for suture 8-0 and smaller -1	No Change
		c) Length 180mm / 7", 0.8 mm x 11 mm straight jaw for suture 6-0 and smaller -2	No Change
		d) Length 180mm / 7", 0.6 mm x 11 mm straight jaw for suture 7-0 and smaller -1	No Change
		e) Length 210mm / 8 1/4", 0.4 mm x 11 mm straight jaw for suture 8-0 and smaller -1	No Change
		d) Length 210mm / 8 1/4", 0.6 mm x 11 mm straight jaw for suture 7-0 and smaller -1	No Change

		RYDER NEEDLE HOLDER Intra Cardiac stainless steel TUNGSTEN CARBIDE / DIAMOND DUST, Ring Handle.:	No Change
		Length 21 cm / 8", Round Tip 1.9 mm jaw – 2	No Change
		MINI RYDER with round jaw of 1.4 mm, with Titanium tip:	No Change
		Length 15 cm / 6" – 2 nos.	No Change
		BOZEMANN FINNOCHIETTO Needle Holder with TC inserts gentle smooth curve at the shaft and curve at the box joint:	No Change
		Length 24 cm -1	No Change
		Length 30cm -1	No Change
		CRILE – WOOD Needle Holder with box joint:	No Change
		Length 15 cm / 6" – 3Nos.	No Change
		MAYO HAGGER Needle Holder	No Change
		Length 20 cm / 8" – 3 Nos.	No Change
		HEAVY BARRY WIRE TWISTER with TC inserts:	No Change
		Length 20 cm -2 no.	No Change
		Length 17cm -2 no.	No Change
		RUBIO MINI WIRE TWISTER with TC inserts:	No Change
		Length 13 cm / 5" – 1	No Change
		Sternal Wire Cutter Pliers:	No Change
		Length 21 cm – 1	No Change
		Length 17.5cm – 2	No Change
		RING TIP TITANIUM MICRO TISSUE FORCEP, Sapphire / Enhanced needle grip Surface, round handle ring smooth.:	No Change
		Length 180mm / 7" – 0.5 x 1 mm – 1 No.	No Change
		Length 180mm / 7" – 0.5 x 1 -1.3 x 2 mm – 1 No.	No Change
		Length 210mm - 0.5 x 1 mm – 1No.	No Change
		DEBAKEY – GERALD – Atraumatic Tissue Forceps Titanium (2 each):	No Change
		Length 15 cm / 6" jaw 1.5 mm	No Change
		Length 18 cm / 7" jaw 1.5 mm	No Change
		Length 24cm jaw 1.5mm	No Change
Anaesthesia Work Station		A. Basic Unit:	No Change
		1. General description:-	No Change
		The unit should be a cost-effective, flexible anaesthesia workstation for performing and monitoring inhalation anaesthesia, suitable for Adult as well Child up to neonatal age.	No Change
		It should be capable of providing low-flow techniques to	No Change
		minimize gas and anaesthetic agent consumption for economical day-to-day operation	No Change
		2. Integrated systems:-	No Change
		The Anaesthesia Workstation should have :	No Change
		a. In-built Ventilator with Coloured TFT display.	No Change
		b. Integrated CO2Absorber.	No Change
		c. In - built & Integrated Anaesthesia Gas Monitoring Facility	No Change
		d. Multi parameter monitor	No Change
		All these components should be of the same manufacturer or	No Change
		brand with their label on	No Change
		each component. Both anaesthesia delivery system & multipara	No Change
		monitor must be US FDA approved & European CE Marked (Should be from notified body).	No Change
		3. Gas supply:-	No Change
		The unit should be able to connect to Central pipeline & there	No Change
		should be provision of One PIN Index Yoke to connect to	No Change
		One Emergency Gas Cylinder of O2& N2O each.	No Change
		4. Trolley:-	No Change
		The unit should have Powder Coated Steel Trolley with 4 Wheels	No Change
		& 1 or more Drawers & the front wheels should have locking	No Change
		device.	No Change

The unit should have mounting facility to mount other equipments.	No Change
5. Flow meters:-	No Change
Machine should provide electronic gas mixing with digital control for O2, N2O and Air.	No Change
6. Hypoxia guard:-	No Change
It should have proven hypoxia guard design using the Pin-valve Mechanism or equivalent mechanism. The unit should equipped with Integrated Ratio System to maintain 25 Vol% O2 in Fresh Gas & on accidental opening of only N2O flow with O2 valve closed, the Ratio system should automatically Open O2 Valve to maintain 25 Vol% O2in Fresh Gas.	No Change
7. Water & Particle Trap:-	No Change
The unit should have Water & Particle trap to the inlet Central Gas Pipe-line connections of O2, N2O &AIR.	No Change
8. Patient Module:-	No Change
It should have fully autoclavable patient module having anodized metallic casing.	No Change
It should have 34°C Heated Patient Module to deliver Warm Fresh Gas to Patient & to prevent condensation.	No Change
The Patient Module should have Pressure Graduated Metallic APL Valve, Inspiratory Valve, Expiratory Valve, a Controlled Room Air Valve & Active Gas Scavenging Port.	No Change
9. CO2 absorber:-	No Change
Patient Module should be integrated to the CO2absorber of 1.4 Kg & CO2 absorber should be Single / Double chamber design having screw type threading for easy removal & re-fitting during the operation.	No Change
10. O2 Flush:-	No Change
The unit should have O2Flush facility to give approximately 50 Ltr / min flow.	No Change
11. Common gas outlet:-	No Change
The unit should have Common Gas Outlet for using open circuit & the unit should have easy change over from open circuit to closed circuit or vice-versa.	No Change
12. Vaporizers:-	No Change
It should have provision to connect Two Selectatec mount vaporizers & the unit should be provided with Two vaporizers equivalent to TEC-7 type, One of Isoflurane & One of Sevoflurane.	No Change
B. Inbuilt Anesthesia Ventilator:	No Change
1. Ventilator:-	No Change
It should have Integrated Microprocessor Controlled & Pneumatically Driven Ventilator with bellows and the same bellows should be useful for Pediatric& Adult Application, thus avoiding change of bellows.	No Change
2. Modes:-	No Change
It should offer Ventilation Modes such as Manual, Spontaneous, CMV Adult & CMV Child & PCV Adult & PCV Child , SIMV & PSV.	No Change
3. I:E ratio:-	No Change

The unit should offer I/E Ratios : 1:1, 1:1.5, 1:2, 1:2.5,1:3, 1:4,	No Change
1:5 with I/E Inverse Ratios:	No Change
2:1, 3:1 & 4:1 (PCV); PEEP: 0-15mbar ± 2mbar, Tidal Volume:	No Change
20- 1400 ml.	No Change
4. Display:-	No Change
It should have a high contrast color TFT Display.	No Change
5. Self test:-	No Change
It should be equipped with self test routines and automatic calibration of all sensors	No Change
6. Display:-	No Change
Display should indicate measured values: O2 (Paramagnetic),	No Change
real time capnograph, Anesthetic agents (HALOTHENE/ ISOFLURANE/ SEVOFLURANE /ENFLURANE/ DESFLURANE), Tidal Volume, Minute Volume, Frequency, PEEP, Mean pressure-in graphic form with numerical display.	No Change
7. Gas Monitoring:-	No Change
The In - built Anesthesia Gas Monitoring Facility should based	No Change
on side-stream technology, using Infra Red Photometry	No Change
Principle & also offer Automatic Anesthetic Agent Identification.	No Change
The unit should offer In-built Anesthesia Gas Monitoring with	No Change
following specifications:	No Change
CO2 Et. & In: Display: 0 - 10%, 0-76 mmHg	No Change
Accuracy: +/-0.5 Vol% or +/-12% rel.	No Change
Reaction time: <500 ms 150 ml/min	No Change
N2O In & Et.: Display: 0-100	No Change
Accuracy: +/-2 Vol% Or +8% rel.	No Change
Reaction time: <500 ms 150 ml/min	No Change
O2 (Paramagnetic) In & Et.: Display: 0-100%	No Change
Accuracy: +/-0.1%	No Change
Reaction time: <500 ms150ml/min	No Change
Anesthetic agent:	No Change
Halothane, Isoflurane : Display: 0 - 8.5Vol%	No Change
Enflurane, Sevoflurane : Display: 0-10 Vol%	No Change
Desflurane : Display:0 - 22%	No Change
Accuracy : 0-1.15% or +15% rel.	No Change
8. MAC:-	No Change
It should have a display of MAC (Minimum Alveolar	No Change
Concentration).	No Change
9. Alarms:-	No Change
It should have clear alarms and user information as text messages.	No Change
It is essential that unit should prompt user for corrective action	No Change
rather than giving only alarm with no diagnostic message.	No Change
10. Test:-	No Change
The unit should perform the Leak Test & Sensor Test on Start of	No Change
the unit to know the leak volume or dead space volume of	No Change
tubings etc. & thus deliver exact Tidal Volume to the Patient.	No Change
11. Fresh Gas De-coupling:-	No Change
The unit should have Fresh Gas De-coupling or equivalent	No Change
mechanism.	No Change
12. International Standards:-	No Change
The unit should comply with International Standards & should have CE Marking, DIN EN ISO 9001: 2000	US FDA approved model,if not aviliable then European (should be from notified body)
Certification & EN ISO 13485: 2003 Quality Systems- should have European CE Marking (should be from notified body) and US FDA approved	
C. Specifications for Multi Parameter Patient Monitor	No Change
1. Parameters:-	No Change
Should be capable of Monitoring Heart Rate, SPO2, NIBP, ECG,	No Change
Temp, RR and IBP2 (Upgradable to 4), NMT, BIS/ ENTROPY	No Change
2. Display:-	No Change
Should have a Display of 15 inch and above diagonal colour TFT display.	No Change

	Added sl .No. 2.1 Slave monitor,not less than 24 inches to be fixed
3. Operating system:-	
Should operate through Rotary knob & Membrane keyboard.	No Change
4. Fields:-	
Should have 8 waveform fields.	No Change
5. ECG:-	
Should have provisions to connect 3 or 5 Lead ECG cables	Should have provisions to connect at least 5 Lead ECG cables
6. NIBP:-	
Should have NIBP measurement by Osillometric method.	No Change
- Should have Manual / Automatic modes of measurement.	No Change
- Should have a measurement range of 20 to 250 mm Hg.	No Change
7. Invasive BP:-	
- Should have 2 channel Invasive Blood pressure (IBP) measurement.	No Change
- Should have waveform IBP1 and IBP2.	No Change
	All cuff size for BP measurement i.e. adult/ paediatrics / neonatal, each 02 no
8. Temperature:-	
Should have provision for Two temperatures with display of T1 and T2.	Should have provision for Two temperatures with display of T1 and T2,each-02 probes
9. Respiration:-	
Should have Respiration by Impedance method.	No Change
10. SPO2:-	
It must use Nellcor / Masimo technology to measure oxygen saturation for accuracy during motion artifacts, low perfusion states like shock, bradycardia and hypothermia.	No Change
Should have SPO2 measurement with plethysmograph, digital value& perfusion index and SPO2 values with range 50% to 100%.	No Change
11. Alarm facility:-	No Change
Should have Alarm facility for HR limits, Arrythmia, ST Segment Limit, and all other parameter limits.	No Change
12. Graphs & Trends:-	No Change
Should have 24 hr of Graphical and Tabular Trend for NIBP, HR, SPO2, RR, IBP, IBP2, T1, T2, AWR, ST. Segment and CSI %.	No Change
13. NMT Monitoring:-	No Change
Integrated Neuromuscular Transmission Monitoring in the primary monitor with all accessories. Display should be in the primary monitor	No Change
14. BIS/ Entropy:-	No Change
Depth of Anaesthesia Monitoring module – BIS / Entropy with BIS / Entropy of all accessories & sensors	No Change
Should include inbuilt Anaesthesia record keeping software	No Change
facility in monitor to document anaesthesia event using standardized menu based entries	No Change
Facility to store snapshots during critical events for wave form review at a later stage.	No Change
Audio visual and graded alarming system.	No Change
It should provide slave display of 15 inches and above with cable.	No Change
15. System Configuration Accessories, spares and consumables:-	No Change
Should be supplied with the following Standard Accessories.	No Change
3 Lead ECG cable with cords- 02nos. & 5 Lead ECG cable with cords – 02 nos.	No Change
SPO2 finger probe for Adult and Paediatric application. -2 each along with 2 connecting cable.	No Change
SpO2 Neonatal Probe.-2	No Change
NIBP cuff for conventional Adult, extra large for adult and for Paediatric application – 2 each.	No Change
IBP Reusable Transducers with cable –2 each.	No Change
Disposable IBP pressure transducers - 50	No Change
2 Temperature Probes	No Change
Depth of AnaesthesiaSensors-50	No Change
Accessories for neuromuscular transmission monitor-01 set	No Change
Disposable domes - 50	No Change
Disposable Adult & Paediatric circuits - 50 each.	No Change

		HME filters – 50	No Change
		16. Standards, Safety & Training:-	No Change
		Should be US FDA and European CE approved (Should be from Notified body) product	No Change
		Shall meet the safety requirements as per IEC 60601-2-27:	No Change
		1994 - Medical electrical equipment—Part 2:	No Change
		Particular requirements for the safety of electrocardiographic monitoring equipment.	No Change
		Manufacturer / Supplier should have ISO certification for quality standards.	No Change
		Should have local service facility .The service provider should have the necessary equipments recommended by the manufacturer to carry out preventive maintenance test as per guidelines provided in the service / maintenance manual	No Change
		Back to back warranty to be taken by the supplier from the principal to supply spares for a minimum period of 10 years	No Change
			Added- EtCo2 facility having module as well as consumable for atleast 50 no of patient cases
	High End Multi Para Monitor		Deleted
	Advanced Patient Trolley with transport ventilator plus monitor	Gas spring assisted backrest.	No Change
		Dual side hi-lo foot pedals.	No Change
		Dual height push / pull pedals.	No Change
		Two way foot operated tile adjustment from any height.	No Change
		Fifth wheel steering system.	No Change
		Integral folding IV drip rod.	No Change
		Detachable folding monitor shelf / notes holder.	No Change
		Oxygen cylinder holder.	No Change
		Lateral X-ray facility.	No Change
		Pressure reducing mattress.	No Change
		Integral fold down stainless steel safety sides.	No Change
		20-25 cm. anti static castors.	No Change
		Central braking with four corner activation.	No Change
		Safe working load : 300 kg.	No Change
		Tilt range \pm 18 degree.	No Change
		Height range 59-89 cm.	No Change
		Patient surface width >65 cm.	No Change
		Overall width >80 cm.	No Change
		Overall length >210 cm.	No Change
		CE & FDA approved.	No Change
	IABP Machine	<ul style="list-style-type: none"> Pneumatics: Drive system: Stepper motor driven bellows Drive gas- Helium (Available with disposable canister or refillable cylinder. Pumping Volume: 0.5 cc-50 cc Counter pulsation rate: 40-200 pulsations per minute 	No Change
		<ul style="list-style-type: none"> In Automatic Mode: System should be capable of automatically selecting appropriate trigger i.e. ECG or Pressure and also accurately select the inflation and deflation points, in automatic mode. In automatic mode of operation user should be in control of the deflation point. In Automatic mode Advance software should automatically adapt the timings for various rhythms and rate variations, without any user intervention. In Automatic mode it should automatically identify Arrhythmias and adopt R wave deflation mode for better patient support, without any user intervention In Manual mode the system allows user control of most of the pump functions. 	No Change
		<ul style="list-style-type: none"> Should be able to trigger on 7 mm Hg of Pulse pressure when used in Pressure Trigger mode 	No Change
		<ul style="list-style-type: none"> Single key start-up to make it fast, user friendly and easy to use 	No Change
		<ul style="list-style-type: none"> Should be able to display at least 3 wave forms as ECG, Invasive Pressure and Balloon Pressure wave forms 	No Change
			No Change

		<ul style="list-style-type: none"> Large display for brighter and very good visibility from a distance in lighting conditions 	No Change
		<ul style="list-style-type: none"> On screen indication for Helium level in the cylinder and battery level for timely intervention and correction. 	No Change
		<ul style="list-style-type: none"> ECG inflation marker to indicate inflation period on ECG which can be useful when arterial pressure form is not available. 	No Change
		<ul style="list-style-type: none"> On screen indication of standby time and should give alarm after 15-30 minutes, to draw user's attention on the system being on standby 	No Change
		<ul style="list-style-type: none"> Optical Blood leak detect for early indication of blood coming into the balloon lumen due to IABC leak 	No Change
		<ul style="list-style-type: none"> Should have extensive Help Text available during start-up to make the system easy to use even for new users. 	No Change
		<ul style="list-style-type: none"> Should give extensive Help messages to correct the alarm conditions that are specific to the alarm condition. This should help the user to overcome the alarm problems immediately and with ease. 	No Change
		<ul style="list-style-type: none"> Should be capable of removing condensation automatically without user intervention and should be maintenance free. 	No Change
		<ul style="list-style-type: none"> Should have Peripheral Vascular Doppler for detecting limb ischemia, which is attached to the main equipment 	No Change
		<ul style="list-style-type: none"> Should have automatic Altitude correction to make it safer for the use during Air Transport 	No Change
		<ul style="list-style-type: none"> Should have software which allows the user to monitor the IABP from any remote location via a modem 	No Change
		<ul style="list-style-type: none"> In-built Comprehensive Service Diagnostics to help the technician to locate the fault immediately 	No Change
		<ul style="list-style-type: none"> Should have capability to connect on the Hospital network 	No Change
		<ul style="list-style-type: none"> Power input to be 220 V AC, 50Hz fitted with Indian plug 	No Change
	Cell Saver	<ul style="list-style-type: none"> Spinning centrifuge 	Specification of Cell saver after amendment
		<ul style="list-style-type: none"> Built-in programming 	1. Recent generation autologous blood recovery system using latest micro-processor technology for automated collection and processing of autologous blood during surgery.
		<ul style="list-style-type: none"> Built-in safety features 	2. Should have automatic sensor for sensing the level in the reservoir to initiate machine operation.
		<ul style="list-style-type: none"> Sound volume control 	3 Despite automated operation, machine should have option for user to reprogram the parameters.
		<ul style="list-style-type: none"> Automatic protocols 	4. It should have dual RBC sensor in the centrifuge well, an ultrasonic air detector on the tubing lines and optical effluent line sensor the provide information to microprocessor for regulation of cycles of machine, and should also monitor the quality of washing. Should have fluid loss sensor.

<ul style="list-style-type: none"> Set up guide 	<p>5. It should have computer guided set up to guide the operator in setting up the system</p>
<ul style="list-style-type: none"> The unit shall be capable of being stored continuously in ambient temperature of 0 - 50 deg C and relative humidity of 15-90% 	<p>6.. There should be touch screen display panel to provide information relative to the operation of the system parameters like pump rate, wash volume, number of bowls processed, product volume and current mode of operation, which should be regularly updated automatically time to time.</p>
<ul style="list-style-type: none"> The unit shall be capable of operating continuously in ambient temperature of 10 - 40 deg C and relative humidity of 15-90% 	<p>7 It should have integrated hematocrit sensor.</p>
<ul style="list-style-type: none"> Power input to be 180-270VAC, 50 Hz Fitted with Indian plug 	<p>8 The final blood product should contain hematocrit of not less than 60%.</p>
<ul style="list-style-type: none"> Suitable UPS of rating with spike protection, voltage regulation and for 60 minutes back up. 	<p>9. It should be provided with a cart with four castor wheels to ensure easy manoeurability with locking facility for at least two wheels.</p>
	<p>10 It should have height not be more than 5 minutes, pump speed should be programmable from at least 25 to 1000 ml/min in cerements and temporarily reset facility with pump speed arrow keys from 0-1000m1/ min in manual mode.</p>
	<p>11. Washing bowls should be in minimum 4 different sizes for various kinds of patients vacuum pump can be used as an integrated and alone also</p>
	<p>12 It should have inbuilt USB ports Ethernet ports for data management system. It should have inbuilt memory for storing upto 10,000 cases.</p>
	<p>13. Should have an option of doing sequestration process.</p>

			14. Should have inbuilt printer with permanent printouts.
			15. US FDA / European CE (Issued by notified body) Approved model should be offered.
	Echo Doppler Machine with TEE Facility		
		System should be a fully digital colour Doppler echocardiography system	System should be a fully digital colour Doppler echocardiography system, latest model of manufacturer in this category having following probes- 1.TEE Adult 2D 2.Adult Cardiac probe 3.Pediatric Cardiac probe Single crystal technology or pure wave technology or preferably matrix technology.
		System should use digital beam former technology, capable of incorporating future techniques, should be upgradable through software and hardware.	
		System should have Multi array Probe technology for Phased Array, Linear Array, and curved Array and should support TE.	
		System should have high resolution, flicker free at least 10" TFT LCD monitor.	System should have high resolution, flicker free at least 10" TFT /LCD/LED/OLED
		The system shall capable of providing the following imaging and operating modes.	No Change
		a) 2D, M-mode, Colour M-Mode	No Change
		b) Colour Flow Doppler Imaging	No Change
		c) Fully Steerable Pulsed Doppler	No Change
		d) Fully Steerable Continuous Wave Recall	No Change
		e) Digital cine replay of all imaging and Doppler modalities.	No Change
		f) On screen Cine Storage & Image recall	No Change
		g) Digital Image Storage and Patient Archive with true scanner frame rates.	No Change
		h) Full measurement and analysis capabilities. Both on line and offline preferable.	No Change
		i) Imaging frequencies from 1 MHZ to 15 MHZ	No Change
		j) Review of stored ultrasound images.	No Change
		k) User adjustable B Colorization maps, gain settings, colour Doppler baseline, angle correction and other important parameters with live/frozen/archived images/loops.	No Change
		System should have minimum keys and knobs for easy patient data, annotation and report entries.	No Change
		Should have a display of single, dual images side by side.	No Change
		System should have a programmable architecture with data processing of phase, amplitude and frequency with raw data digital replay for cine/single loops allowing the adjustable of all major parameter and measurements	No Change
		Should have a built-in digital archival system for image storage and archival with reporting facilities. The internal HDD should atleast 4 GB. CD/DVD/USB drives should be available	No Change
		System should have on board, in built training and education guide/tutorial/ software for easy access of video images/library.	No Change
		System should have user definable report formats with inbuilt reporting text.	No Change
		Should have a zoom capability with live/frozen/stored images. Should have capability of zooming the archived cine loops.	No Change
		Should be DICOM 3 complaint	No Change

		Should be directly compatible with color inkjet printers	Should be directly compatible with color inkjet printer & supplied with having 01 no color inkjet printer
		Should have 3 or more tissue harmonic imaging frequencies in all imaging modes.	Should have Tissue Harmonic Imaging facility with software/hardware
		1. Colour rotating (360 deg) M Mode cursor.	No Change
			USDDA/Europian CE(notified body) approved model
	ECMO system	It should be small, compact, light in weight, movable with big lockable castor wheels.	No Change
		Machine should have:	No Change
		A. Console	No Change
		B. Centrifugal Pump	No Change
		C. Oxygenator	No Change
		D. Heating Unit	No Change
		Console with Centrifugal Pump:	No Change
		• It should have integrated bubble sensor & a separate level sensor to monitor level.	No Change
		• It should be supplied with an Emergency Hand Crank.	No Change
		• Should have an adjustable arm assembly to hold its Drive Unit & also it should be able to fix it in any position	No Change
		• Should have battery back-	No Change
		• up for minimum 1.5 hours.	No Change
		• Should have RPM speed 0-5000 rpm.	No Change
		• Should have Flow Rate 0-9.99 liters per minute.	No Change
		• It should have a warning Alert to the Operator that he has taken necessary clamp/valve to prevent back flow.	No Change
		• Should be possible to set higher & lower limit for RPM along with low limit setting for LPM.	No Change
		• It should have an integrated flow measuring sensor.	No Change
		• In case of any error message, an acoustic alarm must be sound.	No Change
		Heating Unit:	No Change
			No Change
		• Temperature setting range of water temperature should be 30 to 39 degree Centigrade with increments of 0.1 deg centigrade.	No Change
		• Should have digital display for set & outlet temperature & should be capable of showing alarm indications	No Change
		• Water reservoir capacity should not be more than 2 liter.	No Change
			USFDA/Europian CE(notified body) approved model
			Added- Consumables
			a. should have an advanced cart design maximizing safety and convenience to move the complete unit anywhere.
			b. should have a standard I.V. pole and provision for a second one.
			c. should have convenient oxygen cylinder storage facility.
			d. Sechrist Gas Blender should be supplied with the unit.
			e. should be CE/US FDA Certified.
			f. following ECMO consumables per unit price to be quoted.
			g. Oxygenator
			h. Tubing -aniti-thrombotic coated.

			h. Pump-head
			i. Heat Exchanger and
			j. Any other accessories to make the system function fully.
Portable OT Light		<ul style="list-style-type: none"> Extremely flat, compact and aero dynamical Mobile LED Examination Lightbased on innovative Phosphorus coated while LED technology. 	No Change
		<ul style="list-style-type: none"> The single light head should consist of several, symmetrically arranged light emitting modules, using multitudinous white LEDs to form a multi-lens matrix on a single light head for a shadow free and homogeneous illumination of the examination field 	No Change
		<ul style="list-style-type: none"> Light-head made of highly scratch resistant plastic 	No Change
		<ul style="list-style-type: none"> High fail-safety through optical light system consisting of LED's with its own lens. In case of failure of one light source (LED), the illumination of the light field is not affected 	No Change
		<ul style="list-style-type: none"> Lighting intensity at 1 m distance : min 50,000 Lux or better 	No Change
		<ul style="list-style-type: none"> Colour Temperature : between 4400 K or more 	No Change
		<ul style="list-style-type: none"> Illumination field diameter d10 (0.5 m distance) : 17 cm or more 	No Change
		<ul style="list-style-type: none"> Color rendering index [Ra (1-8)] : between 92 to 95 	No Change
		<ul style="list-style-type: none"> Life span of main light source : 35,000 hours - 40,000 hrs 	No Change
		<ul style="list-style-type: none"> On castor wheels and suspended on articulating arm 	No Change
			USFDA/European CE(notified body) approved model
NIRS monitor with cerebral oximeter		<ul style="list-style-type: none"> Should be non invasive method of monitoring 	No Change
		<ul style="list-style-type: none"> Technology: near Infrared spectroscopy based spectroscopic method that uses near infrared region of the electromagnetic spectrum 	No Change
		<ul style="list-style-type: none"> Technology should have two wave length of near infra red light 730nm & 810nm 	No Change
		<ul style="list-style-type: none"> Monitor should have provision of four channels 	No Change
		<ul style="list-style-type: none"> Should be user friendly with pre-calibration and ready to be used in 30 second 	No Change
		<ul style="list-style-type: none"> Should give rSO2 value with 25% arterial and 75% venous oxygen saturation of the tissue 	No Change
		<ul style="list-style-type: none"> rSO2 range should be 15-95 with update every 5-6 second 	No Change
		<ul style="list-style-type: none"> physical dimension should be compatible with bedside care of the patient (Height <30cm, Width<30cm) 	No Change
		<ul style="list-style-type: none"> alarm limit range of High: 20-95, low:15-90 	No Change
		<ul style="list-style-type: none"> sensor should be available for all patient categories: adult>40kg, paediatric<40kg, neonatal cerebral>2.5kg, neonatal somatic>2.5kg 	No Change
		<ul style="list-style-type: none"> infant/neonatal sensor dimension should be approximately 7cm and length 2.5cm, width & depth should be 2.5cm 	No Change
		<ul style="list-style-type: none"> infant/neonatal sensor should be minimum of 1 to 2m 	No Change
		<ul style="list-style-type: none"> sensor self calibration automatic by system 	No Change
		<ul style="list-style-type: none"> should be able to perform automatic self test 	No Change
		<ul style="list-style-type: none"> should have trend display in the form of graphical and tabular format 	No Change
Temp Pace Maker-Single Cham		<ul style="list-style-type: none"> display: color TFT display size of 6.4 or more 	No Change
		<ul style="list-style-type: none"> power requirement: 100-240 VAC,50/60Hz,1-0.5 A 	No Change
			USFDA/European CE(notified body) approved model
		1. Should be a single chamber pacemaker (Temporary) for bradycardia treatment before, during or after a surgery.	No Change
		2. Stimulation burst and permanent stimulation should be available for high frequency stimulation.	No Change
		3. Should be compact & easy-to-operate device, particularly suitable for emergency treatments.	No Change
		4. Safety features, including automatic lead and battery check.	No Change
		5. Should have continuous monitoring of the battery voltage.	No Change
		6. Should give an acoustic signal in the event of lead malfunction.	No Change

		7. Should have transparent cover for parameter protection.	No Change
		8. Should have shock and water-resistant housing.	No Change
		9. Should have back up pacing during battery change.	No Change
		10. Should have Modes AOO, AAI, VOO, VVI. 11.	No Change
		11. Should have pacing rate 40-180 ppm.	No Change
		12. Should have fast pacing (Burst rate) of 80-800ppm.	No Change
		13. Should have pulse Amplitude of 0.1-17V	No Change
		14. Should have sensitivity 1.0-20mV 15. Should have minimum battery backup> 200 hours.	No Change
		15. Should have safety certificate from a competent authority USFDA and European CE certified	No Change
	Temp Pace Maker-Double Cham	1. Should have LCD Screen Display for displaying various parameters	No Change
		2. Modes : DDD, DOO, DDI, AAI, AOO, VVI, VOO	No Change
		3. Single and dual chamber Pacing capability	No Change
		4. Should have low battery indicator	No Change
		5. Should have safety feature so that pacemaker is not accidentally switched off	No Change
		6. Electrode type : Unipolar or Bipolar	No Change
		7. Certification : US FDA & European CE Certified	No Change
		8. Should work with 9V Duracell battery with backup of minimum 9-10 days	No Change
		9. Should have Pacing Rate : between 30 and 200 ppm	No Change
		10. Should have Rapid Atrial Pacing Rate : 80 – 800 ppm	No Change
		11. Should have Output Amplitude	No Change
		- Atrial 0.1-20mA & Ventricular 0.1 – 25mA	No Change
		12. Should have Pulse Width	No Change
		- Atrial 1.0ms & Ventricular 1.5ms	No Change
		13. Should have Sensitivity	No Change
		- Atrial 0.4 – 10mV & Ventricular 0.8 – 20mV	No Change
		14. Should have pulse width : 1.5ms	No Change
	Portable Spirometer	15. Should have Sensitivity	No Change
		- Atrial 0.4V – 10mV & Ventricular – 0.8V – 20mV	No Change
		16. Should have weight less than 700gm	No Change
		• Capability to measure FVC , VC , MVV , VT , FEV1 , FEV6 , FEV1/FEV6 , PEF , PIF , FEF25-75 , FEV1/VC% , MEF25% , MEF50% , MEF75% , MVV	No Change
		• Interference with standard desktop/laptop computer	No Change
		• Meets current ATS recommendations on equipment accuracy.	No Change
		• Volume measurement 0 to 8 litres	No Change
		• Flow measurement 0 to 15L/sec	No Change
		• Real-time Flow/volume and volume/time traces on the computer Screen	No Change
		• Overlaying of previous test curves for comparison	No Change
		• Capability to store pre- and post-bronchodilator measurements in the same record	No Change
		• Temperature sensor; internal temperature sensor for automatic BTPS.	No Change
		• Capability to store atleast 500 patient test results.	No Change
		• Capability to select and modify prediction equations.	No Change
		• Automatic diagnosis facility	No Change
		• Facility for report generation through an external printer	No Change
		• Customizable report printout format	No Change
		• adult reusable mouthpieces and 10 pediatric reusable mouthpieces	No Change
	Freezer-165 Litre	• Specification for Laptop: Intel corei3 or higher with 4 GB RAM , 500 GB HDD , with DVD writer , 17"monitor with latest operating system	No Change
			USFDA/European CE(notified body) approved model
		• Description: Vertical, frost free, CFC free, Single Glass Door, Door with lock and nlt'	No Change
		• Capacity: 165 L	No Change
		• Temperature range: Should be from 0 - 4 oC throughout the Chamber	No Change
		• Temperature should be controlled by micro-processor controller	No Change
		• Should have digital display of temperature	No Change
		• Number of Shelves: Should have 04nos	No Change
		• Should be supplied with suitable voltage stabilizer	No Change
		• Power supply: 230V AC, 50 -60 Hz	No Change
	Blood Storage Cabinet-165 litre	• Temperature should maintain between +2° C to +6 °C.	No Change

		<ul style="list-style-type: none"> Should be provided with a temperature recorder (weekly chart recorder). 	No Change
		<ul style="list-style-type: none"> The unit should be mounted on wheels. 	No Change
		<ul style="list-style-type: none"> The external cabinet should be of rust proof material and have internal SS sheet and should have sliding trays made of stainless steel. 	No Change
		<ul style="list-style-type: none"> Should have an inner door of easy viewing material. Door- lockable double system glass doors 	No Change
		<ul style="list-style-type: none"> Should have a digital sensor dipped in liquid medium 	No Change
		<ul style="list-style-type: none"> Should have a display for temperature. 	No Change
		<ul style="list-style-type: none"> Internal temperature hold overtime in case of power failure should be at least 1 ½ hrs. 	No Change
		<ul style="list-style-type: none"> Should have an internal light 	No Change
		<ul style="list-style-type: none"> Should have visual, audible indication for door open, high and low temperature and power on. 	No Change
		<ul style="list-style-type: none"> Alarm system should be incorporated with battery backup for minimum 2hrs. 	No Change
		<ul style="list-style-type: none"> Should have a vertical cabinet. 	No Change
		<ul style="list-style-type: none"> Should have a CFC free, Urethane foam insulation (50-90mm) to protect cabinet from ambient temperature fluctuations 	No Change
		<ul style="list-style-type: none"> System should have a positive forced air circulation to maintain temperature uniformity at all shelf levels with +/- 1degC. 	No Change
		<ul style="list-style-type: none"> Should have sensors for activating automatic defrost cycles to minimize the frost build up 	No Change
		<ul style="list-style-type: none"> Should be provided with a voltage stabilizer (external or inbuilt) of appropriate ratings. 	No Change
		<ul style="list-style-type: none"> Should operate on mains 220-240Vac, 50 Hz single phase. 	No Change
		<ul style="list-style-type: none"> Should be able to accommodate 60 numbers standard blood bags for each of 350 ml capacity 	No Change
		Name of machine- Flash Sterilizer	Name of machine- ETO machine
TSSU	Flash Sterilizer	<ul style="list-style-type: none"> Should provide sterilization at 121°C and 134°C for both wrapped and unwrapped instruments and tools. 	<ul style="list-style-type: none"> - Cycle progresses automatically through vacuum, exposure, sterilizing, and aerating phases.
		<ul style="list-style-type: none"> Should have flash cycle for rapid sterilization and should have an option for liquid cycle. 	<ul style="list-style-type: none"> Screen on the control panel of the machine indicate specific phases during the operation of sterilization process.
		<ul style="list-style-type: none"> Should be equipped with powerful vacuum pump to eject air pockets from the chamber at the beginning and at the end of the cycle. 	<ul style="list-style-type: none"> Negative chamber pressure ensures that gas cannot escape into operating area.
		<ul style="list-style-type: none"> Should have rapid warm up facility. 	<ul style="list-style-type: none"> Control system provides strict control of vacuum, chamber temperature, exposure / aeration time etc. to assure consistent and accurate performance
		<ul style="list-style-type: none"> The system should be equipped with required safety features. The door should have double locking safety feature and should open only with atmospheric pressure in the 	<ul style="list-style-type: none"> A leak test function takes a prevision of any leakage possibility and the EO sterilizer can be started only when the vacuum is completely drawn.
		<ul style="list-style-type: none"> chamber. 	<ul style="list-style-type: none"> The construction of chamber and cabinet are made of high quality stainless steel.
		<ul style="list-style-type: none"> Should have automatic safety cut-off to prevent overheating and cut-off for insufficient water. 	<ul style="list-style-type: none"> Aeration system in the machine reduces the potential for operator exposure to EO gas.
		<ul style="list-style-type: none"> Should have a chamber capacity of 19 liters/cycle. 	<ul style="list-style-type: none"> Aeration system in the machine reduces the potential for operator exposure to EO gas.
		<ul style="list-style-type: none"> Should have a pressure gauge. 	<ul style="list-style-type: none"> The Automation Hardware used in the machine: PLC (CE approved, CLASS 1 DIV2 Groups ABCD)

		<ul style="list-style-type: none"> Unit should function with 200-240Vac, 50/60 Hz input power supply. 	<ul style="list-style-type: none"> Can sterilise
		<ul style="list-style-type: none"> The system should comply with National quality certification or International standards for sterilization safety. 	<ul style="list-style-type: none"> Plastic products (Used for Medical and Surgical Procedures)
		<ul style="list-style-type: none"> All tubing's, fixtures, Fuses, reusable and accessories should be supplied along with the equipment. 	<ul style="list-style-type: none"> Devices that incorporate electronic components.
		<ul style="list-style-type: none"> The supplier should also provide the list of spares, fixtures and installation diagram with the quote. 	<ul style="list-style-type: none"> Materials that get damaged at higher temperatures.
		<ul style="list-style-type: none"> Equipment should be provided with a line cord (power cord) of acceptable durability, quality, length and current carrying capacity and should be compatible with Indian 	<ul style="list-style-type: none"> Materials those are not compatible with other methods such as Steam sterilization.
		<ul style="list-style-type: none"> standard power socket. 	<p>These Ethylene Oxide Gas Sterilizers are supplied to the hospitals, clinics and health centers with 3 core cord together with a 3- pin plug for use on 220 / 250 W, Single phase AC. The range is easy to install and does not acquire maintenance charges. As per the ISO 11135 Standards below shown table is the Limitation for (EO Residue) per/ device.</p>
		<ul style="list-style-type: none"> Controls should be visible and clearly defined. 	Ethylene Oxide : NMT 4mg/device
Washer Disinfector	1) Fully Automatic Washer Disinfector for Cleaning, Disinfection and Drying of surgical instruments.		Ethylene Glycol: NMT 9 mg/device
		2) It should be able to handle heavily soiled instruments without any pretreatment / pre cleaning.	Ethylene Chlorohydrin: NMT 9 mg/device
		3) It should clean, wash, disinfect and dry instruments in one cycle to simplify the process.	EO Series SEL 450
		4) It should be a front loading system with touch screen display.	5x5x10
		5) Chamber volume should be at least 125 L.	5x5x15
		6) Should have microprocessor controlled operation for different programs for chemical and thermal disinfection of different types of instruments and should have option of vacant places for customized programming.	6x6x15
		7) System should take fresh water for each program stage and should have at least 2 spray arms in the washing chamber.	6x6x20
		8) It should be equipped with a flow meter to monitor water intake quantities.	
		9) The wash chamber and the spray arms should be made of high grade stainless steel.	
		10) It should have automatic unit recognition capability for automatic recognition of different types of load.	
		11) The system should have 2 integrated dispenser pumps for processing chemicals.	
		12) System should have integrated steam condenser and drain pump.	
		13) An inbuilt filtration system should be integrated in the system.	
		14) It should have thermal disinfection option.	
		15) It should have integrated hot air drying with HEPA filtration.	
		16) It should give optical and acoustic signal at the end of program and should have an electric door lock.	
		17) Option of process documentation.	
		18) Should have a circulation pump of minimum capacity 600 L/min.	
		19) System should have sensors for temperature control and monitoring the rotation speed of the spray arms.	
		20) It should have alkaline, oxidative cleaning process to avoid damage to special steel and aluminium instruments/prosthesis.	

		21) Option of remote connection to service module for diagnostics and maintenance to minimize downtime.	
		22) System should be supplied with loading units for general surgical instruments, anesthesiainstruments and MIS instruments.	
		23) It should be supplied with water purification system for producing demineralised water for thermal disinfection.	
		24) Equipment manufacturer should comply with international quality and safety regulations ISO/FDA/CE ect.	USFDA/Europian CE(notified body) approved model
		25) The manufacturer should have a good number of installations globally and a service backup team based in India.	
		Note :-	
		Consumables / Spares per unit, if any, should be quoted separately which will be taken for the purpose of price evaluation.	
		•	
2. CARDIAC CATHLAB			
CARDIAC CATHLAB	Cath lab Fabrication	wall & Ceiling panelling:	No Change
			No Change
		• The Antimicrobial wall & Ceiling paneling should be capable of being used in operating theatres, all critical areas of the hospital.	No Change
		• Should have the ability to actively kill the bacteria, fungus, virus when they come in contact with the silver ions present in the sheets.	No Change
		• Should contain antimicrobial preferably Biocote technology (which is proven against a wide range of microbes including MRSA, E Coli, Salmonella and fungus to inhibit their growth by at least 99% and which should have scientific proof and certification)	No Change
		• Should have a continued 24/7 protection	No Change
		• Substantiated with case studies to show a reduction in infection from the hospitals that are using It.	No Change
		• Should be able to be fixed onto the following types of surfaces –	No Change
		a. Good quality fair faced brick or blockwork.	No Change
		b. Sand and cement rendering 1:3 with a steel trowel finish.	No Change
		c. 12.5 mm thick plasterboard.	No Change
		d. Ceramic tiles which are securely bonded to a substrate.	No Change
		e. 9mm (minimum) W.P.B resin bonded to substrate.	No Change
			No Change
		• Should come in variable sizes to minimize wastage (in 10 x 4ft, 9 x 4 ft and 8 x 4 ft)	No Change
		• Should be available in various thickness – 2mm, 2.5mm, 3.0mm and 3.5mm to be used in different areas or applications	No Change

<ul style="list-style-type: none"> Should be in various colours to blend with the architect design and colour coding for various areas (Operation theatres, ICU, etc) 	No Change
<ul style="list-style-type: none"> Should be supplied with the total solution – sheets, adhesives, welding, trims and all should be certified to be antimicrobial. 	No Change
<ul style="list-style-type: none"> The material should be VOC free to help in using in special applications where a VOC free environment is requiredcontd.... 	No Change
<ul style="list-style-type: none"> Should have a Fire rating to CS 476-7:1971: with Class 1/0 (when bonded to a non-combustible substrate) 	No Change
<ul style="list-style-type: none"> Method of fixing: should be on site and to be mechanically fixed using PVC Silicone free gasket system and advanced all over adhesive. It should be performed and on site thermoformed angle sections internal/external corners, UPVC cill details, joints and edge trims. 	No Change
<ul style="list-style-type: none"> The products should comply with EEC regulations for hygiene, Environmental Protection Agency (EPA), Food and Drug Administration (FDA USA), Biocidal Products Regulation (BPR). 	No Change
<ul style="list-style-type: none"> The antimicrobial protection should be proven effective in inactivating the influenza virus (H1N1) under laboratory conditions and test certificates to be provided 	No Change
<ul style="list-style-type: none"> The should have antimicrobial technologycertified by HACCP International. 	No Change
<ul style="list-style-type: none"> The product should have a unique anti- fraud detection system to prevent fake sheets being used and the original sheets to be identified by a unique on site technology (Eg. laser detection technology assisting in life cycle management) 	No Change
<ul style="list-style-type: none"> The PVC welding should have atleasta IP66 Dust Ingress Test Certificate to prove no dust or water ingress between the joints being welded with the unique welding system. 	No Change
<ul style="list-style-type: none"> Cladding to be also done on wall , ceiling in OT & OT Corridor 	No Change
<ul style="list-style-type: none"> Separate rates to be quoted for White and pastel colors. 	No Change
<ul style="list-style-type: none"> Product should be USFDA & European CE. 	No Change
<ul style="list-style-type: none"> Product glue(Adhesive) used should be USFDA. 	No Change
Base FOR Ceiling:	No Change
<ul style="list-style-type: none"> Calcium Silicate of 8mm base need to be provided for panelling. 	No Change
Flooring:	No Change
(1)The floor cladding should offer minerals penetrate all the way through inside the surface of the material to offer slip resistance and reduce wear and tear.	No Change
(2)Should be 2mm thickness PVC	No Change
(3)The Special Sliver Ion technology should be incorporated into Floor Cladding as an additive at the time of manufacture. Once incorporated, the antimicrobial additives should provide continuous built-in antimicrobial protection.	No Change
(4)The Special silver ion technology, should reduce the level of microbes in the floor cladding by up to 99.9% in two hours, with an 80% reduction in the first 15 minutes compared to an unprotected surface where they can proliferate at dramatic rates.	No Change

(5) The additives used in the Special Silver Ion Technology should be registered with the following bodies: Environmental Protection Agency (EPA) Food and Drug Administration (FDA) Biocidal Products Regulation (BPR)	No Change
(6) The Special Silver Ion Technology used Should be Proven effective against E. Coli and MRSA.	No Change
and effective in inactivating the influenza virus (H1N1). Should be Tested in accordance with ISO 22196.	No Change
(7) The special silver ion technology used should have antimicrobial technology certified by HACCP International.	No Change
(8) The product should have a unique anti fraud detection system to prevent fake sheets being	No Change
used and the original sheets to be identified by a unique on site technology (Eg. laser detection	No Change
technology assisting in life cycle management).	No Change
(9) Should be installed using specially formulated adhesives for installation provided from the same company.	No Change
(10) EASE OF INSTALLATION Floor clad should have NO chalk/talk or inert fillers,(assisted by taking the air out of the mixture,) and hence should make it extremely flexible and easy to handle in difficult areas.	No Change
(11) The cellulose backing should offer a strong bonding for Floor adhesives uniquely formulated.	No Change
(12) The product should have been manufactured through a 'De-Airing' process which eliminates the air pockets that suck in and hold moisture and dirt and should have a heavy embossed finish which further compresses the PVC and should making it denser and impervious to moisture.	No Change
(13) Should offer Safety Flooring as per EN 13845 EN 13553	No Change
(14) Sound Insulation 5dB	No Change
(15) Wear Resistance should be as per EN -660-2	No Change
(16) Slip Resistance as per Appendix A (Wet Pendulum) , Appendix D (Oil -Wet)	No Change
(17) Chemical Resistance as per EN 423	No Change
(18) Fire Performance as per EN 13501-1 Class Bfl -s1	No Change
(19) Appropriate flooring ie Antistatic and Static to be quoted for OT	No Change
	No Change
	No Change
	No Change

	No Change
	No Change
LED - Peripheral Lights:	No Change
<ul style="list-style-type: none"> Recess mounted sealed IP65 Protocol, non-hygroscopic peripheral light (1' x 2') having compact high glow low wattage LED lighting system. These lights are having electrical safety code for high & low voltages. Minimum lux intensity in OT will be 400 Lux. 	No Change
	No Change
Door:	No Change
<ul style="list-style-type: none"> Track: 	No Change
<ul style="list-style-type: none"> High grade aluminum extrusion profile to carry any door weight (till size 	No Change
<ul style="list-style-type: none"> 2400mm X 2400mm) with deep indentations to ensure perfect hermetic sealing. 	No Change
<ul style="list-style-type: none"> Canopy: 	No Change
<ul style="list-style-type: none"> For HPCL Door:- Powder coated galvanized sheet over the full length of track with sloping top and closing caps. 	No Change
<ul style="list-style-type: none"> Door Blade: 	No Change
<ul style="list-style-type: none"> Door core of 60mm thick built up with:- 	No Change
<ul style="list-style-type: none"> For HPCL:- 4mm thick HPCL (High Pressure Compact Laminate) skin at both side of the door to provide better strength and rigidity. 	No Change
<ul style="list-style-type: none"> - CFC-free, high density polyurethane puff (density 40 kg/m³), thickness 50mm to provide better insulation. 2 mm Thick Lead Sheet is installed the complete door blade. 	No Change
	No Change
<ul style="list-style-type: none"> Door Profile: 	No Change
<ul style="list-style-type: none"> Door core is surrounded by 2.5 mm thick high grade aluminum extrusion 	No Change
<ul style="list-style-type: none"> profiles with natural anodizing of 15 microns finish. The aero-dynamic design of 	No Change
<ul style="list-style-type: none"> profiles makes the door ROBUST in its segment league. 	No Change
	No Change

<ul style="list-style-type: none"> Gaskets: 	No Change
<ul style="list-style-type: none"> Door blade is made with 3-tier specially designed 3 side heavy duty replaceable 	No Change
<ul style="list-style-type: none"> 	No Change
<ul style="list-style-type: none"> EPDM gasket against wall frame. Bottom sealing with 2-tier heavy duty EPDM 	No Change
<ul style="list-style-type: none"> gasket to flush with finished floor. 	No Change
	No Change
<ul style="list-style-type: none"> Opener: 	No Change
	No Change
<ul style="list-style-type: none"> Stainless Steel Rebbon lever handle on both side of the door blade for smooth and easy door opening and closing OR for small door outside D-grip handle and inside flush grip 	No Change
	No Change
<ul style="list-style-type: none"> Wall Frame: 	No Change
<ul style="list-style-type: none"> High grade Aluminum extrusion with natural anodized 15 micron finish wall frame profile. This wall frame profile is 3-sided blind fixed with cladding on wall cut-out section from inside and outside of the room. 2 mm thick Lead Sheet install in complete wall frame. 	No Change
	No Change
<ul style="list-style-type: none"> Cladding: 	No Change
<ul style="list-style-type: none"> For HPCL:- The cut-out of wall section is covered with 1mm thick high 	No Change
<ul style="list-style-type: none"> pressure laminate glued on 9mm high density particle board. 	No Change
<ul style="list-style-type: none"> Acoustic: 	No Change
<ul style="list-style-type: none"> Sound reducing door up to 28db 	No Change
<ul style="list-style-type: none"> Operation: 	No Change
<ul style="list-style-type: none"> Door can be open/close manually or with automation. 	No Change
<ul style="list-style-type: none"> Weight: 	No Change
<ul style="list-style-type: none"> Complete door blade weight is 120 Kg approx and track assembly is 20 Kg. 	No Change

		<ul style="list-style-type: none"> Sliding: 	No Change
		<ul style="list-style-type: none"> Door can be open to Right Hand Slide OR Left Hand Slide. 	No Change
	Cardiac Cath lab System		Should be latest model of the company & Should be capable of cath and angiography from neonatal to adults and from head to toe, Should have full body coverage having less radiation to patient
	C-ARM	1. The C-Arm should be multidirectional high speed giving free access to the patient.	1. The C-Arm should be multidirectional high speed giving free access to the patient.
		2. The C-Arm should have both right and left positioning capabilities essential for some of the pace maker procedures.	No Change
		3. Variable speed of at least 20 deg/sec or more.	No Change
		4. The source to FD distance should be at least 80cms.	Should have full body coverage
		5. The C-Arm should have parking facility without hindrance to the patients.	No Change
		6. The Gantry should be either Ceiling Suspended or Floor Mounted.	The Gantry should be either Ceiling Suspended
		7. Facility for motorized rotation of stand from the floor base/ceiling pivot by +/-90 degrees for improved workflow and for ease of operation left side motorized right side manual/motorized of the patient in addition to zero degree normal head end position.	No Change
			Added- RAO/LAO angle should be +/- 110 degree & Crenial-caudial movement should be +/- 45 degree
	X-RAY GENERATOR	1. Generator should be of latest technology with high frequency type with at least 100kW output.	No Change
		2. X Ray tube with noise less operation with high Anode Heat Storage Capacity to support long interventional procedures without interruption.	No Change
		3. X-ray generator should be of high frequency X-ray generator with centralized system control with max power rating 100 KW	No Change
		4. The X-ray generator should be able to deliver up to 1000 mA.	No Change
		5. The X-ray generator should be able to support pulsed fluoroscopy high contrast fluoroscopy and normal fluoroscopy as standard.	No Change
		6. System should have automatic dose correction.	no Change
		7. Cooling rate or heat dissipation in kW should be at least 4500W or more Higher will be preferred.	No Change
		8. The generator should be able to expose at 30 Hz/sec	No Change

			Added-Should have secondary grid switching and latest radiation reducing features.
			Added- X-ray tube –heat storage capacity – 3.7 mHu or above.
			Added-Collimeter should have facility for copper pre filtration and dose measurement chamber in order to display the skin dose on the monitor in the lab.
	DIGITAL CARDIAC IMAGING SYSTEM	1. High-resolution digital imaging system with high quality image display, DICOM connectivity.	No Change
		2. The DSA systems should have facility to perform acquisition in frame rates ranging from 0.5f/sec to 6f/sec in 1024x1024x12 bit matrix.	1. Should have facility for rotational angiography.
		3. The system should have the facility to perform live online and real-time DSA.	No Change
			Added-Should have capability of frame speed -6/7.5/12.5/15/25/30 fps.
			Added-Should have facility for rotational angiography.
		4. Online DSA should be performed from examination room itself.	No Change
		5. The system should have image storage level of minimum 100,000 images in 1Kx1K matrix on the main system disk.	No Change
		6. The system should support acquisitions and display in high-resolution 1024x1024x12 bit matrix at 12,5f/sec, 25f/sec.	No Change
		7. The system should have complete coronary analysis (QCA) programmed to be, which is clinically validated with control from patient tableside in the examination room.	No Change
		8.Image Harmonization feature or s/w for improved image quality should be quoted as standard	No Change
			Added- Should have stent visualization and quantification should be available with fade-in – fade out facility.
			Added- ECG and Hemodynamic Parameter should displayed on Angio monitors and Console also.
			Added- Should have 16bit capacity machine
			Added- Should haveDynamic flat detector
			Added- Should have 1024X1024 matrix
			Added- Should have stent visualization and quantification should be available with fade-in – fade out facility.
			Added- Should have capability of frame speed -6/7.5/12.5/15/25/30 fps.
			7. Should have 1024X1024 matrix

			5. Should have 16bit capacity machine
			3. Should have stent visualization and quantification should be available with fade-in – fade out facility.
			4. ECG and Hemodynamic Parameter should displayed on Angio monitors and Console also.
			Should be competible with IVUS sysem as well as OCT sytem
			Should be fully loaded with
		•	3D RA
		•	3D CA(complete)
		•	QCA
		•	Q. vessel analysis.
		•	LV function
			Total number of monitor in examination room – 04
			1. Two LCD/ TFT / LED flat 19” or higher, monochrome monitors with wide viewing angle, high luminous , high contrast, flicker free, distortion free: one for live image and one for reference.
			2. One additional color monitor for hemodynamic display
			3. One additional Color monitor for displaying 3D electro-anatromic mapping (CARTO/ onsite) images or external devices like 3D rotational Angiography / OCT/ ECHO display etc.
			4. Monitors in the examination room should be ceiling suspended with height adjustment and longitudinal travel to either side of the table.
			5 All monitors may be incorporated in to a single suspensable frame for smooth functioning of patient cases
			7. Monitor brightness should be 600cd / m2.
			8. Display System pixel size should be minimum-184 micron
			Total number of monitor in console room – 04

Image Display Monitor

			2. One Display monitor for live reference display – monochrome in console
			Slave color monitor in console for hemodynamic display -01
			Two LCD/ TFT / LED flat 19” or higher, monochrome monitors with wide viewing angle, high luminous , high contrast, flicker free, distortion free: one for live image and one for reference.
			Patient details veiwing facility by computer in console room to veiw the patients
	PATIENT TABLE (WEIGHT BEARING CUSTOMISED)	1. The table should have rotational facility for emergency use.	No Change
		2. Floor mounted angiography table with low absorption carbon fibertabletop all movements with standard accessories.	No Change
		3. Table should be able to take patient weight of 200 kg.	No Change
		4. Additional weight for resuscitation in the metal free overhang area with or without having to retract the table back on its baseOperator lamp (Light)Pivot range of the Table: -90 to + 180 deg.	No Change
		5. Table should be able to lock at any position - Option.	No Change
	CATHLAB RECORDING SYSTEM	1.NIBP, SpO2, Three Invasive Pressures, 12 Lead Surface ECG, Thermal cardiac output, Body surface temperature, Respiration	No Change
		2. Patient cable set (10 Lead Trunk Cable, 5 Lead Limb Set,5 Lead Chest Set, 5 Lead Radiolucent set, SPO2 Adaptor Cable, Reusable pediatric/adult clip SpO2 sensor, NIBP Hose, Comfort Reusable Cuff Kit - all sizes (infant, pediatric, small adult, adult, large adult, thigh), Bath Probe, Cardiac Output Cable, External Temperature Probe).	No Change
		3. Printer, IBP Cable/ Reusable Transducer to be supplied.	No Change
		4. Easy to operate, rapid calculation software both online in the duplicate system console in exam room and off-line from CD's directly on the CD recorder/review station would be preferred.	No Change
		5. Image storage capacity of more than 1, 00,000 images at 1024 x 1024 with 10 bits on main system hard-disk.	No Change
	FLAT DETECTOR	1.180 um and above pixel arrays ensures highest spatial resolution and excellent contrast.	No Change
		2. Fluoroscopy as well as image acquisition is always done in 1 k matrix and 14-bit gray scale resolution with high details visibility.	No Change
		3. Acquisition frame rates are possible up to 30 f/s.	No Change
			No Change
		4.The detector should be minimum of 10 inch Diagonal	The detector should be minimum of 10 inch Diagonal,Should haveDynamic flat detector
	EXAMINATION LAMP, 230 V	1. Luminance: 50,000 Lux (4,650) for 100 cm distance.	No Change
		2. Working distance: 70 to 140 cm	No Change
		3.Color rendering index Ra (gen): 96	No Change
		4.Color temperature: 4,300 Kelvin	No Change
		5. Focusable spot size: 14 to 25 cm.	No Change
		6. Light body diameter: 22 cm	No Change
		Halogen lamp: 22.8 V/50W, Power supply examination lamp 230V.	No Change

			Complete cath lab system online UPS with atleast 30 min backup
			Machine should be USFDA/European CE(notified body) approved model
	Ventilator		Deleted
	IABP Machine	1. Drive system: Stepper motor driven bellows Drive gas- Helium (Available with disposable canister or refillable cylinder. Pumping Volume: 0.5 cc-50 cc Counter pulsation rate: 40-200 pulsations per minute	No Change
		2. In Automatic Mode: System should be capable of automatically selecting appropriate trigger i.e. ECG or Pressure and also accurately select the inflation and deflation points, in automatic mode. In automatic mode of operation user should be in control of the deflation point. In Automatic mode Advance software should automatically adapt the timings for various rhythms and rate variations, without any user intervention. In Automatic mode it should automatically identify Arrhythmias and adopt R wave deflation mode for better patient support, without any user intervention In Manual mode the system allows user control of most of the pump functions.	No Change
		3.Should be able to trigger on 7 mm Hg of Pulse pressure when used in Pressure Trigger mode	No Change
		4.Single key start-up to make it fast, user friendly and easy to use	No Change
			No Change
		5.Should be able to display at least 3 wave forms as ECG, Invasive Pressure and Balloon Pressure wave forms	No Change
		6.Large display for brighter and very good visibility from a distance in lighting conditions	No Change
		7. On screen indication for Helium level in the cylinder and battery level for timely intervention and correction.	No Change
		8. ECG inflation marker to indicate inflation period on ECG which can be useful when arterial pressure form is not available.	No Change
		<u>Power Supply</u>	No Change
		Power input to be 220 V AC, 50Hz fitted with Indian plug	No Change
		On line UPS of suitable rating with voltage regulation and spike protection for 60 minutes back up.	No Change
			USFDA/European CE(notified body) approved model
	2D ECHO CARDIOGRAPHY COLOUR DOPPLER SYSTEM(PORTABLE)		System should be a fully digital colour Doppler echocardiography system,latest model of manufacturer in this category having TEE option in the machine following probes- 1.Adult Cardiac probe 2.Pediatric Cardiac probe
		<ul style="list-style-type: none"> System must be a state-of-the-art model with all digital beam former with super computed signal processing and clinically proven imaging technologies. System quoted must be your highest end. 	Should have the specification given for Advanced 2D Echo machine with colour Doppler with strain Imaging having adult cardiac probe, paediatric cardiac probe & neonatal cardiac probe
		<ul style="list-style-type: none"> System must be offered with the following applications. : Abdominal, OB/Gyn, Renal, Small parts, Musculoskeletal, TCD, Cardiology, Vascular, TEE and Intra cardiac echo Imaging. 	Single crystal technology or pure wave technology or preferably matrix technology.
		<ul style="list-style-type: none"> The system should not weigh more than 8 kgs. Systems which are heavier than 8 kgs are liable for rejection. 	System should have Tissue Harmonic Imaging Analysis
		<ul style="list-style-type: none"> System must be offered with a minimum of 100000 digital processed channels per image frame. Original technical data sheet should be enclosed in the technical bid to support the number of channels on the systems .If not mentioned Please attach a letter from manufacturer along with the technical bid clearly stating the Channels of the offered system. 	No Change
		<ul style="list-style-type: none"> System must have convex and cardiology transducer with either single crystal technology or purewave or matrix technology for excellent Image quality on difficult to image patients. Technical data sheet should be enclosed in the technical bid to support the above technology used in the transducer. System offered with normal transducers for adult echo is liable for rejection. 	No Change

<ul style="list-style-type: none"> System must be offered with a MINIMUM 15 inch High Resolution Intergrated Flat Panel Display monitor with minimum monitor resolution of 1050 x 1400. System offered with smaller screen is liable for rejection. 	System must be offered with a MINIMUM 15 inch High Resolution Intergrated Flat Panel Display monitor with minimum monitor resolution of 1050 x 1400. System offered with smaller screen is liable for rejection, Monitor should be LED/ OLED, preferably OLED
<ul style="list-style-type: none"> System must be offered with frequency compounding facility. Other equivalent Technology can also be offered. Processing technology in technical bid should be highlighted. 	No Change
<ul style="list-style-type: none"> System must be offered with 2D, M - mode, Colour M- mode, Anatomical M-mode, Colour Flow, Pulse Wave Doppler, continuous Wave Doppler and Directional Color Power Doppler. 	No Change
<ul style="list-style-type: none"> System must be offered with Speckle Reduction Imaging : Image processing technique to remove speckles and clutter artifacts 	No Change
<ul style="list-style-type: none"> System must be offered with a very high dynamic range of at least 170 dB to pick up subtle echoes. Original technical data sheet should be enclosed in the technical bid to support the Dynamic range in Db. If not mentioned Please attach a letter from manufacturer along with the technical bid clearly stating the dynamic range of the offered system. 	No Change
<ul style="list-style-type: none"> Frequency processing facility for the transducers should be 1 - 15 MHz This must be available without the need for frequency switching. 	No Change
<ul style="list-style-type: none"> System must be offered with Eight-slide pot control adjustment of TGC curve. 	No Change
<ul style="list-style-type: none"> Independently selectable gain Control in Lateral plane. (Better technology can also be offered). 	No Change
<ul style="list-style-type: none"> Triplex Imaging should be standard on the system. 	No Change
<ul style="list-style-type: none"> System must be offered with an 2D frame rate of at least 750 frames/second. Acquisition frame rate should be clearly mentioned in the technical quote If not mentioned Please attach a letter from manufacturer along with the technical bid clearly stating the dynamic range of the offered system, failing which the bid is liable for rejection. 	No Change
<ul style="list-style-type: none"> System must be offered with Anatomical M-Mode (Angle-corrected M-mode). 	No Change
<ul style="list-style-type: none"> System must be offered with Pulsed wave Tissue Doppler Imaging (TDI) for velocity mapping 	No Change
of cardiac tissue and vessel wall motion.	No Change
<ul style="list-style-type: none"> Must be offered with a single button control for automatic optimization and adjustment of TGC and Receiver Gain to achieve optimal uniformity of image quality and faster scans. This should be demonstrated to the users in Cardiology and vascular exams during technical discussions. 	No Change
<ul style="list-style-type: none"> System must be offered with Color TDI - uses color to display direction and timing of myocardial function. 	No Change
<ul style="list-style-type: none"> System must be offered with Enhanced Tissue Harmonic Imaging should be standard on the system. This should be based on a real - time digital signal storage and phase cancellation technique to enhance axial and Contrast resolution. 	No Change
<ul style="list-style-type: none"> The machine should have minimum hard 500BG disk drive space 	No Change
<ul style="list-style-type: none"> System should have extensive image management capability including thumb nail review, Cine loop editing etc. 	No Change
<ul style="list-style-type: none"> System should have facility to transfer images to an integrated CD writer, without any interfacing. Specify if integrated CD writer is available in your technical quote. 	No Change
<ul style="list-style-type: none"> Print - Should have direct connectivity to Inkjet printer for printing images & report. 	No Change
SYSTEM MUST BE QUOTED WITH THE FOLLOWING BROADBAND TRANSDUCERS	No Change

		<ul style="list-style-type: none"> 1–5 MHz Broadband Adult Echo Transducer for Adult Cardiology imaging. Must have Tissue Harmonic Imaging, Must have either single crystal technology or purewave or matrix technology for excellent Image quality on Difficult to image patients. Must attach original technical data sheet of transducer to specify the above technology used in the transducer. 	No Change
		<ul style="list-style-type: none"> 3–8MHz Broadband Paed Echo Transducer for Pediatric Cardiology imaging. 	No Change
		<ul style="list-style-type: none"> 3–12 MHz Broadband Linear Array Transducer for Vascular, small parts and nerve imaging. Must have Tissue Harmonic Imaging. Biopsy attachment should be supplied. Should attach technical data sheet of transducer to specify. 	No Change
		<ul style="list-style-type: none"> 2–7 MHz Broadband Adult Live 3D TEE Echo Transducer for Adult/Paed Cardiology imaging. Must have Tissue Harmonic Imaging, Must have either single crystal technology or purewave or matrix technology for excellent Image quality on Difficult to image patients. Must attach original technical data sheet of transducer to specify the above technology used in the transducer (Price to be quoted as option) 	Deleted
		System should be supplied with the following peripheral devices :	
		<ul style="list-style-type: none"> Sony Thermal B/W Printer. 	No Change
		<ul style="list-style-type: none"> Dockable cart must have at-least 3 Imaging universal active probe ports with electronic switching facility from key board without probe adapter. 	No Change
			USFDA/European CE (notified body) approved model
	Infusion Pump-(10 in each lab)		Deleted
	Injector		
		<ul style="list-style-type: none"> Installation: Ceiling-mount/pedestal 	No Change
		<ul style="list-style-type: none"> Flow rate:0.3 to 10mL/s 	No Change
		<ul style="list-style-type: none"> Maximum pressure:21bar / 2100kPa / 305PSI 	No Change
		<ul style="list-style-type: none"> Limit of pressure: Programmable 	No Change
		<ul style="list-style-type: none"> Pressure monitoring: Graphical & numerical 	No Change
		<ul style="list-style-type: none"> Bag maximum capacity:500mL 	No Change
		<ul style="list-style-type: none"> Memory capacity (protocols):20 libraries, 4000 protocols 	No Change
		<ul style="list-style-type: none"> Memory capacity (historical & statistics):24000 injections, 300000 events 	No Change
		<ul style="list-style-type: none"> Voltage:230V AC 	No Change
		<ul style="list-style-type: none"> Power frequency:50-60Hz 	No Change
		<ul style="list-style-type: none"> Power consumption:1000VA 	No Change
			Consumable for 100 patients to be supplied
		<ul style="list-style-type: none"> Injector pedestal dimensions / weight (H x W x D):1422 x 750 x 750mm / 75kg 	Deleted
		<ul style="list-style-type: none"> Injector ceiling mount dimensions / weight (H x W x D):1016 x 358 x 503mm / 60kg 	Deleted
		<ul style="list-style-type: none"> Remote console dimensions / weight (H x W x D):355 x 300 x 249mm / 3,5kg 	Deleted
		<ul style="list-style-type: none"> Power unit dimensions / weight (H x W x D):654 x 668 x 356mm / 70k 	Deleted
			Should be capable to type of cath patients ,Neonat to adult ,double head type system

	IVUS (INTRA VASCULAR USG)	Εθυπμεντ νάμε-ΙςΥΣ (INTRA ζΑΣΧΥΛΑΡ ΥΣΓ)	Equipment name-IVUS (INTRA VASCULAR USG) with FFR
		<ul style="list-style-type: none"> The system should be the latest generation of Intra-vascular ultrasound for 3600 image evaluation of coronary and peripheral lumen and can be integrated to cath lab. 	<p>The system should be the latest generation of Intra-vascular ultrasound for 3600 image evaluation of coronary and peripheral lumen and can be integrated to cath lab. IVUS and FFR should be stand alone or integrated machine.</p>
		<ul style="list-style-type: none"> The System should be able to perform coronary and peripheral IVIJS. 	
			Frequency-20-40 Megahertz
		<ul style="list-style-type: none"> The system should have integrated FFR, iFR and iFR Scout 	
		<ul style="list-style-type: none"> Should be a Windows based system capable of accepting phased array and/ or mechanical transducer technology 	
		<ul style="list-style-type: none"> Should be DICOM-3 compatible 	
		<ul style="list-style-type: none"> Should have DICOM storage to CD-R/DVD-R and hospitable network compatible 	
		<ul style="list-style-type: none"> Compatibility with 20 MHz catheters for coronary procedures and 10 MHz catheters for peripheral procedures. Both types of catheters should be approved for sales and available in India 	
		<ul style="list-style-type: none"> Should be accompanied with Flat Panel LCD 18" high quality monitor with keyboard, trackball and mouse or with touch pad 	
		<ul style="list-style-type: none"> Data entry should be possible by keyboard and/or touch screen 	
		<ul style="list-style-type: none"> Hard disk storage space should be sufficient to store at least 20 clinical case studies 	
		<ul style="list-style-type: none"> Should have ECG input on screen 	
		<ul style="list-style-type: none"> Multiple image screen format 	
		<ul style="list-style-type: none"> Availability of automatic and manual measurement of all essential parameters like diameter and areas. Multi screen format for comparison with prior measurements 	
		<ul style="list-style-type: none"> Digital Video loop storage: upto 8 minutes with still frames (Jpeg) with full editing capabilities including offline editing 	
		<ul style="list-style-type: none"> Should have automatic border detection, both lumen and vessel 	
		<ul style="list-style-type: none"> Should have on-line 2D longitudinal display and measurements (seen as longitudinal cut section of the artery) as well as cross-sectional imaging. 	
		<ul style="list-style-type: none"> Should be capable of fully integrating within the Cath-lab systems or mobile 	
		<ul style="list-style-type: none"> Clear visualization of blood flow, colored and improved detection of blood flow; dissections stent apposition etc, Color distinctions for plaque composition 	<ul style="list-style-type: none"> Clear visualization of blood flow, colored and improved detection of blood flow; dissections stent apposition etc, Color distinctions for plaque composition with virtual histology or equivalent and chromaflow or equivalent.
		<ul style="list-style-type: none"> Data entry should be possible by keyboard and/or touch screen 	
		<ul style="list-style-type: none"> Should have ECG input on screen 	
		<ul style="list-style-type: none"> Should be able to asses distal Pressure through device. 	
		<ul style="list-style-type: none"> Display both real time pressure and mean pressure values. 	
		<ul style="list-style-type: none"> Should give Graphical presentation of pressure waves. 	
		<ul style="list-style-type: none"> Should be operator friendly, guide steps to follow for procedure 	
		<ul style="list-style-type: none"> Input power: 200 — 240 VAC; and 50/60 Hz 	

		<ul style="list-style-type: none"> The system should be upgraded to iFR and iFR Scout (Optional, Quote separately) 	
		<ul style="list-style-type: none"> The system should be upgraded with Co registration and vessel enhancement (Optional, Quote separately) 	
		<ul style="list-style-type: none"> Post processing IVUS analysis software 	
		<ul style="list-style-type: none"> Accessories included: Printer (01 No.),CD/DVD Writer Built-in Disposables- IVUS catheters - 3 Nos and pressure wires 3 Nos. Automatic Pullback- 2 	
			Add-Accessories to perform 50 no of patient cases as start up to be provided with the machine.
		<ul style="list-style-type: none"> Prices of all accessories like pull back device; IVUS catheters, FFR wires etc. to be quoted separately for future purchase 	
		<ul style="list-style-type: none"> Training of the departmental staff on-site will be required 	
		<ul style="list-style-type: none"> System should be CE/US FDA approved 	
	OPTICAL COHERENCE TOMOGRAPHY (OCT) SYSTEM		OPTICAL COHERENCE TOMOGRAPHY (OCT) SYSTEM FOR CARDIC PATIENTS
			Should be latest and most advance model of the company.
			Should have 3D reconstruction software.
		1.IVS-1000 system Parameter Specification Note Wavelength range Center:	No Change
		2.1030-1090 Range: $\geq 100\text{nm}$ Light sourceCoherence length $>10\text{mm}$ Light source	No Change
		3.Axial resolution $< \text{m In Air} / \text{FWHM}$ μm Design guaranteed / FWHM μm Minimum Lateral resolution (typ.) 6 Depth of Focus (typ.) 0.1mm	No Change
		4.Working distance 40mm Object lens to focal point Image acquisition speed 100,000 lines per second	No Change
		5. Axial Imaging range $>2.5\text{mm}$ Displayable depth depends on the A-line number and the memory size of the PC.	No Change
		6. Lateral imaging range $>10\text{mm}$ Axial pixel size ≥ 600 A-scan Transverse line size ≥ 256 B-scanB-scan Frame rate ≥ 122 frame/sec @ 512 x 600 Optical output power at the probe $> 4 \text{ mW}$ Peak Power	Add-Accessories to perform 50 no of patient cases as start up to be provided with the machine.
			Equipment should be US FDA approved model
			Imaging catheter should be FDA & European CE approved.
	ACT (AUTOMATED COAGULATION TIMER)	<ul style="list-style-type: none"> ACT machine having at least one test well 	
		<ul style="list-style-type: none"> 2 point clot detection facility to get accurate results (Optional). Parameters- ACT (Mandatory) APTT & PT (Optional). 	
		<ul style="list-style-type: none"> Shall use fresh blood at the bedside. 	
		<ul style="list-style-type: none"> Shall require less than 3 cc of blood per sample 	
		<ul style="list-style-type: none"> Digital Display on Screen of any size. 	
		<ul style="list-style-type: none"> Should work on 180-270V AC as well as batteries. Mains adaptor to be supplied 	

	E.P.LAB(ELECTRO-PHYSIOLOGY) WITH CARDIAC MAPPING SYSTEMS		Deleted
	EXTERNAL PACER WITH DEFIB	<ul style="list-style-type: none"> System should be main as well as inbuilt battery operated with min. of 150-160 mins. of Battery backup. The unit should portable with weight less than 06 Kg. The system should have energy selection of 200 joules or more. The defibrillator must be based on Biphasic technology. The defibrillator charging time should be less than 5 sec. The system should have both manual as well as AED capability. The paddles should have paddle contact indicator for good response during defibrillation. The unit should have facility of Internal defibrillation The unit should have voice prompt during automated defibrillation. The unit should have synchronized cardioversion. The monitor should be 7" or bigger TFT/ EL multicolor display with minimum 3 waveforms The system should have event summery. System should have facility of non-invasive pacing System should be supplied with 5 lead ECG cable. The unit should be supplied with both adult and pediatric paddles Unit should adjustable HR alarms as well as paddles & ECG cable disconnection alarms. The unit should have inbuilt thermal recorder Low battery indicator should be there. 	No Change
		The quoted model must be US FDA/European CE marked.	US FDA Approved model should be offered
		Accessories to be supplied with each machine:	No Change
		- External paddles (adult/paed) – 1 set	No Change
		- ECG cable – 2 nos.	No Change
			Added - Should have external pacing facility with leads
	DUAL CHAMBER TEMPORARY PACEMAKER	<ul style="list-style-type: none"> Should have LCD Screen Display for displaying various parameters Modes : DDD, DOO, DDI, AAI, AOO, VVI, VOO Single and dual chamber Pacing capability Should have low battery indicator Should have safety feature so that pacemaker is not accidentally switched off Electrode type : Unipolar or Bipolar Certification : US FDA & European CE Certified Should work with 9V Duracell battery with backup of minimum 9-10 days Should have Pacing Rate : between 30 and 200 ppm Should have Rapid Atrial Pacing Rate : 80 – 800 ppm Should have Output Amplitude Atrial 0.1-20mA & Ventricular 0.1 – 25mA Should have Pulse Width Atrial 1.0ms & Ventricular 1.5ms Should have Sensitivity Atrial 0.4 – 10mV & Ventricular 0.8 – 20mV 	No Change

		<ul style="list-style-type: none"> Should have pulse width : 1.5ms 	No Change
		<ul style="list-style-type: none"> Should have Sensitivity 	No Change
		<ul style="list-style-type: none"> Atrial 0.4V – 10mV & Ventricular – 0.8V – 20mV 	No Change
		<ul style="list-style-type: none"> Should have weight less than 700gm 	No Change
	SINGLE CHAMBER TEMPORARY PACEMAKER	<ul style="list-style-type: none"> Should be a single chamber pacemaker (Temporary) for bradycardia treatment before, during or after a surgery. 	No Change
		<ul style="list-style-type: none"> Stimulation burst and permanent stimulation should be available for high frequency stimulation. 	No Change
		<ul style="list-style-type: none"> Should be compact & easy-to-operate device, particularly suitable for emergency treatments. 	No Change
		<ul style="list-style-type: none"> Safety features, including automatic lead and battery check. 	No Change
		<ul style="list-style-type: none"> Should have continuous monitoring of the battery voltage. 	No Change
		<ul style="list-style-type: none"> Should give an acoustic signal in the event of lead malfunction. 	No Change
		<ul style="list-style-type: none"> Should have transparent cover for parameter protection. 	No Change
		<ul style="list-style-type: none"> Should have shock and water-resistant housing. 	No Change
		<ul style="list-style-type: none"> Should have back up pacing during battery change. 	No Change
		<ul style="list-style-type: none"> Should have Modes AOO, AAI, VOO, VVI. 11. 	No Change
		<ul style="list-style-type: none"> Should have pacing rate 40-180 ppm. 	No Change
		<ul style="list-style-type: none"> Should have fast pacing (Burst rate) of 80-800ppm. 	No Change
		<ul style="list-style-type: none"> Should have pulse Amplitude of 0.1-17V 	No Change
		<ul style="list-style-type: none"> Should have sensitivity 1.0-20mV 15. Should have minimum battery backup> 200 hours. 	No Change
		<ul style="list-style-type: none"> Should have safety certificate from a competent authority USFDA and European CE certified 	No Change
	High End C-arm with Table & other accessories		Deletd
	Cautery		Deleted
3. NON INVASIVE LAB SECTION			
Department	Equipment		
NON INVASIVE LAB SECTION	HOLTER SYSTEM- Advance Analyzers- two (five recorder for each analyzer)	<ul style="list-style-type: none"> The Holter monitor system comprising of the following: - 	
		a) Patient recorders.	No Change
		b) Main analyser with C.D. player.	No Change
		c) Monitor at least 17" size.	No Change
		d) Compatible laser printer.	No Change
		<ul style="list-style-type: none"> System should be advanced microprocessor based. 	No Change
		<ul style="list-style-type: none"> The system should have minute-by-minute and beat by rapid scanning time. The operator should be able to do post scanning review and editing. 	No Change
		<ul style="list-style-type: none"> System should have capability of acquisition and analysis of minimum 3 channels of ECG. 	No Change
		<ul style="list-style-type: none"> System should have facility to perform arrhythmia analysis on any of the two out of three ECG channels simultaneously to verify arrhythmia and exclude artifacts. 	No Change
		<ul style="list-style-type: none"> System should have the facility to separately the 24 hours rhythm profile for different type of arrhythmia in graphic and tabular form. 	No Change
		<ul style="list-style-type: none"> Should have facility for RR/Heart rate variability in time domain and frequency domain with spectral analysis. 	No Change
		<ul style="list-style-type: none"> System should be analyses ST segment in at least three channels simultaneously over 24 hours and should be able to give ST trend over 24 hours period. 	No Change

		<ul style="list-style-type: none"> System should have facility for pacemaker detection and analysis. 	No Change
		<ul style="list-style-type: none"> It should must have facility of QT analysis 	No Change
		<ul style="list-style-type: none"> The unit must have enhanced ST analysis 	No Change
		<ul style="list-style-type: none"> Print outs in various sizes and formats. Comprehensive report should include narrative summary, 24 hours Quantitative tabular summary of different types of arrhythmia detailed ST segment analysis and pace marker analysis. 	No Change
		<ul style="list-style-type: none"> The system should have quality certification by some standard certifying agency like ISO 9000/CE & US FDA 	No Change
		<ul style="list-style-type: none"> True 12 lead digital Holter recorders having facility to record uncompressed data 	No Change
		<ul style="list-style-type: none"> Suitable UPS system of rated capacity. 	
			Should be USFDA approved model
	ABP Monitoring	AUTOMATIC BP MONITOR	
		<ul style="list-style-type: none"> User-friendly small footprint & barrier-free design 	No Change
		<ul style="list-style-type: none"> One-touch measurement 	No Change
		<ul style="list-style-type: none"> "Torque Controlled Belt drive Method" (TCBM), cuff fastening method with high accuracy and durability 	No Change
		<ul style="list-style-type: none"> Antibacterial arm cuff cover (included as standard) 	No Change
		<ul style="list-style-type: none"> Optional extension communication board (RS-232C and/or Bluetooth) 	No Change
		<ul style="list-style-type: none"> Reliable high speed printer with easy paper replacement 	No Change
		<ul style="list-style-type: none"> Various print formats available upon user request 	No Change
		<ul style="list-style-type: none"> Irregular Heart Beat (IHB) indicated on printout 	No Change
			No Change
		24 HRS AMBULATORY BP MONITOR	No Change
		<ul style="list-style-type: none"> Compact and portable, user-friendly interface, easy to use 	No Change
		<ul style="list-style-type: none"> Patient range: adult, pediatric, neonate 	No Change
		<ul style="list-style-type: none"> 24 hours ambulatory NIBP monitoring function, up to 350 groups of ambulatory NIBP data can be recorded for once. 	No Change
		<ul style="list-style-type: none"> Perfect combination of automatic and manual measurement method, up to 300 groups of data can be recorded for once by manual measure. 	No Change
		<ul style="list-style-type: none"> High-definition color TFT display, strong visibility 	No Change
		<ul style="list-style-type: none"> By data review interface such as "data list", "trend graph", "big font", NIBP data is clear at a glance 	No Change
		<ul style="list-style-type: none"> Display of low power prompt, alarm, error message and time 	No Change
		<ul style="list-style-type: none"> Supply two kinds of unit: mmHg / kPa 	No Change
		<ul style="list-style-type: none"> Display interface can be switched between Chinese and English 	No Change
		<ul style="list-style-type: none"> Parameter alarm dispose function is optional 	No Change
		<ul style="list-style-type: none"> Communicate with PC, PC software can achieve data review, measured results analysis, view of trend graph, reports printing and other functions 	No Change
		Software features:	
		<ul style="list-style-type: none"> Connect to the device by USB interface. 	No Change
		<ul style="list-style-type: none"> Download NIBP measure result from the terminal device. 	No Change
		<ul style="list-style-type: none"> Display of scoop-shape trend graph, filling-type trend graph, histogram, pie chart, correlation line graph. 	No Change
		<ul style="list-style-type: none"> Edit every piece of NIBP data, and add annotation to it. 	No Change
		<ul style="list-style-type: none"> Edit basic information, doctor's advice, NIBP status instruction, current medicine taken information, etc. 	No Change
		<ul style="list-style-type: none"> Support report printing and print preview. 	No Change
		IR THERMOMETER	No Change
		Technical specifications :	
		<ul style="list-style-type: none"> Model No: FORA IR10 	No Change
		<ul style="list-style-type: none"> Dimension: 141(L)x 45(W)x 37(H) mm 	No Change
		<ul style="list-style-type: none"> Weight: 50g 	No Change
		<ul style="list-style-type: none"> Power source: 1 x CR2032 battery 	No Change
		<ul style="list-style-type: none"> Displayed Temperature Range: 0°C to 50° C (32°F to 122°F) 	No Change
		<ul style="list-style-type: none"> Display Resolution: 0.1°C/ 0.1°F 	No Change

		<ul style="list-style-type: none">• Accuracy: Meets the accuracy requirements specified in ASTM E1965-98	No Change
		<ul style="list-style-type: none">• Temperature Unit: °C or °F	No Change
		<ul style="list-style-type: none">• Operating Temperature Range: 10°C to 40°C (50°F to 104°F)	No Change
		<ul style="list-style-type: none">• Operating Humidity: 95% RH or less	No Change
		<ul style="list-style-type: none">• Memory Capacity: 20 measurements	No Change
			Should be USFDA approved model
	TILT TABLE (ELECTRIC OPERATED)	Size 6.5x 2	No Change
		Footboard position with table upright 5 (12.7cm) above floor	No Change
		Table height in horizontal position 32 (81cm)	No Change
		Features:	No Change
		<ul style="list-style-type: none">• Motorized tilt from horizontal to 90° upright with wire remote control	No Change
		<ul style="list-style-type: none">• Step-on patient loading with table in upright position	No Change
		<ul style="list-style-type: none">• 525 lb. patient weight capacity	No Change
		<ul style="list-style-type: none">• Ultra-stable during tilt motion and in any table position	No Change
		<ul style="list-style-type: none">• Standard 220 volt operation with emergency battery back-up	No Change
		<ul style="list-style-type: none">• 5" locking casters and lightweight table for easy transport	No Change
		Table includes:	No Change
		<ul style="list-style-type: none">• Built-in footboard	No Change
		<ul style="list-style-type: none">• Tabletop pad	No Change
		<ul style="list-style-type: none">• Patient handgrips	No Change
		<ul style="list-style-type: none">• Restraint straps	No Change
		<ul style="list-style-type: none">• Remote control	No Change
		Table movements:	No Change
		<ul style="list-style-type: none">• Table tilt range: 0° (horizontal) to 90° upright	No Change
		<ul style="list-style-type: none">• Motorized motions foot switch control	No Change
		<ul style="list-style-type: none">• Tilt speed: ~4°/sec (~20 sec to full stroke)	No Change
		Patient weight capacity:	No Change
		<ul style="list-style-type: none">• 525 lb. (238kg)	No Change
		Electrical:	No Change
		<ul style="list-style-type: none">• 220 VAC with battery backup	No Change
			Should be USFDA approved model
			Advanced Patient Trolley with transport ventilator plus monitor
<ul style="list-style-type: none">• Dimensions Trolley Mount (cart) 76.5cm x 132 cm x 72 cm	No Change		
<ul style="list-style-type: none">• Power supply 100 - 240 VAC, 50/60 Hz., 2.3 A max	No Change		
<ul style="list-style-type: none">• Operation time with fully charged batteries up to 120 minutes, minimum 45 minutes	No Change		
<ul style="list-style-type: none">• Ventilator E-vent Electronically controlled, electrically driven.	No Change		
<ul style="list-style-type: none">• Operating modes	No Change		
<ul style="list-style-type: none">• Standard: Manual/Spontaneous Volume Controlled Ventilation Option: Pressure Controlled Ventilation Option: Pressure Support Option: Synchronized Volume Controlled Ventilation w/PS (SIMV/PS)	No Change		
<ul style="list-style-type: none">• Breathing frequency 4 to 60 bpm	No Change		
<ul style="list-style-type: none">• Max. minute volume (MV) 99 L/min	No Change		
<ul style="list-style-type: none">• Positive end-expiratory pressure (PEEP) 0 - 20 cmH2O	No Change		
<ul style="list-style-type: none">• Inspiration/expiration ratio (Ti:Te) 4 : 1 to 1 : 4	No Change		
<ul style="list-style-type: none">• Pressure limiting (Pmax) 15 - 70 cmH2O	No Change		
Tidal Volume (Vt)	No Change		
A. 20 - 1400 mL in Volume Control	No Change		
B. 20 - 1100 mL in SIMV/PS	No Change		

		<ul style="list-style-type: none"> Inspiratory pause (Tip:Ti) 0 - 50 % 	No Change
		<ul style="list-style-type: none"> SIMV inspiratory time (Tinsp) 0.3 - 4.0 sec 	No Change
		<ul style="list-style-type: none"> Inspiratory pressure (Pinsp) PEEP + 5 to 65 cmH2O 	No Change
		Inspiratory flow (InspFlow)	No Change
		A. 10 - 75 L/min in Volume and Pressure Control	No Change
		B. 10 - 85 L/min in Pressure Support	No Change
		<ul style="list-style-type: none"> Pressure Support Level (PPS) PEEP + 3 to 20 cmH2O 	No Change
		<ul style="list-style-type: none"> Min. frequency for 3 - 20 bpm and "OFF" 	No Change
		<ul style="list-style-type: none"> Trigger 2 - 15 L/min 	No Change
		<ul style="list-style-type: none"> Range of fresh gas flow tubes 0.00 to 12.0 L/min 	No Change
		<ul style="list-style-type: none"> Monitoring Continuous monitoring of inspiratory O2 concentration, breathing frequency, tidal volume, minute volume, peak airway pressure and PEEP, as well as selection of mean or plateau pressure. 	No Change
		<ul style="list-style-type: none"> Volume of entire compact breathing system 1.7 Liter + bag 	No Change
		<ul style="list-style-type: none"> Gas supply O2, N2O & Air 	No Change
	Advance TMT Machine	The System should be state of the art with advanced features of Stress Testing.	USFDA approved
		The machine should give multicolor display on minimum 17" monitor.	No Change
		The unit should have preset protocols such as Bruce, Modified Bruce, Naughton, Ellested, Balke etc., and facility to add any number of user defined protocols.	No Change
		The unit should have facility of Resting ECG interpretation.	No Change
		The machine should take printouts with and without grid depending stationary chosen by user.	No Change
		The unit must have automatic control with artifact display to correct/poor electrode contact possibility.	No Change
		The machine should have a set up for user's preference to record and view test as per his choice for the parameters such as ST delay, Speed, protocol, gain, lead display etc.	No Change
		The unit should display and print 4 times enlarged median complex of his choice or with Maximum/minimum ST depression/elevation.	No Change
		The unit should have facility of comparison by superimposition of current enlarge median complex with pre exercise median complex of any lead.	No Change
		The unit should have ST level bar graph for current and reference for all 12 leads.	No Change
		The unit should be able to display all the 12 leads together and also be able to give other display options such as 4 leads display, 12 leads median complex showing ST level and ST slope at any point of time during the test & review.	No Change
		It should also display 12 Leads, 2X 6, 2X6 Lead + rhythm trace plus other configurations.	No Change
		The unit should preferably have distinguished display of lead having maximum depression.	No Change
		The unit should have facility of base line correction.	No Change
		The unit should have facility of J point, Post J point setting and ISO electric point setting as per the need of user and patient requirement.	No Change
		The unit should have manual or automatic NIBP measurement.	No Change
		The unit should have trend report of R wave amplitude, J amplitude, ST level, ST slopes of all the leads & trend of HR, RPP, METs, BP and PVC/min.	No Change
		It should have 3D of the superimposed complex.	No Change
		The unit must have audio alarm or beep for HR increase than target HR, ST depression and also for measuring BP at different intervals during the test.	No Change
		The unit should constantly display parameters such as HR, BP, METs, Protocol, Stage, stage time and Exercise time etc.	No Change
		The system must have arrhythmia, management allows complexes recognized, classified and restored within time, axis, post review capability.	No Change
		The unit should be able to take printout on high-resolution laser printer or thermal printer on plain/pre-printed stationary.	No Change
		<ul style="list-style-type: none"> User should have the choice of vertical or horizontal report formats for convenience of comparison of medians. 	No Change

		<ul style="list-style-type: none"> Machine should be able to give full bandwidth raw ECG on the screen as well in print outs. 	No Change
		<ul style="list-style-type: none"> The unit should have frequency response from 0.05 Hz to 150 Hz. 	No Change
		<ul style="list-style-type: none"> The sensitivity should be from 0.25 to 10 cm/mV. 	No Change
		<ul style="list-style-type: none"> The unit should have ECG sweep speeds of 5, 12.5, 25, 50 & 100 mm/sec. 	No Change
		TREADMILL	No Change
		<ul style="list-style-type: none"> The treadmill should be only imported such as original Track master USA or equivalent/brand. 	No Change
		<ul style="list-style-type: none"> The treadmill should be compatible and controlled by main Stress Test Unit. 	No Change
		<ul style="list-style-type: none"> The treadmill speed range should be from 0 - 15 km/hr or more. 	No Change
		<ul style="list-style-type: none"> The grade of the belt should be from 0-22 % or more. 	No Change
		<ul style="list-style-type: none"> The walking area of the belt should be approx. 1500 mm x 500 mm or more. 	No Change
		<ul style="list-style-type: none"> The unit should not weigh more than 200 Kgs. 	No Change
		<ul style="list-style-type: none"> The unit should have emergency stop switch. 	No Change
		The complete unit must be US FDA and CE approved and must comply with IEC 60-601.	The complete unit must be US FDA approved.
	Defib with external pacer with crashcart	<ul style="list-style-type: none"> System should be main as well as inbuilt battery operated with min. of 150-160 mins. of Battery backup 	No Change
		<ul style="list-style-type: none"> The unit should portable with weight less than 06 Kg. 	No Change
		<ul style="list-style-type: none"> The system should have energy selection of 200 joules or more. 	No Change
		<ul style="list-style-type: none"> The defibrillator must be based on Biphasic technology. 	No Change
		<ul style="list-style-type: none"> The defibrillator charging time should be less than 5 sec. 	No Change
		<ul style="list-style-type: none"> The system should have both manual as well as AED capability. 	No Change
		<ul style="list-style-type: none"> The paddles should have paddle contact indicator for good response during defibrillation. 	No Change
		<ul style="list-style-type: none"> The unit should have facility of Internal defibrillation 	No Change
		<ul style="list-style-type: none"> The unit should have voice prompt during automated defibrillation. 	No Change
		<ul style="list-style-type: none"> The unit should have synchronized cardioversion. 	No Change
		<ul style="list-style-type: none"> The monitor should be 7" or bigger TFT/ EL multicolor display with minimum 3 waveforms 	No Change
		<ul style="list-style-type: none"> The system should have event summery 	No Change
		<ul style="list-style-type: none"> System should have facility of non-invasive pacing 	No Change
		<ul style="list-style-type: none"> System should be supplied with 5 lead ECG cable. 	No Change
		<ul style="list-style-type: none"> The unit should be supplied with both adult and pediatric paddles 	No Change
		<ul style="list-style-type: none"> Unit should adjustable HR alarms as well as paddles & ECG cable disconnection alarms. 	No Change
		<ul style="list-style-type: none"> The unit should have inbuilt thermal recorder 	No Change
		<ul style="list-style-type: none"> Low battery indicator should be there. 	No Change
		<ul style="list-style-type: none"> The quoted model must be US FDA/European CE marked. 	Should be USFDA approved model
		Accessories to be supplied with each machine:	No Change
		- External paddles (adult/paed) - 1 set	No Change
		- ECG cable - 2 nos.	No Change
		- Trolley/Crash cart	No Change
			Added - Should have external pacing facility with leads
	Master Screen PFT System	Flow/Volume gas measurements	No Change
		Flow/Volume	No Change
		Type: Pneumotach	No Change
		Range:0-20 L/s	No Change
		Resolution: 10 mL/s	No Change
		Accuracy: 0.2-12 L/s, ±2%	No Change
		Resistance:< 0.5 cmH2O/L/s (0.05 kPa/L/s) @ 10 L/s	No Change

		CMRR:60 dB at 50 Hz	No Change
		Volume	No Change
		Type:Digital integration	No Change
		Range:0–20 L	No Change
		Accuracy: ±5 mL	No Change
		CO analyzer	No Change
		Type:Electro chemical cell	No Change
		Range:0–0.4%	No Change
		Accuracy:0.0003%	No Change
		He analyzer	No Change
		Type:Thermal conductivity	No Change
		Range:0–9.5%	No Change
		Accuracy:0.05%	No Change
		Flash multi-gas*	No Change
		Type: Non-dispersive,Infrared, thermopile	No Change
		Range:0–0.33% CO ,0–0.33% CH4 ,0–0.33% C2H2†	No Change
		Resolution: 0.0005% CO ,0.0005% CH4 ,0.0005% C2H2†	No Change
		Accuracy: ±0.003% CO ,±0.003% CH4 ,±0.003% C2H2†	No Change
		Transducers	
		Mouth pressure (PM)	No Change
		Type: Piezo resistive	No Change
		Range:±204.5 cmH2O (20 kPa)	No Change
		Accuracy:±2%	No Change
		Electrical requirements (typical system)	No Change
		Voltage:100–240 VAC	No Change
		Frequency:100–240 VAC	No Change
		Phase:Single	No Change
		Power:Single phase ,Max. 520 VA	No Change
		Ground leakage current:< 300µA at rated voltage	No Change
			Should be USFDA approved model
	Portable Spiro meter	Tests performed	No Change
		Tests:FVC, SVC, optional pulse oximetry	No Change
			No Change
		Volume range:0.1–8 L (gold standard turbine 0.1–9.99 L)	No Change
		Flow range:0.2–15 L/s	No Change
		Accuracy:±/-3% to ATS recommendations	No Change
		Spirometry PC software	No Change
		Requirements:Windows® 2000, XP, 7	No Change
		SpO₂ module (not in the U.S.)	No Change
		General	No Change
		SpO ₂ range/accuracy:0–100% ±2 digits	No Change
		Heart range/accuracy:18–300 BPM ±1 digit	No Change
		Test recording time:20 sec–60 min	No Change
		Data recording:SpO2: 3x %SpO2 per sec,BPM: 3x HR per sec	No Change
		Storage:2,000+ patient tests including flow/volume loops and volume/time graphs	No Change
		Power supply:Input: 100–240 VAC 50–60 Hz,Output: 5 V 2.0 A	No Change
		Battery pack:Rechargeable lithium polymer 3.7 V 1,600 mAh	No Change
		Dimensions:10.03" x 4.72" x 1.38" (8 cm x 12 cm x 2 cm),Transducer: 1.9" x 2.36" x 3.54" (50 mm x 60 mm x 90 mm)	No Change
		Transport and storage conditions	

		Operation temperature:0-40 °C (32-+104 °F)	No Change
		Weight, excluding transducer:0.44 lb (200 g)	No Change
		Operating humidity:30-90%, non-condensing	No Change
		Storage and transport temperature:-20-+70 °C	No Change
		Storage and transport humidity:10-90% RH	No Change
4. IMAGING DEPARTMENT			Should be USFDA approved model
	CT Scan (256 Slice)		CT Scan (256 Slice) dual energy Spectral CT Scan with FFR
			The system should be latest state of art ,128 or more rows of detector with acquisition of 256 slice per rotation. The System should be DICOM-ready with true isotropic volume acquisition and submillimeter resolution. The system should be the top end machine in this category of the manufacturer.
IMAGING DEPARTMENT		Gantry:	
		a. The gantry should be provided with user friendly control panels on both sides	No Change
		b. Gantry aperture should be 70 cm or more in diameter	No Change
		c. Maximum scan field of view should be 50cm or more	No Change
		d. The scan time for a 360 Degree rotation should be 0.35 second or lower	No Change
		e. The gantry tilt of minimum 25 degree which can be operated both from gantry	No Change
		and console room.	No Change
		X-Ray Generator:	No Change
		a. High frequency generator with output of at least 100 KW.	No Change
		b. The mA range available should be 50mA to 800mA or better.	No Change
		X-Ray Tube:	No Change
		a. Anode heat storage capacity of 8.0 MHU or higher or the tube with direct cooling	a. Anode heat storage capacity of 7.5 MHU or higher
		b. Tube cooling rate of 1600 kHU per minute or more.	No Change
		c. Tube voltage 80kV to 140kV or better.	No Change
		Patient Table:	
		a. Carbon fiber table top with a metal free scan able range of 200 cm or more	No Change
		b. Patient load capacity of 200 kg or more	No Change
		c. Minimum horizontal table speed at least 100 mm/sec	No Change
		d. The vertical table travel range should be 35 cms or more	No Change
		Spiral Scan:	
		a. The detector should allow simultaneous acquisition of 256 or more slices per	No Change
		rotation with slice thickness of 0.625mm or lower for all types of applications	No Change
			No Change
		b. The scan time for a 360 Degree rotation should be 0.35 second or lower	No Change
		c. Bolus Triggered or bolus chase Spiral acquisition should be possible	No Change
		d. Slice increment - specify scan and selectable slice thickness	No Change
		e. Single Continuous spiral scan time should be at least 60 sec or more.	No Change
		Image Resolution:	
		a. The system should have a high contrast resolution of at least 17 lp/cm for axial	No Change
		and spiral scan 0%MTF with full 50cm FOV	No Change

	b. Specify low contrast resolution of the system achieved with 20cm CATPHAN phantom. Specify surface dose, mAs, slice thickness and HU used.	No Change
	Data Acquisition System:	No Change
	a. Solid state detector: specify the detector material	No Change
	b. Specify number of detector rows & number of elements in each row	No Change
	c. The detector should allow simultaneous acquisition of 256 or more slices per rotation with slice thickness of 0.625mm or lower for all types of scans and applications	The detector should allow simultaneous acquisition of 256 or more slices per,Should have at least 128 rows of detectors. No Change
		Dual Energy System
	d. The detector should have 700 or more effective elements / channels per slice (this number should not include the reference elements / channels and channels required for calibration)	No Change
	e. The scanner should have inbuilt pediatric protocols	No Change
	f. Dynamic CT Angiography ; 4D CT DSA , time- resolved perfusion with minimum range of 30 cm.	No Change
	Image Reconstruction:	
	a. Real Time reconstruction speed should be 35 images/sec or more	No Change
	b. Display Matrix: 512 x 512	No Change
	c. Reconstructed slice thickness should be up to 10mm and should be freely selectable.	No Change
	Operator Console:	
	a. Registration, scheduling and protocol selection	No Change
	b. Real-time Multi-Planar Reconstruction (MPR) of secondary views, with viewing perspectives in all planes including curved and orthogonal MPR	No Change
	c. CT Angiography: MIP and MinIP	No Change
	d. 3D Volume Rendering (VRT), 3D Surface Shaded Display	No Change
	e. CT number display, window width, window level	No Change
	f. Topogram display	No Change
	g. Cine display	No Change
	h. HRCT lung	No Change
	i. Automated Bone Removal	No Change
	j. Parallel evaluation of multiple ROI in circle, irregular and polygonal forms.	No Change
	k. Statistical Evaluation for area/ volume, S.D, Mean/Max and Histograms.	No Change
	l. Distance & angle measurement, freely selectable positioning of coordinate system, grid and image annotation.	No Change
	m. 2-D post processing, including image zoom and pan, image manipulations, including averaging, reversal of grey-scale values, and mirroring.	No Change
	n. Image filter functions, including smoothing algorithm.	No Change
	o. Posterior Fossa Optimization for reduction of beam hardening artifacts.	No Change
	p. Metal artifact Reduction Software.	No Change
	Monitor of minimum 3 MP resolution& 3 button mouse.	No Change
	Add:- Scan Field of View (Dual Energy)	No Change
	Cardiac Imaging	No Change
	Z coverage	No Change
	Dual Energy	No Change
	Dual energy virtual non calcium image	No Change
	Dual energy packages	No Change
	Dual Energy Applications	
	Monoenergetic imaging	No Change
	Contrast vs Blood differentiation	No Change

		Virtual NCCT head	No Change
		Direct Neuro CTA	No Change
		Vascular Plaque characterization	No Change
		Lung Perfusion	No Change
		Gout Imaging	No Change
		Calculi Characterization	No Change
		Pulmonary Embolism	No Change
		Dual energy virtual non calcium image	No Change
		Advanced Lung analysis	No Change
		Automatic multimodality & multivendor radiation dose tracking (dose watch)	
		Segmentation	
		Cardiac	
		Myocardial perfusion	
		Complete liver segmentation (automated)	
		We are enclosing herewith tender documents from AIIMS New Delhi & PGI Chandigarh for specification of 256 Slice CT Scanner	Deleted
		We are enclosing herewith neutral technical specification for Neonatal HFO Ventilator	Deleted
		PAGE	Deleted
		Generator must be of latest technology with high frequency/inverter technology for constant output	Deleted
			The system should be USFDA approved.
			Complete system with Online UPS having back up not less than 45 mins
			Dry view camera for good quality high end CT film printing with 50 packets of films
			Lead lining of Patient entry & connecting to console door to be done.
			Lead glass of sufficient size, lead apron 06 nos to be provided
	Ultrasound Machine with three transducer		Ultrasound Machine
		1. The system should have the following image modes: 2D, M mode, PW, Tissue Harmonic mode, Color Doppler, Power Doppler mode.	No Change
		2. The system should have minimum 1500 or more digital processing channels and 256 or more grey shades.	No Change
		3. The system should have a very high dynamic range of 170dB or more and should	No Change
		Independently selectable in B & M mode.	No Change
		4. The system should have a very high frame rate for B-mode & Colour mode. Maximum frame	No Change
		rate should be greater than 350 fps for B-mode & colour mode.	No Change
		5. The system should be able to support all type of transducers (Convex, Endocavitary, Linear,	No Change
		Phased array and Intraoperative Transducers). Frequency range of all transducers should be 2-	No Change
		14Mhz.	No Change
		6. The system should have Advanced measurement packages for all applications.	No Change

		7. The system should an integrated high resolution TFT/LCD of 15 inches or more with facility of tilt and swivel facility along with convenient grip.	No Change
		8. The system should have minimum three active universal ports & two parking ports. Active	No Change
		Ports can be directly selectable from the control panel.	No Change
		9. The system should have scanning depth in the range of 2- 28cms.	No Change
		10. The system should have a very high capacity of Hard Disc Drive min.80GB or 1000 images for storage of images.	No Change
		11. The system should have inbuilt CD/DVD R/W and USB ports for image export.	No Change
		12. The system should have zoom facility both in real time and frozen image and it should be Minimum 6 times or more in both real time & frozen modes.	No Change
		13. The system should have minimum 6 steps transmitting focusing (transmit focal zones) and adjustable gain should be available up to 100 dB for B-mode & M-mode.	No Change
		14. The system should have Directional Power Doppler to define the low blood flow directions.	No Change
		15. The system should have HD-flow/Advanced dynamic flow to acquire the blood flow with	No Change
		Directions in the deeper region at a very high frame rate.	No Change
		16. The system should have automatic optimization in B-mode and auto adjustment of Doppler	No Change
		Base-line & velocity range.	No Change
		17. The system should have B-mode image steering & Color Doppler steering.	No Change
		18. The system should have the facility of on-screen adjustment for Dynamic range, Frequency	No Change
		Selection, Presets, Name of the patient, etc.	No Change
		19. The system should have the facility to view the Thumbnail images and system can be	No Change
		Programmed for various users with the facility of user passwords.	No Change
		20. The system should have the Trapezoid scan facility for linear probes.	No Change
		21. The system should have Compound Imaging and Contrast Harmonic Imaging.	No Change
		22. The system should be US-FDA or European CE approved product.	The system should be the top end machine in this category of the manufacturer and should USFDA approved.
		23. The system should have the facility of having direct image print out through a B/W thermal Printer.	No Change
		24. The system should be upgradeable to real time 3D (4D) package. Please quote optionally for	No Change
		Convex volume probe.	No Change
		25. System should be offered with the following probes and accessories:	No Change
		(a) Convex probe with frequency range of 3.0-6.0 Mhz.	No Change
		(b) TV/TR probe with frequency range of 5.0-7.5 Mhz. And minimum field of view of	Deletd
		140 degree.	No Change
		(c) Linear probe with frequency range of 6.0-11.0 Mhz.	No Change
		(d) B/w Thermal Printer with 100 paper rolls.	No Change
		Probes must have multifrequency selection and THI.	No Change
		26. Essential accessories: Black & White Thermal printer and color laser printer, Suitable UPS	No Change
		with one hour backup, mobile cart with transducer holder, jelly bottle holder and space for	No Change
		printer	No Change
	Digital X-ray 800 mA		Deleted
	Portable X-ray Machine (Digital 100 mA)	Operational requirements	Portable X-ray Machine (100mA)
		• Should be compact, lightweight, easily transportable	

		Mobile radiographic unit suitable for bedside x-rays.	
		• The unit must have an effective braking system for	
		Parking and transport. The tube stand must be fully	
		counterbalanced with rotation in all directions	
		* Exposures with remote control should be available.	
		* The unit must have cassette storage facility for all size	
		of cassettes	
		Technical Specification	
		The Generator:	
		• Should be microprocessor controlled high frequency,	No Change
		Output 10 KW or above.	No Change
		• It should have a digital display of mAs and kV.	No Change
		• KV range should be 40kV to 90kV	No Change
		* mA range should be 100 mA or more	No Change
		X-Ray Tube	
		• Rotating anode with at least 3000 rpm and focal spot	No Change
		• size should be 1 mm. or less.	No Change
		• Light Beam Collimator of multi leaf type with auto cut off switch	No Change
		• The exposure release switch should be detachable	No Change
		with a cord of sufficient length as per ICRP recommendation	US FDA/CE(notified body)/BIS
	CR System		Deleted
5. DIALYSIS	Dialysis Machine		Deleted
	CRRT	Should have four (4) roller pumps.	No Change
		Should have 8 inch or above high resolution LCD color display.	No Change
		Should have 2 individual bag heating systems.	No Change
		Should have integrated heparin pump.	No Change
		Should hold 20 or above litres of fluid.	No Change
		Should be on gravimetric measuring principle.	No Change
		Should be able to perform the following modes of treatment:	No Change
		ContinuousVeno-VenousHaemofiltration	No Change
		Continuous Veno-Venous Haemo-Diafiltration	No Change
		Slow Continuous Ultrafiltration	No Change
		Membrane Plasma Separation	No Change
		Hemo Perfusion	No Change
		High Volume ContinuousVeno-VenousHaemofiltration	No Change
		ContinuousVeno-VenousHemodialysis	No Change
		Should store at least 48 hours of data on a continuous mode	No Change
		The machine should be capable of transferring all treatment specific data directly into Patient Data Management System / Hospital Information Management System / Electronic Medical Record. It should be the complete responsibility of the vendor to provide complete inter-facing between the machine and Hospital Information Management System.	No Change
		The machine should be protected against electric shock (i.e., defibrillation, type CF)	No Change
		The cost of Cassette, haemofilter and plasma filter to be quoted separately	No Change
		Cost of consumables should be valid for 5 years	No Change
		Should have US FDA approval.	No Change
		• In case it is not clearly mentioned that the equipment complies completely, then during assessment, the item involved will score "0". If the equipment partially complies, it must be specified as to what extent it does not do so.	Start up-50 no of patient cases consumable to be supplied.
6. EMERGENCY			
	Fowler Bed with mattress		Deleted
	ECG Machine		Deleted
	Defibrillator	Defibrillator (AED)	High End DEFIBRILLATOR WITH INTERNAL PADDLES (adult & pediatric) & external paddles (adult & pediatric)
		1. Biphasic, Manual and AED with voice prompt, compact and light weight.	No Change
		2. Energy selection 5J to 200J in steps.	No Change
		3. Momentary energy selection access on front panel.	No Change
		4. Should have adult and paediatric paddles integrated on same handle.	No Change

		5. Monitor should display selected and delivered energy.	No Change
		6. Charging time maximum 5 secs for 200J.	No Change
		7. Should have battery backup for 50 discharges of 200J.	No Change
		8. Should have ECG inputs through paddles or 5 lead cables.	No Change
		9. Should have display for selected ECG input source	No Change
		10. Should have an inbuilt thermal recorder.	No Change
		11. Should supply 2 bottles of jelly, 12 roll of thermal paper.	No Change
		12. Should supply three pairs of AED pads and the prices of AED Pads should be quoted separately in financial bid.	No Change
		13. Should work on 220VAC +/-10%, 50 Hz.	No Change
			Should have external pacing facility with leads
		14. US FDA and European CE Approved model should be offered.	US FDA Approved model should be offered, if US FDA approved model is not available/services not available than only European CE with notified body may offered
	Minor OT table		Deleted
	Crash cart	1. Overall size shall be more than 900mm L x 500mm W x 1500mm H.	No Change
		2. The crash cart should be made of 25.4mmx18G Stainless steel tubular frame work.	No Change
		3. Shall have Epoxy / Anti-Microbial powder paint inside and out	No Change
		4. Should have dual push handles on either side	No Change
		5. Should have S.S. shelves, six colored removable bins & two polystyrene lockable storage units	No Change
		with three drawers each.	No Change
		6. Facility to carry ECG Monitors, Defibrillators etc on open areas at top centre and bottom	No Change
		shelves.	No Change
		7. Should have Stainless steel saline rod fixed with.	No Change
		8. Two accessory mounting brackets to mount accessories anywhere without the need of prethreaded	No Change
		holes.	No Change
		9. Crash cart should be mounted on 12.5 cms dia non-rusting swiveling castor wheels. Two	No Change
		having locking arrangement.	No Change
		10. Oxygen cylinder stand epoxy powder coated, on one side	No Change
			ISO/BIS Certified model
	Suction Machine electrical	<ul style="list-style-type: none"> Technical Specification: 	
		<ul style="list-style-type: none"> Engineering moulded ABS plastic box Capacity: -700mm Hg ±10 Vacuum, 35 ltrs/min. 	No Change
		<ul style="list-style-type: none"> Pump Type: 	No Change
		<ul style="list-style-type: none"> Double diaphragm pump Jars: 	No Change
		<ul style="list-style-type: none"> Wide mouthed 2 x 2 Ltrs(Polycarbonate) with two-way changeover lever and safety jar with mechanical/electronic overflow motor shut-off system and bacterial filter. 	No Change
		<ul style="list-style-type: none"> Tubing : 8 mm ID x 2 mtr (silicon) 	No Change
		<ul style="list-style-type: none"> Vacuum Gauge: 6.25 cms(2.5 inch). 0-760mm Hg calibration Power: 220 V AC, 50/60 Hz, 125 watts. (110V on request) 	No Change
		<ul style="list-style-type: none"> Dimension: 39 x 55 x 119 cms. 	
		<ul style="list-style-type: none"> Weight: 18 kg (with trolley) 	No Change

		<ul style="list-style-type: none"> Additional feature: Eurovac Elite is adaptable to hold Swiss Medela Autoclavable safety jar with easy filter replacement. Controls on working height with extra pedal-operatable switch. 	No Change
		<ul style="list-style-type: none"> Trolley with nonmarking castors has the brake facility. 	No Change
		<ul style="list-style-type: none"> The user has the choice to use 1 ltr. jars singly or in tandem. 	No Change
		<ul style="list-style-type: none"> It can run on inverter also. Units in: ABS Plastic Body. 	No Change
		<ul style="list-style-type: none"> Application: Operation theatre and surgery 	No Change
			USFDA/CE(notified body)/BIS approved model
	Mobile BP instrument with Stand and wheel	<ul style="list-style-type: none"> Should have ON and OFF provision for mercury reservoir. 	No Change
		<ul style="list-style-type: none"> Should have a measuring range from 0 to 300 mmHg. 	No Change
		<ul style="list-style-type: none"> Should be provided with adult arm cuffs of size medium & large and paediatric cuff. 	No Change
		<ul style="list-style-type: none"> The control valve should have a knurled thumb control device. The leak rate should not exceed 10 mm of mercury per minute. 	No Change
		<ul style="list-style-type: none"> The manometer scale markings and graduations should be permanent and clearly visible and filled with pigments. 	No Change
		<ul style="list-style-type: none"> The internal diameter of the manometer glass tube should be 4.1 ± 0.1 mm and the thickness not less than 2 mm. 	No Change
		<ul style="list-style-type: none"> All plastic parts, if any used should not crack, flake, peel or disintegrate in normal use. 	No Change
		<ul style="list-style-type: none"> The inflating rubber bag should be capable of withstanding an internal pressure of 450 mmHg without leaking. 	No Change
		<ul style="list-style-type: none"> The inflating bulb should be soft and should not have any joints or ridges. 	No Change
		<ul style="list-style-type: none"> The mercury used should be clean, double distilled and of 99.9% purity. 	No Change
			USFDA/CE(notified body) approved model
	Advanced Patient Trolley with transport ventilator		Advanced Patient Trolley with transport monitor
		Gas spring assisted backrest.	No Change
		Dual side hi-lo foot pedals.	No Change
		Dual height push / pull pedals.	No Change
		Two way foot operated tilt adjustment from any height.	No Change
		Fifth wheel steering system.	No Change
		Integral folding IV drip rod.	No Change
		Detachable folding monitor shelf / notes holder.	No Change
		Oxygen cylinder holder.	No Change
		Lateral X-ray facility.	No Change
		Pressure reducing mattress.	No Change
		Integral fold down stainless steel safety sides.	No Change
		20-25 cm. anti static castors.	No Change
		Central braking with four corner activation.	No Change
		Safe working load : 300 kg.	No Change
		Tilt range ± 18 degree.	No Change
		Height range 59-89 cm.	No Change
		Patient surface width >65 cm.	No Change
		Overall width >80 cm.	No Change
		Overall length >210 cm.	No Change
		<ul style="list-style-type: none"> CE & FDA approved. 	No Change
	BIPAP		Deletd
	Adult/Paediatric Ventilator		Deletd
	Modular Emergency Trolley	Emergency Patient Trolley with Oxygen :	
		<ul style="list-style-type: none"> Gas spring assisted backrest. 	No Change
		<ul style="list-style-type: none"> Dual side hi-lo foot pedals. 	No Change
		<ul style="list-style-type: none"> Dual height push / pull pedals. 	No Change
		<ul style="list-style-type: none"> Two way foot operated tilt adjustment from any height. 	No Change
		<ul style="list-style-type: none"> Fifth wheel steering system. 	No Change
		<ul style="list-style-type: none"> Integral folding IV drip rod. 	No Change
		<ul style="list-style-type: none"> Detachable folding monitor shelf / notes holder. 	No Change
		<ul style="list-style-type: none"> Oxygen cylinder holder. 	No Change

		<ul style="list-style-type: none"> • Lateral X-ray facility. • Pressure reducing mattress. • Integral fold down stainless steel safety sides. • 20 – 25 cm anti static castors. • Central braking with four corner activation. • Safe working load : 300 kg. • Tilt range ± 18 degree. • Height range 59 – 89 cm. • Patient surface width > 65 cm. • Overall width > 80 cm. • Overall length >210 cm. 	No Change No Change No Change No Change No Change No Change No Change No Change No Change No Change
		<ul style="list-style-type: none"> • CE & FDA approved. 	USFDA/European CE (notified body) approved
	Nebulizer		Nebulizer(Ultrasonic type)
		<ul style="list-style-type: none"> • Should be lightweight, portable and compact. • Should have a dust filter. • Should be able to deliver a flow rate ≥ 7 lpm • Should have air pressure ≥ 35 psi. • Should have a check valve to protect the device against contamination due to backward inhalation • Should be compatible for continuous use • Should works on 200-240Vac/50Hz. • Should be supplied with nebulisation accessory kit with mask for adult and paediatric – 2 nos. each • Nebulisation mask for adult and paediatric – 10 nos. each 	No Change No Change No Change No Change No Change No Change No Change No Change
			USFDA/European CE (notified body) approved
	Pulse Oximeter		Deletd
7. OPD			No Change
OPDs	Sphygmomanometer with stand	<ul style="list-style-type: none"> • Height adjustable type • Base with heavy duty castors • Spiral tube • Measurement: 0-300mmHg • Accuracy: +/-3mmHg • Sub-division: 2mmHg 	No Change No Change No Change No Change No Change No Change
			BIS/ISO approved model
	Stethoscope	<ul style="list-style-type: none"> • Chestpiece : Dual head nonchill rim & diaphragm • Diaphragm : Tunable diaphragm • Binaural : Dual-leaf spring encased at 15° angle • Operating temperature range : 0° C ~ 40° C (32°F ~ 104° F) • Operating humidity : Less than 95% RH • Storage temperature range : -10° C ~ 50° C (14°F ~ 122° F) • Storage humidity : Less than 95% RH. 	No Change No Change No Change No Change No Change No Change No Change
			BIS/ISO approved
	Weighing machine Digital	<ul style="list-style-type: none"> • Technology: electronic • Display type: with digital display • Weighing capacity: 250 kg, 180 kg (551.16 lb) • Readability: kg (0.2205 lb) • Platform Size: 360 x 300mm 	No Change No Change No Change No Change No Change
	Height Measuring Scale	Measuring range 20 - 205 cm Graduation 1 mm Gross Weight 2.65 kg Length 14.25 inch Width 4.75 inch Height 25.75 inch Moving type Portable	No Change No Change No Change No Change No Change No Change No Change
			BIS/ISO approved
	Patient Examination Couch	Cabinets Drawer 1 Drawer With Lock Surface Finish Powder Coated Size L1830xW560xH840 mm Color Off White + Blue/Brown/Beatch/Gray Material CRC Sheet	No Change No Change No Change No Change No Change No Change
			Head tilt facility
			Should have paper roll option with 10 no of paper rolls
			BIS/ISO approved
	ECG Machine		Deletd

	Pulse Oximeter (Small type)		Deletd
	View box	Sheet Thickness 2 mm	No Change
		X-ray View size 14 * 17 inches	No Change
		Overall size 17 * 20 * 2 inches	No Change
		Sheet Material Acrylic	No Change
		Power 12 V, 50 - 60 Hz	No Change
		Current 2 Amp	No Change
		Bulb 264 High Glossy LED Bulbs	No Change
		Parts Heavy Duty Switch & Socket Used	No Change
		Safety Shock Proof Mechanism	No Change
		Holding Plastic Clips for X-ray film Holding	No Change
		Handling Light Weight & Portable	No Change
			BIS/ISO approved
8. PROCEDURE ROOM			All Equipment Deleted
	OT table		Deleted
	OT Light		Deleted
	Monitor		Deleted
	Defibrillator		same as other specification mentioned for defibrillator with Pacing
	Electrical Suction		same as other specification mentioned for electrical suction
Echo lab			
	Advanced 3D+4D Echo with 3D-TEE probe, adult cardiac probe, paediatric cardiac probe & neonatal cardiac probe		Advanced 3D+4D Echo with adult cardiac probe, paediatric cardiac probe ,USFDA approved and top end model in the category by the manufacturer.
ECHO lab		<ul style="list-style-type: none"> The system must be latest generation, highest end & technologically advanced Digital 4D (Live 3D) Echocardiography system. Any other model, other than the highest end and latest version is liable for rejection. 	No Change
			System should have capacity to be upgraded when new facilities/ capabilities are available.
		<ul style="list-style-type: none"> System must be offered with a minimum of 500000 digital processed channels. Original technical data sheet should be enclosed in technical bid to support the number of channels on the systems. If not mentioned, Please attach a letter from manufacturer along with the technical bid clearly stating the digital processed channels of the offered system. 	No Change
			System should have Frame rate- 2500/ sec or higher
		<ul style="list-style-type: none"> System must have adult cardiology transducer with either single crystal technology or pure wave technology or matrix for excellent greyscale image quality on difficult to image patients. Please mention the technology used in the transducer. Original technical data sheet should be enclosed in technical bid to support the crystal technology. 	Single crystal technology or pure wave technology or matrix technology.
		<ul style="list-style-type: none"> System must be offered with a minimum 19 inch high resolution flat panel medical grade display monitor with infinite position adjustments. Company should provide wider monitor if available. 	System must be offered with a minimum 17 inch high resolution flat panel medical grade display monitor with infinite position adjustments. Company should provide wider monitor if available. Monitor should be LED/ OLED, OLED will be preferably
		<ul style="list-style-type: none"> System should have at-least four Imaging universal active probe ports with electronic switching facility from key board without probe adapter. 	No Change
		<ul style="list-style-type: none"> System should be capable of supporting second generation 4D(Live 3D) matrix transducer capable of supporting a minimum of 2000 elements for exceptional 4D (live 3D) Echo, 4D(Live 3D) zoom, triggered full volume and triggered 3D colour volume with electro cautery suppression. 	No Change
		<ul style="list-style-type: none"> System should support board band probes spanning a frequency of 1-15 MHz. 	No Change

		<ul style="list-style-type: none"> Image storage facility on in build hard disc or MOD/CD/DVD-RW facility should be available. In built hard disk with capacity of 5TB. System should have extensive image management capability including thumb nail review, Cine loop editing etc. 		No Change
		<ul style="list-style-type: none"> System must be offered with speckle reduction Imaging: Image processing technique to remove speckles and clutter artifacts. 		No Change
		<ul style="list-style-type: none"> System should have 4D (Live 3D) Echocardiography capability with color flow Imaging 		No Change
		<ul style="list-style-type: none"> System should be capable of scanning depth of 30cm. Scanning Depth should be clearly mentioned in the technical quoted If not mentioned Please attach a letter from manufacturer along with the technical bid clearly stating the scanning depth of 30 cm in the offered system. 		No Change
		<ul style="list-style-type: none"> Should be able to perform advanced quantification measurements like strain & Strain rate quantification. Should measure the myocardial velocity and derives the strain rate and strain along user-defined M-lines, Capable of drawing up to 3 M-lines at a time, Capable of sub-dividing each M-line into 8 sub-regions or according to user-defined sub-region sizes, Point of interest tool obtains values from any point on the Mmode display. In addition to the tissue Doppler based strain system should have 2D based strain like VVI, AFT and TMQ should be offered. These should be offered both on the system and on a licensed workstation. OFF-CART workstation (both licensed hardware and licensed software) should be quoted and highlighted in the technical bid. 		No Change
		<ul style="list-style-type: none"> 2D speckle tracking. 		No Change
		<ul style="list-style-type: none"> System must be offered with user friendly high resolution user interface touch panel of minimum size of 10.5 inch or intuitive keyboard. User friendliness will be given preference. 		No Change
		<ul style="list-style-type: none"> Should be able to perform MPR views for quantification from 3D Imaging on volume measurements like LV volumes, Ejection fraction from 3D Image, etc. Also should offer synchronicity indicates to measure and compare timing of maximum contraction of LV volumes to determine those patients who will best benefit from CRT system. Should display global LV volume and should provide simultaneous display of 17 regional volume waveform. This should be offered both on the system and on a licensed work station (both licensed hardware and licensed software) should be offered and highlighted in the technical bid. 		No Change
		<ul style="list-style-type: none"> The system should have the facility of displaying the three planes of the 3D data set. 		No Change
		<ul style="list-style-type: none"> Contrast Harmonic Imaging should be offered as standard on the system, with optimization for LOW and HI MI applications. Should also have facility of LOW MI with triggered replenishment Imaging. 		No Change
		<ul style="list-style-type: none"> Integrated stress Echo facility to perform Stress Echo exams. 		No Change
		<ul style="list-style-type: none"> Should have the state of the art Transmit real time compound Imaging Technology with Multiple transmitted lines of sight, wherein multiple coplanar Images from different viewing angles are obtained and combined into a single compound Image at real-time frame rates for improved visualisation. Should demonstrate and show multiple transmitted line of sight in linear probes. 		No Change
				Colour printer-01, Thermal printer-01 with 10 no of thermal paper rolls
				Suitable capacity UPS for unreputed patient cases during power faliure with atleast 30 min backup.
	Advanced 2D Echo machine with colour Doppler with strain Imaging having adult cardiac probe, paediatric cardiac probe & neonatal cardiac probe	<ul style="list-style-type: none"> Latest generation Electronic Phased array Colour Doppler system with Minimum 1200 Electronic independent channels. 		No Change
				Added- TEE probe ,
				Added- stress Echo Package
		<ul style="list-style-type: none"> 256 gray shades for sharp contrast resolutions 3.3 Adult Trans thoracic Cardiac Probe to be supplied which should be latest generation wide band transducers. 		No Change

		<ul style="list-style-type: none"> Harmonic Imaging- System should have Harmonics on all the probes following modes in harmonic with separate setting for: 	No Change
		<ul style="list-style-type: none"> Trapezoidal Image on B / Colour. 	No Change
		<ul style="list-style-type: none"> Automated Gain control for additional level of flexibility to image quality control. 	No Change
		<ul style="list-style-type: none"> Real time high frequency 2D for higher resolution. 	No Change
		<ul style="list-style-type: none"> Advanced 3D imaging package with multiplanar views & surface and volume rendering tools. 	No Change
		<ul style="list-style-type: none"> Frame rate should be 1000 FPS or more 	Should have Frame rate- 1500/sec or higher
		<ul style="list-style-type: none"> High-definition acoustic zoom for enlarging sections of 2D and Colour flow images with more acoustic information for greater clarity and detail while maintaining an optimal frame rate. 	No Change
			Single crystal technology or pure wave technology or preferably matrix technology.
		<ul style="list-style-type: none"> Modes –2D, M-Mode, Steerable PW/CW Doppler, Colour Doppler, and High Definition Colour flow with Colour power angio imaging and full Colour Doppler echocardiography system.2D Duplex, and Colour Doppler, colour Power Angio, Directional power angio and colour panoraimic . 	
		<ul style="list-style-type: none"> Monitor should be 15" or more, high-resolution Colour Monitor. Tilt and Swivel monitor should be able to view in all angles and all light conditions. 	No Change
		<ul style="list-style-type: none"> Colour Flow Imaging for a) Increased lateral & spatial resolution. b) Detection of even subtle areas of turbulence, displaying a more physiological blood flow appearance without loss of frame rate. c) Colour flow with capability of automatically picking up colour flow as a function of focal depth 	No Change
		<ul style="list-style-type: none"> Tissue Colourization (B-Colour) for improved contrast resolution 	No Change
		<ul style="list-style-type: none"> Application software for Adult, Pediatric, Fetal and Peripheral Vascular (All application package should be built into the system) 	No Change
		<ul style="list-style-type: none"> User defined system and application presets for multi-user department. 	No Change
		<ul style="list-style-type: none"> Minimum 4.8 GB optical disc drive / 80 GB hard drive for image storage and retrieval. (Standard with system) 	No Change
			External Hard disc of 1 TB should be provided.
		<ul style="list-style-type: none"> Three or more transducer ports. 	No Change
		<ul style="list-style-type: none"> Facility for high definition digital acquisition, review and editing of complete patient studies. 	No Change
		<ul style="list-style-type: none"> Facility of Real Time perfusion studies with contrast (micro bubbles) for liver applications. 	No Change
		<ul style="list-style-type: none"> PC based Peripheral system comprising of dedicated computer at least 100 GB storage space (Hard disc) with 1 GB RAM or more with a Microprocessor speed of more than 3.00 GHz, frame grabber incorporated (All Software Inclusive) interfaced with the echocardiography machine with DVD writer and a high quality Colour Laser printer. CD/DVD produced should be playable on any system. 	No Change
		<ul style="list-style-type: none"> Anatomical M mode, M-Mode. 	No Change
		<ul style="list-style-type: none"> Power input to be 220-240VAC, 50Hz fitted with Indian plug 	No Change
			System should have Tissue Harmonic Imaging Analysis
			System should have Contrast Echo Facility
			System should have Tissue Doppler Imaging/TVI with Advanced Analysis software
			Colour printer-01,Thermal printer-01 with 10 no of thermal paper rolls
			Suitable capacity UPS for unreputed patient cases during power faliure with atleast 30 min backup.

	Advanced 2D Echo with color doppler with stress Echo and TEE probe, having adult cardiac probe, paediatric cardiac probe		Deleted
	Portable ECHO 2d with adult cardiac probe and paediatric cardiac (Emergency , Medical and surgical ICU)		Portable ECHO 2d with adult cardiac probe and paediatric cardiac (for -Emergency , ICUs)
		<ul style="list-style-type: none"> The system must be fully digital technology equipment 	
		<ul style="list-style-type: none"> System must be offered with abdominal and thoracic ultrasound imaging, Echocardiography and should be upgradeable to TEE Imaging. 	<ul style="list-style-type: none"> System must be offered with Echocardiography and having facility of TEE Imaging.
		<ul style="list-style-type: none"> The System should not weigh more than 10 kgs. 	Deleted
		<ul style="list-style-type: none"> System must be offered with a minimum of 200000 digital processed channels per image frame. Technical data sheet should be enclosed in technical bid to support the number of channels on the systems. If not mentioned Please attach a letter from manufacturer along with the technical bid clearly stating the dynamic range of the offered system. 	No Change
		<ul style="list-style-type: none"> Convex probe should be with either single crystal technology or purewave technology or high density for excellent Image quality on Difficult to image patients. Please mention the above technology used in the transducer. System offered with normal transducers on convex are liable for rejection. 	No Change
		<ul style="list-style-type: none"> System must be offered with a minimum 15 inch High Resolution Flat Panel Display monitor with monitor resolution of 1050 x 1400. 	No Change
		<ul style="list-style-type: none"> System must be offered with frequency compounding facility/Equivalent Technology. Processing technology in technical bid should be highlighted. 	No Change
		<ul style="list-style-type: none"> System must be offered with needle visualization tool to enhance the presentation of the needle without degrading the surrounding tissue. 	No Change
		<ul style="list-style-type: none"> System must be offered with Speckle Reduction Imaging to remove speckles and clutter artifacts Should have the state of the art Transmit Real Time Compound Imaging Technology with Multiple transmitted lines of sight, wherein Multiple Coplanar Images from different viewing angles are obtained and combined into a single compound Image at realtime frame rates for improved visualization. This should be demonstrated in convex, linear and endocavity probes. 	No Change
		<ul style="list-style-type: none"> System must be offered with a very high dynamic range of at least 170 db to pick up subtle echoes. Dynamic range in db must be clearly mentioned in the technical quote. If not mentioned Please attach a letter from manufacturer along with the technical bid clearly stating the dynamic range of the offered system. 	No Change
		<ul style="list-style-type: none"> Frequency processing facility for the transducers should be 1 - 15 MHz This must be available without the need for frequency switching. 	No Change
		<ul style="list-style-type: none"> System must be offered with Eight-slide physical pot control adjustment of TGC curve. 	No Change
		<ul style="list-style-type: none"> Independently selectable gain Control in Lateral plane. (Better technology can also be offered). 	No Change
		<ul style="list-style-type: none"> Triplex Imaging should be standard on the system. 	No Change
		<ul style="list-style-type: none"> System must be offered with a 2D frame rate of at least 750 frames/second. Acquisition frame rate should be clearly mentioned in the technical quote If not mentioned Please attach a letter from manufacturer along with the technical bid clearly stating the dynamic range of the offered system. Must be offered with a single button control for automatic 01 Portable Colour Doppler Ultrasound Machine with 2D Doppler optimization and adjustment of TGC and Receiver Gain to achieve optimal uniformity of image quality and faster scans. This should be demonstrated to the users during technical discussions. 	No Change
		<ul style="list-style-type: none"> System must be offered with Enhanced Tissue Harmonic Imaging should be standard on the system. This should be based on a real - time digital signal storage and phase cancellation technique to enhance axial and Contrast resolution. 	No Change

		<ul style="list-style-type: none"> The should have minimum hard 80GB disk drive space 	No Change
		<ul style="list-style-type: none"> System should have extensive image management capability including thumb nail review, Cine loop editing etc. 	No Change
		<ul style="list-style-type: none"> System should have facility to transfer images to an integrated CD writer, without any interfacing. Specify if integrated CD writer is available in your technical quote. 	No Change
		<ul style="list-style-type: none"> Print – Should have direct connectivity to printer for printing images 	No Χηάγγε
			Should have thermal printer for printing images with 10 no of thermal paper rolls
			In built battery back up 0f 30 mis
			UPS of suitable capacity with battery backup of 30 mins
10. LABORATORY			
LABORATORY	Biochemistry analyser		Deleted
	Haematolyteanalyzer	<ul style="list-style-type: none"> It should be fully automated 5 Part differential hematologyanalyzer based on flow Cytometry, Light scattering and Peroxidase staining technology.Instrument should offer automatic startup, shut down and sample analysis which should be suitable for animal and human samples. 	No Change
		<ul style="list-style-type: none"> It Should have five discrete analysis modes CBC, CBC+ DIFF, CBC +Retic, CBC+Retic+Diff&Retic only. 	No Change
		<ul style="list-style-type: none"> Should give 33 or more parameters i.e.WBC, RBC, HGB, HCT, MCV, MCH,MCHC, CHCM, RDW, HDW, CH,CHDW, PLT, MPV,PDW, PCT, %RETIC, # RETIC , MCVr, CHCMr,RDW, HDWr, Chr, CHDW, A solute &% values for NEUT, LYMPH,MONO,EOS, BASO, LUC, morphology results (user definable) like WBC : LeftShift , Atypical Lymph , Immature Granulocytes, RBC: NRBC, ANISO,MICRO, MACRO, RBC Ghosts. 	No Change
		<ul style="list-style-type: none"> Should have the capability to perform veterinary application with minimum 	No Change
		of 20 pre programmed species & 30 programmable slots.	No Change
		<ul style="list-style-type: none"> The veterinary multispecies software should be user friendly. 	No Change
		<ul style="list-style-type: none"> Should have an Auto Sampler with capacity of 150 sample tubes at a given time. A single sample rack should be able to cater different tube sizes. 	No Change
			No Change
		<ul style="list-style-type: none"> Should have high throughput of 120samples per hour or more in CBC and CBC / Diff. mode & 74 samples per hour or more in Retics mode. 	No Change
		<ul style="list-style-type: none"> Should have multi-channel analysis for better resolution & reproducibility's Like Dual differential count for WBC Platelets – Should have Dual angle Light Scatter RBC – Should have light Scatter HGB – Should have photometric and direct cellular measurement Retics – Should have on board, light scatter (fluorescent dye) for Reticulocytes. 	No Change
		<ul style="list-style-type: none"> Should have clot detection facility. 	No Change
		<ul style="list-style-type: none"> Should have on-board reagents facility with maximum of up to 7 reagents on board and automatic reagent inventory management. 	No Change
		<ul style="list-style-type: none"> Should have capability of crosschecking of parameter such as WBC,MCHC, Hb. 	No Change
		<ul style="list-style-type: none"> Should had have extensive linearity as- 	No Change
		<ul style="list-style-type: none"> WBC - 0.02- 400 x 10³ /ul 	No Change
		<ul style="list-style-type: none"> RBC - 0 - 7.0 x 10⁶ /ul 	No Change
		<ul style="list-style-type: none"> PLT - 5 - 3500 x 10³ /ul 	No Change
		<ul style="list-style-type: none"> HGB - 0- 22.5 g/dl 	No Change
		<ul style="list-style-type: none"> RETIC - 0.2- 24.5% 	No Change
		<ul style="list-style-type: none"> Should be free of tubing's & pinch valves ensuring low maintenance requirement. 	No Change
		<ul style="list-style-type: none"> Should have FDA approved capability of running CSF fluids. 	No Change
		<ul style="list-style-type: none"> Carryover of < or = to 1 % for all parameters. 	No Change

		<ul style="list-style-type: none"> Sample volume required in all modes not to exceed 175ul. Dead volume required < 300 ul. 	No Change
		<ul style="list-style-type: none"> Should be capable of reporting unique additional parameters such as CHrreticulocytesHGB measurement to aid in anaemia treatment. 	No Change
		<ul style="list-style-type: none"> Should have extensive QC features 	No Change
		<ul style="list-style-type: none"> Should have comprehensive Data management such as User friendly Windows based software 	No Change
		<ul style="list-style-type: none"> Network integration possible with lab information system Database storage capacity of 	No Change
		<ul style="list-style-type: none"> 10,000 records including graphics 	No Change
			System should be interface with computer & printing facility with printer.
			UPS of suitable capacity with battery backup of 30 mins
	Electrolyte Analyzer	<ul style="list-style-type: none"> Should be able to measure sodium and potassium. Should have a measuring method of Ion Selective Electrode (ISE). 	No Change
			All equipment / analysers should have interface for a central console for transmitting and report generation in an efficient manner.
		<ul style="list-style-type: none"> Should be able to measure sodium and potassium in serum and body fluids. 	No Change
		<ul style="list-style-type: none"> Should have a throughput of minimum 50 samples per hour 	No Change
		<ul style="list-style-type: none"> Should have separate electrode for sodium and potassium 	No Change
		<ul style="list-style-type: none"> Resolution should be at least 0.1mmol/litre for each parameter 	No Change
		<ul style="list-style-type: none"> Should have automatic calibration, 1 and 2 point calibration, 2 point time bound Calibration 	No Change
		<ul style="list-style-type: none"> Should have QC memory storage of at least 2 levels 	No Change
		<ul style="list-style-type: none"> Stand-by mode user controlled and automatic 	No Change
		<ul style="list-style-type: none"> Should have a measuring range for sodium 40 to 200 mmol/l, potassium 1.5 to 10 mmol/l 	No Change
		<ul style="list-style-type: none"> It should require 100 micro liter or lesser for whole blood serum 	No Change
		<ul style="list-style-type: none"> It should have only one reagent module for all standards and wash solutions and waste also should be collected in the same module 	No Change
		<ul style="list-style-type: none"> It should have only one cleaning reagents for electrodes and daily maintenance 	No Change
		<ul style="list-style-type: none"> Should have printing facility 	No Change
		<ul style="list-style-type: none"> Should supply reagent pack for 1000 tests, one internal filing solution of 125 ml, two cleaning solution of 15 ml and one quality control of 10 ml 	No Change
		<ul style="list-style-type: none"> Should have an alpha numeric display 	No Change
		<ul style="list-style-type: none"> Should have a memory of at least 20 samples 	No Change
		<ul style="list-style-type: none"> Should work on 200-240Vac 50Hz power supply 	No Change
		<ul style="list-style-type: none"> Should be supplied with off line pure sine wave UPS of sufficient capacity for a minimum back up of 30 minutes 	No Change
	Microbiology		
	Auto Clave Vertical	<ul style="list-style-type: none"> Water level indicator, pressure gauge, steam release cock, spring loaded safety valve, Triple walled construction, all the three walls made of thick high grade stainless steel sheet of SS-304 grade or better. 	No Change
		<ul style="list-style-type: none"> The lid made of stainless steel sheet, Unit fitted with Double safety radial locking system with paddle lifting device, made of MS chrome plated, with built-in safety valve, pressure gauge, pressure release valve and water level indicator. 	No Change
		<ul style="list-style-type: none"> Pressure adjustable from 5psi to 20 psi with an accuracy of +/- 1 psi, with automatic pressure control switch. 	No Change

		<ul style="list-style-type: none"> Supply complete with stainless steel basket, chord and plug. 	No Change
		<ul style="list-style-type: none"> Working Chamber: Height x Internal Diameter: 700-800 mm x 350 – 400 mm approximately. 	No Change
		<ul style="list-style-type: none"> Electrically heated by immersion type heaters bearing ISI mark, to work on 220 voltssingle phase 50 cycles. 	No Change
		<ul style="list-style-type: none"> Steel stand for keeping autoclave drum on it. 	No Change
		<ul style="list-style-type: none"> The pressure inside the chamber is variable from 5 psi. to 20 psi. 	No Change
		<ul style="list-style-type: none"> Working Temperature : 121° C, Hydrostatic Pressure: 2.5 kg/cm sq. (35 psi), stainless steel steam release valve, spring loaded safety valve of stainless steel (grade SS-304),water inlet and water valves, water level indicating gauge glass with stainless steel 	No Change
		<ul style="list-style-type: none"> Guard, pressure gauge, electrical control box, fitted with toggle switch, indicating Neonlamps and steam release valve, foot paddle lifting device. 	No Change
		<ul style="list-style-type: none"> Automatic Pressure Control Switch - To cut-off the current from the heating elements,when the desired/ set pressure value level is attained inside the chamber and restarts the mechanism once the pressure inside the chamber falls from the desired level. 	No Change
		<ul style="list-style-type: none"> Automatic Water Cut-off Device – To protect the heaters from running dry and to ensure that the machine is automatically switched off in case the desired water level falls below the prescribed level. 	No Change
		<ul style="list-style-type: none"> Two spare rubber gaskets and electric element must be provided for each autoclave. 	No Change
		<ul style="list-style-type: none"> Temperature Indicator to indicate the temperature inside the chamber. 	No Change
		<ul style="list-style-type: none"> Timer with Alarm System - To regulate the sterilization time of the media to be sterilized with a buzzer. 	No Change
	Centrifuge(16 tube)		Centrifuge(24 tube or higher)
		<ul style="list-style-type: none"> Max. Speed >5000 rpm 	No Change
		<ul style="list-style-type: none"> Max. rcf>3000 	No Change
		<ul style="list-style-type: none"> Speed Indicator Digital 	No Change
		<ul style="list-style-type: none"> Speed regulator Step less preferred 	No Change
		<ul style="list-style-type: none"> Count down timer Up to 1 hour 	No Change
		<ul style="list-style-type: none"> Accessories Swing out rotor head 8 x ~15 mL with graduated glass tube Angle rotor head 8 x ~15 mL with polypropylene Tube 	No Change
		<ul style="list-style-type: none"> Warranty Preferably 3 year 	No Change
		<ul style="list-style-type: none"> Voltage / frequency input According to Indian options andgood tolerance to the fluctuation 	No Change
	Compound Microscope (Trinocular with Light source system and Fungus free lens)		No Change
		<ul style="list-style-type: none"> Illumination- 12V100W halogen lamp, Built-in lens for uniform distribution of light throughout the field for digital imaging and suitable blue and Neutral Density filters 	No Change
		<ul style="list-style-type: none"> Sidentopf-type Trinocular tube with light path selector of 100:0, 0:100 	No Change
		<ul style="list-style-type: none"> Eyepiece with minimum a Field of view of 22/23mm and Diopter adjustment facility on both the eyepieces. 	No Change
		<ul style="list-style-type: none"> Right Hand Stage holder with two specimen holder with refocusing stage mechanism 	No Change
		<ul style="list-style-type: none"> Minimum Reading 1 micron, coarse motion torque adjustable, refocusing function 	No Change
		<ul style="list-style-type: none"> Sextuple nosepiece to accommodate 6 objectives at a time. 	No Change
		<ul style="list-style-type: none"> Plan Achromat objective for 4X, 10X, 20X, 40X& 100x Oil Spring-loaded. 	No Change
		<ul style="list-style-type: none"> AchromatSwingout Condenser 0.9 N. A. 	No Change
		<ul style="list-style-type: none"> Spare Halogen lamp 	No Change
			Should have microphotography facility in at least one unit.

	Automatic Elisa reader		Deletd
	Auto coagulometer (for PT- INR/ APTT/ D-Dimer)		Semi coagulometer (for PT- INR/ APTT/ D- Dimer)
		<ul style="list-style-type: none"> The equipment should be a random access system. 	No Change
		<ul style="list-style-type: none"> The instrument should be able to provide simultaneous measurement of Clotting, Chromomeric and Immunological assays. 	No Change
			Preferably requires facility for usual coagulation parameters at least PT,APTT INR ,d-Dimer Factor VIII, vw-Factor assay facility
		<ul style="list-style-type: none"> Principle based on change in viscosity by electromagnetic clot detection system with steel ball oscillation or multi wave length scanning and sample liquid-sensing technology. 	No Change
		<ul style="list-style-type: none"> Technology should be insensitive to LIPEMIC, COLOURED, HEMOLYSED plasma and turbid reagent. 	No Change
		<ul style="list-style-type: none"> It is able to calculate low levels of factor VIII and weak clot. 	No Change
		<ul style="list-style-type: none"> The instrument should be able to use primary sample tube. 	No Change
		<ul style="list-style-type: none"> The instrument should be capable of continuous sample & reagent loading during the run. 	No Change
		<ul style="list-style-type: none"> The instrument should be able to add, delete, rerun tests during the run. 	No Change
		<ul style="list-style-type: none"> Availability of 30 programmed and up to 60 Test methodologies should be provided. 	No Change
		<ul style="list-style-type: none"> Minimum 96 sample positions with all STAT facility should be provided. 	No Change
		<ul style="list-style-type: none"> Refrigerated reagent positions of a minimum of 30 all at 15c should be available. 	No Change
		<ul style="list-style-type: none"> Instrument should have in-built Barcode reader for positive identification of sample and reagents i.e. name, stability, volume, position etc. 	No Change
		<ul style="list-style-type: none"> Instrument should be able to detect automatically positive sample and reagent positions. 	No Change
		<ul style="list-style-type: none"> Possibility of Auto Rerun and Auto Redilution of samples should be available. 	No Change
		<ul style="list-style-type: none"> Positive sample and reagents level detection should be provided. 	No Change
			No Change
		<ul style="list-style-type: none"> Instrument should have online sample reagents monitoring. 	No Change
		<ul style="list-style-type: none"> Instrument should have data storage capacity of 600 patient includes 12 results per patient. 	No Change
		<ul style="list-style-type: none"> Multi batch Q.C. Capacity on levy- Jennings graphs should be available in the system. 	No Change
		<ul style="list-style-type: none"> Flexibility to rerun, add a test or delete a test, handling of stat sample at any time should be provided. 	No Change
		<ul style="list-style-type: none"> Automatic dilution for sample and calibrators should be possible. 	No Change
		<ul style="list-style-type: none"> Provision for bi-directional LIS connectivity should be available. 	No Change
		<ul style="list-style-type: none"> Minimum test menu available should include PT, APTT, Fibrinogen, TT, LA, All Factors, ATIII, Heparin, PC, PS, PLG, AP, APCR, DDI, FDP, FM, vWf 	No Change
			USFDA/CE appoved(notified body)
	Auto Analyzer should have Cardiac Marker Facility	<ul style="list-style-type: none"> System Type- 	Well integrated Chemical, Immunoassay, preferably also ISE system with
		<ul style="list-style-type: none"> Discrete, open, Automated, Random Access, Patient Prioritized Clinical Chemistry Analyzer. 	Onboard Parameters -
		<ul style="list-style-type: none"> Throughput 	with highest sensitivity and precision criteria.
		<ul style="list-style-type: none"> 200 Photometric tests per hour and 400 tests per hour with ISE* (*optional ISE with Na+, K+, Cl-, Li+ 	

•	Cardiac Marker Facility including hs-Troponin, BNP,NT-proBNP, d-Dimer, CK-MB Isoenzyme
• Upto 50	Thyroid panel including FT3,FT4 , TSH3 rd Generation,TBG etc
• Sample type	Metabolic panel including Homocysteine,Cystatin-c,25-OHVit-D3,VitB12
• Serum, Plasma, Urine, other	Iron profile Ferritin,TIBCetc.
• Programmable Parameters	Drug assay Digoxin,Amiodarone etc.
• Unlimited	Immunoglobulin assay
• Analytical Methods	And
• 1-Point, 2-Point, Rate-A, Rate-B, Direct Potentiometry	• Usual Chemistries preferably with ISEs eg Na+,K+,CL ₋ .
• Calibration	• Should provide starting Reagent shelf stock for 10000 routine tests and specified tests on board along with necessary calibrators ,standards and controls.
• Linear, Non-Linear, Multipoint	
• Photometer	Hs-Troponin assay specification-
• Static Photometer	Sample vol.-10mcl
• Absorbance Range	Assay range preferably 3.0-25000pg/ml
• 0-2.5 Absorbance	LoB - 1.0pg/ml
• Light Source	LoD-2.0pg/ml
• Halogen Lamp	Linearity certificate of recognised institute has to be provided in support of their claim as per the specifications.
• Optics	
• 8 Filters (340-700nm) 340, 405, 505, 546, 578, 600, 660, 700nm.	All equipment /analysers should have interface for a central console for transmitting and report generation in an efficient manner.
• Detector	
• 8 Silicon photo diodes	The Laboratory space may be visited before bidding as this tender is on Turn-key mode and has to be delivered in thoroughly professional and should commensurate with laid Laboratory accreditation criteria.
• Sample unit	No Change
• 30 positions for routine samples, 9 positions for Blank, Controls, Standards and ISE.	No Change
• Reagent Unit	No Change
• 50 cooled reagent positions	No Change
• Reaction Tray	No Change
• 45 Hard Glass cuvettes	No Change
• Reaction Liquid Mixing	No Change
• Stirrer with variable speed mixer 18. Reading volume 180 µl.	No Change
• On board laundry	No Change
• 6 stage cleaning, 2 stage drying with Cuvette validation step	No Change
• Sample Pipetting	No Change
• 2-70 µl. (Adjustable in 0.2µl)	No Change
• Reagent Pipetting	No Change
• 10-300 µl (Adjustable in 1 µl)	No Change
• Power Supply	No Change
• AC 110 V. +/- 10% 60 ± Hz or AC 220 V ± 10% 50 ± Hz. (Factory Set) / 600 VA	No Change
• Dimensions	No Change
• 810 mm (W) x 800 mm (D) x 600 mm (H) 24.	No Change
	No Change

	Refrigerator-365L	<ul style="list-style-type: none"> Description: Vertical, frost free, CFC free, Single Glass Door, Door with lock and nlt' 	No Change
		<ul style="list-style-type: none"> Capacrtty: 365 L 	No Change
		<ul style="list-style-type: none"> Temperature range: Should be from 2oC - 8 oC throughout the Chamber 	No Change
		<ul style="list-style-type: none"> Temperature should be controlled by micro-processor controller 	No Change
		<ul style="list-style-type: none"> Should have digital display of temperature 	No Change
		<ul style="list-style-type: none"> Number of Shelves: Should have 04nos 	No Change
		<ul style="list-style-type: none"> Should be supplied with suitable voltage stabilizer 	No Change
		<ul style="list-style-type: none"> Power supply: 230V AC, 50 -60 Hz 	No Change
	Auto Washer	<ul style="list-style-type: none"> Temperature: Adjustable from RT to 900 C 	No Change
		<ul style="list-style-type: none"> Built-in Water Softener 	No Change
		<ul style="list-style-type: none"> Open source detergent 	No Change
		<ul style="list-style-type: none"> Hepa filter for Suitable Maximum space utilization design 	No Change
		<ul style="list-style-type: none"> Wash arm Model with Inbuilt Steam drier 	No Change
		<ul style="list-style-type: none"> Line Voltage: 3 Phase, 440 VAC \pm 10 %, 50 Hz 	No Change
		<ul style="list-style-type: none"> Should have International certification 	No Change
		<ul style="list-style-type: none"> Validation and Certification during the warranty period 	No Change
			BIS/ISO approved
	Hot Air Oven	<ul style="list-style-type: none"> Temp control - Microprocessor based PID temp controller Temperature - 5 deg. C above ambient to 250 deg. C 	No Change
		<ul style="list-style-type: none"> Temp. Accuracy - \pm 1deg c. 	No Change
		<ul style="list-style-type: none"> Inner Chamber - Stainless Steel 304 Quality 	No Change
		<ul style="list-style-type: none"> Outer Chamber - Mild Steel Power coating, Gasket for door sealing 	No Change
		<ul style="list-style-type: none"> Inner Dimension - 24"Wx24"Dx36"H 	No Change
		<ul style="list-style-type: none"> Outer Dimension - 30"Wx30"Dx48"H 	No Change
		<ul style="list-style-type: none"> Distance between trays - 6" 	No Change
		<ul style="list-style-type: none"> Trays - SS 304 quality Perforated Trays 	No Change
		<ul style="list-style-type: none"> No. of trays - 06 nos, suitable according to inner dimension Heater Rating -6 k.w. 	No Change
		<ul style="list-style-type: none"> Heater - SS tubular AIR Heater on both sides 	No Change
		<ul style="list-style-type: none"> Circulation - Motorized air circulation from top for Uniform temperature 	No Change
		<ul style="list-style-type: none"> Power supply : 220 / 230 Volts A.C. 	No Change
			BIS/ISO approved
	Sample Collection Couch	<ul style="list-style-type: none"> The frame is made of flat oval steel tubing 	No Change
		<ul style="list-style-type: none"> The padded seat, back and armrests provide the patient with comfortable seating. 	No Change
		<ul style="list-style-type: none"> The seat height is 500 mm. 	No Change
		<ul style="list-style-type: none"> The distance between the wedge-shaped padded armrests 500 mm 	No Change
		<ul style="list-style-type: none"> Maximum weight load 150 kg 	
	Modular Lab Table		Remove
	MODULAR LAB		Remove
11. ICU			
ICU(MICU/SICU)	Bedside Locker+ Over bed		Deleted
	Defibrillator	<ul style="list-style-type: none"> Should monitor vital parameters and display them. 	No Change
		<ul style="list-style-type: none"> Should print the ECG on thermal recorders. 	No Change
		<ul style="list-style-type: none"> Should work on manual and automated external defibrillation (AED) mode. Should have manual selection up to 200 J. 	No Change
		<ul style="list-style-type: none"> Should be capable of doing synchronized & asynchronous cardioversion. 	No Change
		<ul style="list-style-type: none"> Should have defibrillator testing facility. 	No Change
		<ul style="list-style-type: none"> Should be a low energy biphasic defibrillator monitor with recorder, having capability to arrest all arrhythmia within a maximum energy of 200 Joules 	No Change
		<ul style="list-style-type: none"> Should monitor ECG through paddles, pads and monitoring electrodes and defibrillate through pads and paddles 	No Change
		<ul style="list-style-type: none"> Should have automatic lead switching to see patient ECG through paddles or leads. 	No Change
		<ul style="list-style-type: none"> Should measure and compensate for chest impedance for a range of 25 to 200 ohms 	No Change
		<ul style="list-style-type: none"> Should have a built in strip printer/ thermal recorder 	No Change
			No Change
		<ul style="list-style-type: none"> Should have charging time of less than 5 seconds for maximum energy.Charging indicator should be present. 	No Change
		<ul style="list-style-type: none"> Should have bright display for viewing messages and ECG waveform for 4 seconds 	No Change
		<ul style="list-style-type: none"> Should have external & internal paddles with paddles contact indicator – for good paddle contact. 	No Change
		<ul style="list-style-type: none"> Single Adult and pediatric paddles should be available. 	No Change
		<ul style="list-style-type: none"> Should have event summary facility for recording and printing at least 250 events and 50 waveforms 	No Change

		<ul style="list-style-type: none"> Should have a battery capable of usage for at least 90minutes or 30 discharges. 	No Change
		<ul style="list-style-type: none"> Should have facility for self test/check before usage and set up function 	No Change
		<ul style="list-style-type: none"> Should have a battery capable of usage for at least 90minutes or 30 discharges. 	No Change
		<ul style="list-style-type: none"> Should be capable of printing Reports on Event summary, configuration, self test, battery capacity etc 	No Change
		<ul style="list-style-type: none"> Power input to be 220-240VAC, 50Hz Indian plug. 	No Change
			Added - Should have external pacing facility with leads
			US FDA Approved model should be offered
	Ventilator		Deleted
	Emergency Trolley	<ul style="list-style-type: none"> Should be high quality height adjustable emergency procedure trolley 	No Change
		<ul style="list-style-type: none"> Top section should be 2 sectional 	No Change
		<ul style="list-style-type: none"> Base plate should be of sheet steel, pre treated with epoxy powder coating. Should have drilled holes of approx 1 cm dia to allow fluid drainage. 	No Change
		<ul style="list-style-type: none"> Lower frame and intermediate frame should be of steel tubes of rectangular and square sections, multiple pretreated and epoxy powder coated. 	No Change
		<ul style="list-style-type: none"> Castors of 150 mm dia, anti static with high quality brakes. 	No Change
		<ul style="list-style-type: none"> Should have central braking and central steering. 	No Change
			No Change
		<ul style="list-style-type: none"> Should have bumpers on all corners to prevent damage due to hitting. 	No Change
		<ul style="list-style-type: none"> Bed surface size: 705 mmW x 1950 mmL. Mattress – High density foam mattress anti microbial treated with water proof flame retardant, antimicrobial, leather like upholstery. 	No Change
		<ul style="list-style-type: none"> Hydraulic height adjustment with single or twin pedestal or by crank mechanism 	No Change
		<ul style="list-style-type: none"> Height adjustment range from base plate: 530-900 mm (measurement 150mm casters) 	No Change
		<ul style="list-style-type: none"> X-ray translucent bed surface 1950 mmL x 705 mmW. 	No Change
		<ul style="list-style-type: none"> Withdrawable X-ray cassette tray (it should be possible to remove the cassette without disturbing the patient) 	No Change
		<ul style="list-style-type: none"> Single touch CPR release button for backrest. 	No Change
		<ul style="list-style-type: none"> Should have oxygen cylinder holder 	No Change
		<ul style="list-style-type: none"> Should have swing away SS side rails. 	No Change
		<ul style="list-style-type: none"> Stepless back adjustment with gas spring support (0 to +70°) 	No Change
		<ul style="list-style-type: none"> Trendelenburg / Reverse Trendelenburg 	No Change
	Crash Cart		BIS/ISO approved
		1. Overall size shall be more than 900mm L x 500mm W x 1500mm H.	No Change
		2. The crash cart should be made of 25.4mmx18G Stainless steel tubular frame work.	No Change
		3. Shall have Epoxy / Anti-Microbial powder paint inside and out	No Change
		4. Should have dual push handles on either side	No Change
		5. Should have S.S. shelves, six colored removable bins & two polystyrene lockable storage units	No Change
		with three drawers each.	No Change
		6. Facility to carry ECG Monitors, Defibrillators etc on open areas at top centre and bottom	No Change
		shelves.	No Change
		7. Should have Stainless steel saline rod fixed with.	No Change
		8. Two accessory mounting brackets to mount accessories anywhere without the need of prethreaded holes.	No Change
		9. Crash cart should be mounted on 12.5 cmsdia non-rusting swiveling castor wheels. Two	No Change
		having locking arrangement.	No Change
		10. Oxygen cylinder stand epoxy powder coated, on one side	No Change
			BIS/ISO approved
	Portable Suction Machine	<ul style="list-style-type: none"> 0-700 mm Hg ± 10 reusable, flutter free vacuum control knob, 25ltrs/min, tight fitting jar cap, vacuum capacity; 18 litres/min, maximum depression: - 75kPa 	No Change
		<ul style="list-style-type: none"> Wide mouthed 2 x 2 Ltrs. (Polycarbonate) with self sealing bungs and mechanical over low safety device. 	No Change
		<ul style="list-style-type: none"> Power Requirements: 230 V, 50 Hz, 2 ± 0.5 Amps, 200 watts. 	No Change
		<ul style="list-style-type: none"> Power consumption: 200W 	No Change

		<ul style="list-style-type: none"> Operating condition: –Capable of operating continuously in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90% in ideal circumstances. 	No Change
			BIS/ISO approved
12. TEMPORARY PACING ROOM			ALL equipment Deleted
13. GENERAL WARD			
General Ward	Fowler Bed with Mattress		Deletd (RC)
	Bedside locker		Deletd (RC)
	Bedside screen	<ul style="list-style-type: none"> Foldable screen with 3 foldable sections. 	No Change
		<ul style="list-style-type: none"> Frame of MS tubes (15mm dia and 1mm wall thickness), suitably pretreated and powder coated. 	No Change
		<ul style="list-style-type: none"> Mounted on six castors of high quality and diameter 5 cm. 	No Change
		<ul style="list-style-type: none"> Size – End spans 610 mm wide and 1680mm tall. 	No Change
		<ul style="list-style-type: none"> Middle span – 1220 mm wide and 1680 mm tall. 	No Change
		<ul style="list-style-type: none"> Spring wire attached to hook for fixing curtains. 	No Change
		<ul style="list-style-type: none"> Curtains of washable durable PVC material, opaque and light in colour (green/grey/blue). 	No Change
	Commode chair	Features: <ul style="list-style-type: none"> Adjustable height Durable Cushion armrest 	No Change
		Details: <ul style="list-style-type: none"> Foldable frame commode Fixed commode chair fixed commode wheelchair Fixed / detachable armrest Foldable footrest Height adjustable commodes Dual brake system Seat - detachable cushion fixed seat Backrest - fabric backrest with foam Self propelling/ attendant type Cushion armrest 	No Change
	Trolley, dressing	<ul style="list-style-type: none"> Overall approximate dimension: 1000 mm L X 500 mm W X 900 mm H ± 50 mm tolerance accepted. Approximate shelf dimension: 750 mm L x 500 mm W. S.S. tubular frame mounted on four 125 mm diameter castors with synthetic body, two with brake & two without brake. Two S.S. shelves with protective railings on all four sides. The sheets used shall be of 1.2 mm thick. 6. With S.S. bowl and S.S. bucket. 	No Change
	Trolley, oxygen gas cylinder	<ul style="list-style-type: none"> Capacity One Oxygen Cylinder Material Stainless Steel Castor Length 10 cms Finishing Powder Coated Made of CRCA tubes CRCA sheet base On 10 cms castors Pre-treated powder coated 	No Change
	Wheel chair adult	1. Overall approx size: 670mm W x 1120mm D x 920mm H. 2. Welded frame construction of round tubes. 3. Two solid rubber tyred bicycle wheels with brakes & self propelling stainless steel hoops. 4. Minimum frames size of round steel 22.2 x 18 G tubes and 19.05 x 18 G tubes. 5. Mild steel tubular construction fitted with cushion seat and back. 6. Wheel chair is fitted with minimum 24’’ dia rim of bicycle wheel fitted on specially developed and heat treated axle with solid tyre in the rear. 7. In the front minimum 150mm dia castor wheels are fitted. In front of castor wheels, aluminum foot paddles are provided on adjustable brackets. 8. Two handles are provided with hand grips. Brakes are provided on rear wheel to hold the chair to stop in 5 degree ramp.	No Change

		9. All mild steel components should be thoroughly pre-treated chemically to remove rust and	No Change
		foreign matter like grease, oil etc. by dip tank process pretreatment system.	No Change
		10. The treated metal surface should have coating of epoxy polyester powder and oven baked at	No Change
		180 degree to 200 degree centigrade to avoid contamination of the clean metal surface from	No Change
		dust particles.	No Change
Manual suction machine		• Light Suction	No Change
		• A Non-Tiring Manual-Powered Suction Unit.	No Change
		• Housing: Engineering plastic moulded parts - non corrosive, easy to dismantle, clean, disinfect and reassemble.	No Change
		• Capacity: Outright vacuum -600 mm Hg \pm 10 with average per stroke volume of 200 ml.	No Change
		• Pump Type: Efficient piston pump for creating vacuum instantly.	No Change
		• Jar: Autoclavable 1 ltr. PC jar, s i l i cone patient tube (7 mm ID X 2 mtr).	No Change
		• Vacuum Gauge: Bourden type, 5 cms 0 - 760 mm Hg & 0-100kPa	No Change
		• Dimension & weight: 32 x 17 x 30cms. 2.5 kg.	No Change
		• Portable pedal unit with top view manometer visible to the operator.	No Change
		• Bacterial filter (0.3 micron) with reusable / autoclavable housing between jar and pump.	No Change
		• Ease of operation - one person can operate unaided.	No Change
Sphygmomanometer		1 Should be aneroid type,	No Change
		2 The tubes should be fitted with male and female leur connectors.	No Change
		3 Should have a measuring range from 0 to 300 mmHg.	No Change
		4 Should be provided with adult arm cuffs of size medium & large and paediatric	No Change
		cuff.	No Change
		5 The dial mano meter markings and graduations should be permanent and	No Change
		clearly visible and filled with pigments, with diameter of minimum diameter of	No Change
		160 mm.	No Change
		6 Body & Bazel – Aluminium die casted (Powder coated), screw type bazel	No Change
		7 Sensing-corroated phosphorous bronze twin capsule bellows.	No Change
		8 Movement mechanism – Brass	No Change
		9 Connection : brass, nickel plated for 3-4 mm rubber hose.	No Change
		10 Dial – Aluminium	No Change
		11 Pointer – White coated, thin & sharp made of phosphorous Bronze	No Change
		12 Window lenses – Clear plastic.	No Change
		13 All plastic parts, if any used should not crack, flake, peel or disintegrate in	No Change
		normal use.	No Change
		14 The inflating rubber bag should be capable of withstanding an internal pressure	No Change
		of 450 mmHg without leaking.	No Change
		15 The inflating bulb should be soft and should not have any joints or ridges.	No Change
		16 The fastening arrangements of the cuff should be of hook and loop type	No Change
		(Velcro)	No Change
		17 The threading and fastening arrangement of the cuff should show no sign of slip	No Change
		or failure when subjected to the maximum test conditions.	No Change
		18 The rubber tubes used should have an internal diameter of 3 ± 0.5 mm and the	No Change
		external diameter should not be less than 8mm.	No Change
	Thermometer clinical	• For oral, rectal and underarm temperature measurement	No Change
		• Measurement Accuracy : A+0.1 degree celcius (32.0 to 42.0 degree celcius)	No Change
		• A+0.2 degree Fahrenheit (89.6 to 107.6 degree Fahrenheit), Auto off function : Approximately 30 minutes after use or 3 minutes when not been used	No Change
Stethoscope		• Chestpiece : Dual head nonchill rim & diaphragm	No Change
		• Diaphragm : Tunable diaphragm	No Change
		• Binaural : Dual-leaf spring encased at 15° angle	No Change
		• Operating temperature range : 0° C ~ 40° C	No Change

	<ul style="list-style-type: none"> (32°F ~ 104° F) Operating humidity : Less than 95% RH Storage temperature range : -10° C ~ 50° C (14°F ~ 122° F) Storage humidity : Less than 95% RH. 	No Change
		No Change
		No Change
		No Change
		No Change
14. NON MEDICAL FURNITURE		Deleted
15. MEDICAL FURNITURE & FIXTURE		No Change
Instrument Trolley	<ul style="list-style-type: none"> Overall size : Size: 650mm L x 450mm W x 900mm H. Stainless steel tubular frame work made of 25mm OD x 18 G verticals mounted on 100 mm dia non-rusting swiveling castor wheels two with brakes, two without brakes. 	No Change
	<ul style="list-style-type: none"> Two stainless steel shelves with protective railings on three sides. 	No Change
	<ul style="list-style-type: none"> Only 304 grade stainless steel should be used for trolley frame work and STAINLESS STEEL shelves. 	No Change
Kick Bucket	<ul style="list-style-type: none"> Stainless steel bowl of dia 375 mm. SS tubular framework fitted three 125 mm diameter non-rusting imported castor wheels, all without brake. 	No Change
	<ul style="list-style-type: none"> Castor housing and wheels made from high grade non floor-staining synthetic materials with integrated thread guards. Wheel centre having precision ball bearing to run smoothly. 	No Change
	<ul style="list-style-type: none"> Frame work made of 25 mm dia x 18 G verticals stainless steel tubes, upper ring made of rod dia 10 mm. 	No Change
	<ul style="list-style-type: none"> S.S. rod and tubes shall be of 304 grade. 	No Change
Mayo Trolley	<ul style="list-style-type: none"> Tubular frame made of SS pipe, mounted on four castors 	No Change
	<ul style="list-style-type: none"> Tray stand mounted on a single SS pipe with removable SS tray 	No Change
	<ul style="list-style-type: none"> Adjustable height form about 75cm. to 150cm. S.S. Tray Size approx. 60 cm L x40cm W 	No Change
	<ul style="list-style-type: none"> All the Stainless Steel should be 304 grade/ 16 gauge 	No Change
	<ul style="list-style-type: none"> Manufacturer should be ISO 13485certified 	No Change
Medicine Trolley	<ul style="list-style-type: none"> Frame work made from SS steel material. 	No Change
	<ul style="list-style-type: none"> Flat top of SS &at least 6inch deep removable bucket at the bottom 	No Change
	<ul style="list-style-type: none"> Should have multiple long drawers to hold drug strips made of high quality epoxy plastic or steel material with convenient and smooth slide in and slide out motion (At least 30 separate drawers – in about six to eight rows) 	No Change
	<ul style="list-style-type: none"> The front of the each drawer should be half covered on which removable medicine label can be pasted and upper half open to see the contents inside. 	
	<ul style="list-style-type: none"> Mounted on four 100mm castors (2 with brakes). 	No Change
	<ul style="list-style-type: none"> All the Stainless Steel should be 304 grade/ 16 gauge 	No Change
	<ul style="list-style-type: none"> Manufacturer should be ISO 13485certified. 	No Change
Oxygen Trolley	<ul style="list-style-type: none"> Cylinder Trolley (Push Type) fitted with 2 castors, 100 mm dia. With M.S. body frame. Suitable for 1320 ltrs.Size gas cylinders. 	No Change

	<ul style="list-style-type: none"> Trolley with SS base. 	No Change
	<ul style="list-style-type: none"> Manufacturer should be ISO 13485certified. 	No Change
Revolving Stool	<ul style="list-style-type: none"> Tubular four legged base of 25 x 14 g ERW tube.STAINLESS STEEL top. Height adjustment by screw,300 mm dia. 	No Change
	<ul style="list-style-type: none"> The legs fitted with high quality PVC shoes with nylon reinforcement. 	No Change
	<ul style="list-style-type: none"> Manufacturer should be ISO 13485certified. 	No Change
Stretcher with Trolley	<ul style="list-style-type: none"> Dimension:-2000mmx 550mmW x 800H mm. 	No Change
	<ul style="list-style-type: none"> Frame work made of 31-75 OD mm x 1.60 mm vertical & 25 mm x 1.20 mm horizontal CRC tubes Trolley mounted on 15 cmsdia castors – 2 with brakes 	No Change
	<ul style="list-style-type: none"> Removable stretcher top made of 1.22 mm aluminium sheet with S.S. handle / M.S. with PVC cover handle at both end with 40 density foam Mattress covered with good quality rexine. 	No Change
	<ul style="list-style-type: none"> Manufacturer should be ISO 13485 certified. 	No Change
	<ul style="list-style-type: none"> 	
Surgeon chair for OT	<ul style="list-style-type: none"> SS frame with five castors 	No Change
	<ul style="list-style-type: none"> Stainless Steel top. With detachable cushion and Backrest,elbow rest 	No Change
	<ul style="list-style-type: none"> Adjustable height with a pneumatic height adjusting handle 	No Change
	<ul style="list-style-type: none"> All around circular foot rest rod of solid stainless steel 	No Change
	<ul style="list-style-type: none"> All SS of 304/16 grade/gauge 	No Change
	<ul style="list-style-type: none"> Manufacturer should be ISO 13485 certified. 	No Change
Wheel Chair	<ul style="list-style-type: none"> Welded frame construction of round tubes. 	No Change
	<ul style="list-style-type: none"> Two solid rubber tyred bicycle wheels / MAG wheels with brakes & self-propelling 	No Change
	<ul style="list-style-type: none"> Stainless steel hoops. Minimum Frame size of round steel 22 x 18 G tubes and 19 x 18 G tubes. 	No Change
	<ul style="list-style-type: none"> Mild steel tubular construction fitted with cushion seat and back. 	No Change
	<ul style="list-style-type: none"> Wheel chair fitted with minimum 24” dia rim of bicycle wheel fitted on specially developed and heat treated axle with solid tyre in the rear. 	No Change
	<ul style="list-style-type: none"> In the front minimum 150mm dia castor wheels are fitted. 	No Change
	<ul style="list-style-type: none"> In front of castor wheels, aluminium foot paddles (foldable) provided on adjustable brackets. 	No Change
	<ul style="list-style-type: none"> Two handles are provided with the hand grips. 	No Change
	<ul style="list-style-type: none"> Brakes to be provided on rear wheel to hold the chair to stop in 5 degree ramp. 	No Change
Double Step Stool	<ul style="list-style-type: none"> First step height 230 mm. & second step size 450 mm. 	No Change

	<ul style="list-style-type: none"> Step made of 18G CRCA sheet. Welded on SS. tubular frame of 25.4 mm x18 G fitted with aluminium tread flats of size: 500 mm L x 32 mm W x 3.4 mm thick, fitted by aluminium pop rivet. Legs fitted with PVC. 	No Change
	<ul style="list-style-type: none"> Shoe with nylon reinforcement. 	
	<ul style="list-style-type: none"> All mild steel components should be thoroughly pre-treated chemically to remove rust and foreign matter like Grease, Oil etc. 	No Change
	<ul style="list-style-type: none"> The treated Metal Surface should have coating of Epoxy Polyester Powder . 	No Change
	<ul style="list-style-type: none"> Manufacturer should be ISO 13485 certified 	No Change
Single Step Stool	<ul style="list-style-type: none"> Approximate height: 230 mm, 9" 	No Change
	<ul style="list-style-type: none"> Mild steel tubular frame 	No Change
	<ul style="list-style-type: none"> Mild steel top fitted with aluminium tread flats 	No Change
	<ul style="list-style-type: none"> Legs fitted with rubber feet 	No Change
	<ul style="list-style-type: none"> Pre-treated and powder coated finish 	No Change
	<ul style="list-style-type: none"> Manufacturer should be ISO 13485 certified. 	No Change
Fowler Bed (3 section) with mattress	<ul style="list-style-type: none"> Patient handset 	Deletd (RC)
	<ul style="list-style-type: none"> Retracting backrest and legrest 	No Change
	<ul style="list-style-type: none"> Hygienic design (PP), lockable and tuck away side rails. 	No Change
	<ul style="list-style-type: none"> Profile frame with easy removable ABS plastic covers 	No Change
	<ul style="list-style-type: none"> Removable head and foot ends 	No Change
	<ul style="list-style-type: none"> Two with break castors. 	No Change
	<ul style="list-style-type: none"> Electrostatic painted metal frame. 	No Change
	<ul style="list-style-type: none"> X-Ray translucent backrest and cassette carrier 	No Change
	<ul style="list-style-type: none"> Height adjustable stainless steel IV pole. 	No Change
	<ul style="list-style-type: none"> Easy adjustable knee break position 	No Change
	<ul style="list-style-type: none"> Plastic crash bumpers 	No Change

	<ul style="list-style-type: none"> Dual sided manual CPR at backrest 	No Change
	<ul style="list-style-type: none"> Overall Length : 215 cm or more 	No Change
	<ul style="list-style-type: none"> Overall Width : 99 cm 	No Change
	<ul style="list-style-type: none"> Height Range : 47 cm 	No Change
	<ul style="list-style-type: none"> Trendelenburg : 0°- 12° 	No Change
	<ul style="list-style-type: none"> Reverse Trendelenburg : 0°- 12° 	No Change
	<ul style="list-style-type: none"> Backrest Angle (Max.) : 75° 	No Change
	<ul style="list-style-type: none"> Legrest Angle (Max.) : 34° 	No Change
	<ul style="list-style-type: none"> Castor Diameter : 12.5 cm 	No Change
	<ul style="list-style-type: none"> Safe Working Load : 230 kg or more 	No Change
	<ul style="list-style-type: none"> Should be supplied with other essential accessories 	No Change
	<ul style="list-style-type: none"> Manufacturer should be ISO 13485 certified. 	No Change
Dressing Trolley	<ul style="list-style-type: none"> Verticals of also 30mm OD x 18 G tube horizontal stays of 19 mm OD x 18 G tube on all four sides to support two stainless steel shelves 22 G over with 10 mm dia stainless steel railings are provided on all four sides 	No Change
	<ul style="list-style-type: none"> The trolley holds stainless steel bucket with STAINLESS STEEL lid at lower level and S.S. bowl at top level respectively. 	No Change
	<ul style="list-style-type: none"> Only 304 grade stainless steel should be used for tubular frame work & STAINLESS STEEL shelves of trolley. 	No Change
	<ul style="list-style-type: none"> The trolley should be in buff finish with 100 mm dianon –rusting swivel castors wheels two with brakes, two without brakes 	No Change
	<ul style="list-style-type: none"> Manufacturer should be ISO 13485 certified. 	No Change
Crash Cart	<ul style="list-style-type: none"> Frame work made of Stainless Steel tube of minimum 25mm dia. 	No Change
	<ul style="list-style-type: none"> Two light weight polystyrene boxes each with three drawers, upper drawer with medicine container of different sizes. 	No Change
	<ul style="list-style-type: none"> Provision to hold Oxygen cylinder and cardiac Massage Board. 	No Change
	<ul style="list-style-type: none"> Six numbers coloured hand out bins to keep important supplies at eye level. Two nos. 	No Change

	<ul style="list-style-type: none"> Stainless Steel shelves to carry monitors, ECG Machine, suction apparatus etc. 	No Change
	<ul style="list-style-type: none"> Provided with corner buffers & Rails. All stainless steel components should be of 304 quality. 	No Change
	<ul style="list-style-type: none"> Crash cart should be movable on four non-rusting swivel casters of 125mm dia two with brake. 	No Change
	<ul style="list-style-type: none"> Manufacturer should be ISO 13485 certified. 	
Over Bed Table	<ul style="list-style-type: none"> Minimum Size : Top 800-820mm L x 350-370mm W . 	No Change
	<ul style="list-style-type: none"> Laminated top should be fitted on mild steel square tubular telescopic stem with geared , handle for Gas Spring height adjustment from. 750mm to 1000mm(+/- 50mm). 	
	<ul style="list-style-type: none"> Base frame should be of mild steel rectangular tubular base frame mounted on four plastic castors of 50mm dia. 	No Change
	<ul style="list-style-type: none"> Manufacturer should be ISO 13485 certified. 	
Bedside Locker	<ul style="list-style-type: none"> Over all size minimum: 40-45 cms x 40-45 cms x 80-85 cms H. 	No Change
	<ul style="list-style-type: none"> Body consisting of 2 sides and back is made from metal frame with epoxy painted material of good quality. 	No Change
	<ul style="list-style-type: none"> One drawer size minimum 100mm H x 300mm W x 350mm with One shelf and cabinet provided 	No Change
	<ul style="list-style-type: none"> Bedside cabinet top surface should be made of Laminated surface/Stainless steel. 	
	<ul style="list-style-type: none"> Under the drawer is an open storage space and below it is a closed-door cabinet. 	No Change
	<ul style="list-style-type: none"> Door of the cabinet box is pivoted at top and bottom. Base of the drawer is fitted with four non-rusting swivel castors. 	No Change
	<ul style="list-style-type: none"> Should be provided with non rustable heavy duty Plastic Castors. 	
	<ul style="list-style-type: none"> It should be fitted with hinge door and lock. The door should have louvers for ventilation. It should be provided with recess to serve as handle. 	

	<ul style="list-style-type: none"> Manufacturer should be ISO 13485 certified. 	No Change
Attendant bed with mattress	<ul style="list-style-type: none"> Overall Sizes minimum:(L)1900-1950mm X (W)750-800 mm X (H) 500-550mm 	No Change
	<ul style="list-style-type: none"> Bottom frame: made of MS ERW round tube dia 25 mm thick of 2 mm or more 	No Change
	<ul style="list-style-type: none"> top Frame :MS erw oval tube 30 mm X 60 mm oval 1.5 mm thick . Top sheet of CRCA 1.2 mm thick storage sheet of 1.2 mm thick 	No Change
	<ul style="list-style-type: none"> Powder coated anti microbial and thermosetting epoxy polyester formulated to fulfill the requirement for bacterial protection 	
	<ul style="list-style-type: none"> Max safe load of 135 Kg 	No Change
	<ul style="list-style-type: none"> Manufacturer should be ISO 13485 certified. 	No Change
		No Change
Drug Cart	<ul style="list-style-type: none"> Emergency cart constructed of SS/aluminum and high density resin. 	No Change
	<ul style="list-style-type: none"> Defibrillator shelf with monitor straps, glove dispenser, sharp container, oxygen cylinder cradle, IV pole, cardiac chest board, writing surface. 	No Change
	<ul style="list-style-type: none"> Clear plastic/ABS plastic overlay for top cap with minimum 10 colour coded docketts. 	No Change
	<ul style="list-style-type: none"> Push handle built in to the end panel for smooth and stable movement. 	No Change
	<ul style="list-style-type: none"> Pullout writing surface top. 	No Change
	<ul style="list-style-type: none"> Cart should be light, sturdy and scratch resistant. 	No Change
	<ul style="list-style-type: none"> All drawers should be lockable individually. 	No Change
		No Change
	<ul style="list-style-type: none"> Should have minimum of five drawers with adjustable/fixed divides. 	No Change

	<ul style="list-style-type: none"> Should have side bin discarding syringes and gloves. 	No Change
	<ul style="list-style-type: none"> Lockable Castor should not be less than 5" diameter to facilitate quite and easy manuvrebility, dust-prevention, flexible transportation 	No Change
	<ul style="list-style-type: none"> Size should be :-Height: 100 to 110 cm 	No Change
	<ul style="list-style-type: none"> Manufacturer should be ISO 13485 certified. 	No Change
Soiled Linen Cart	<ul style="list-style-type: none"> Smart, Elegant, Practical, Complete Stainless Steel tubular frame Twin Soiled Linen Hamper Cart With Washable Colour Coded Bags On 5" Swivel, Antistatic Castors 	No Change
	<ul style="list-style-type: none"> Size: L 35"-40" X W 17" -20"X H 36"-40" app. (Tube Dia. should not less than 1") 	
Couch for USG/ECHO	<ul style="list-style-type: none"> Motorised height, backrest, foot section adjustment and Trendelenburg tilting 	
	<ul style="list-style-type: none"> Two upholstery widths available: Regular 70 cm or Extra Wide 80 cm. 	No Change
	<ul style="list-style-type: none"> Low level access height for disabled or wheelchair patients – 50 cm 	No Change
	<ul style="list-style-type: none"> Twin sub-frames for extra stability 	No Change
	<ul style="list-style-type: none"> Head rest, cushion and paper roll holder supplied as standard. 	No Change
	<ul style="list-style-type: none"> Weight Capacity: 250 kgs / 39 stone 	
	<ul style="list-style-type: none"> Height range: 50 cm - 102 cm 	No Change
	<ul style="list-style-type: none"> Overall Length: 180 cm 	No Change
	<ul style="list-style-type: none"> Width : Regular 70 cm 	No Change
IV Tree System		Deleted
Track Systems with Curtains	<ul style="list-style-type: none"> Curtain Tracks: 	Deleted
	<ul style="list-style-type: none"> FABRICATION: 	Deleted
16. MORTUARY		
4 Chamber		Deleted
Autopsy Table	<ul style="list-style-type: none"> Elevating with stainless steel dissection board, Dimension:100"L x 40"W. 	No Change

	<ul style="list-style-type: none"> Elevating height 32" to 40' up and down pedestal control. All thick gauge heavy duty stainless construction with anti corrosion Elevating/rotating down draft table. 	No Change
	<ul style="list-style-type: none"> Table top and sick fabricate in 14 gauge stainless steel anticorrosion pedestal of 11" gauge stainless steel with satin finish 1/2" removable perforated grid plate with 3/8" diameter hole on 2" centres (4 each). Large Sink well Handy spray, rinse, heavy duty chrome plated hand piece durable 8' long flexible hose Hand piece with hose drop in deck. Concealed pressure control hot and cold water mixture/swing spout Hot/cold mixing value down draft canes Hydro aspirator with built in vacuum breaker. Access panel 2 outlet curved moulded sides of table(Stainless Steel). 	No Change
	<ul style="list-style-type: none"> Dissection Station 'L' shaped extension. Same gauge stainless steel extension with drainage facility and water supply (Hot and Cold) 	
	<ul style="list-style-type: none"> (L) 70"X30" (W) for dissection of internal organs. Extension should have independent fixed pedestal and not attached to autopsy table as pedestal is fixed. The edger should be curved, moulded and raised 	
17. BIO MEDICAL WASTE FACILITY		Deleted
Bins	<ul style="list-style-type: none"> Size: 330-350mm dia, 410-430mm height 	No Change
	<ul style="list-style-type: none"> Material of Construction (MOC): Stainless steel (SS) 304 grade 18 SWG sheet. 	No Change
	<ul style="list-style-type: none"> Specifications: Argon are welded joints. Foot operated lid, easy to handle provided with a rod handle to uplift. Clean design and increasing aesthetic appeal. Easy to clean/ wipe down. 	No Change
	<ul style="list-style-type: none"> It should bear biohazard label steel/silicone/ collar for affixing appropriate colour bag inside the dustbin. Colour Red, Yellow, Black & Blue 	No Change
Trolley	<ul style="list-style-type: none"> Size: 450-500mm X 600-650mm X 450-500mm height 	No Change
	<ul style="list-style-type: none"> Material of Construction (MOC): Stainless steel (SS) 304 grade. 14 SWG sheet. 25mm X 25mm square pipe frame work. Caster wheel 75mm X 25mm in chrome finish. 	No Change
	Specification:	
	<ul style="list-style-type: none"> Having carrying capacity of about 250kg. 	No Change
	<ul style="list-style-type: none"> Box made with Stainless Steel sheet having removable lid with 2 lockable latches on the box lid and 2 heavy duty handles for lifting the lid. 	No Change
	<ul style="list-style-type: none"> Handle Bars made with 14 SWG pipe and welded both ends of the trolley. 	No Change
	<ul style="list-style-type: none"> Easy maneuverability on 4 swivel SS castors (125 mm dia), 2 castors should have brakes. Clean design and increasing aesthetic appeal. Easy to clean/ wipe down. 	No Change
Colored Bags	<ul style="list-style-type: none"> Pattern: Printed 	No Change
	<ul style="list-style-type: none"> Colour: Yellow, Red, Blue, Black 	No Change
	<ul style="list-style-type: none"> Material: LD, LLDPE 	No Change
	<ul style="list-style-type: none"> Capacity: 5 to 10 Kg 	No Change
	<ul style="list-style-type: none"> Bag Weight (kg): 50 to 100 gm 	No Change
18. RECORD ROOM		Deleted
19. CTVS INSTRUMENT		
Instrument Set for Surgery	1.CASTROVIEJO NEEDLE HOLDER:	No Change
	MICRO NEEDLE HOLDER Round Handle with rachet, enhanced needle. Grip surface, SAPPHIRE / DIAMOND DUST regular box lock. Soft pressure spring handle very delicate jaws, all edges carefully rounded in order to avoid damage of even the finest needles and sutures.	No Change
	a) Length 180 mm / 7", 1.2 mm x 11 mm straight tip for suture 5-0 and smaller - 1 b) Length 180mm / 7", 0.4 mm x 11 mm straight jaw for suture 8-0 and smaller -1 c) Length 180mm / 7", 0.8 mm x 11 mm straight jaw for suture 6-0 and smaller -1	No Change
	2.RYDER NEEDLE HOLDER Intra Cardiac stainless steel TUNGSTEN CARBIDE / DIAMOND DUST, Ring Handle:	No Change
	a) Length 18 cm / 8", Round Tip 1.9 mm jaw – 2	No Change
	3.MINI RYDER with round jaw of 1.4 mm, with Titanium tip:	No Change
	a)Length 15 cm / 6" – 2 nos.	No Change

4. BOZEMANN FINNOCHIETTO Needle Holder with TC inserts gentle smooth curve at the shaft and curve at the box joint:	No Change
a) Length 24 cm -1	No Change
b) Length 30cm -1	No Change
5. CRILE – WOOD Needle Holder with box joint	No Change
a) Length 15 cm / 6” – 3Nos.	No Change
6. MAYO HAGGER Needle Holder:	No Change
a) Length 20 cm / 8” – 3 Nos.	No Change
7. HEAVY BARRY WIRE TWISTER with TC inserts	No Change
a) Length 20 cm -1 no.	No Change
b) Length 17cm -1 no.	No Change
8. RUBIO MINI WIRE TWISTER with TC inserts	No Change
a) Length 13 cm / 5” – 1	No Change
9. Sternal Wire Cutter Pliers	No Change
a) Length 23 cm – 1	No Change
b) Length 17.5cm – 1	No Change
	No Change
TISSUE FORCEPS	No Change
10. RING TIP TITANIUM MICRO TISSUE FORCEP, Sapphire / Enhanced needle grip Surface, round handle ring smooth.	No Change
a) Length 180mm / 7” – 0.5 x 1 mm – 1 No.	No Change
b) Length 180mm/ 7” – 0.5 x 1 -1.3 x 2 mm – 1 No.	No Change
c) Length 210mm - 0.5 x 1 mm – 1No.	No Change
Delicate Tissue Forceps –	No Change
11. DEBAKEY – GERALD – Atraumatic Tissue Forceps Titanium (2 each)	No Change
a) Length 15 cm / 6” Jaw 1.5 mm	No Change
b) Length 18 cm / 7” Jaw 1.5 mm	No Change
c) Length 24cm Jaw 1.5mm	No Change
12. DE-BAKEY – ADSON, Atraumatic tissue Forceps	No Change

a) Length 12.5 cm / 4 1/2" Jaw 1.5 mm - 1 No	No Change
13.DEBACHEY, angled, Atraumatic tissue Forceps	No Change
a) Length 19.5 cm / 7 1/2" Jaw 1.5 mm - 2 No	No Change
b) Length 19.5 cm / 7 1/2" Jaw 2.0 mm - 1 no	No Change
14.Dressing forceps Pott-smith with TC	No Change
a)23cm -3 No. &	No Change
b) 18cm- 3Nos.	No Change
15.ADSON TC SMOOTH 1 each	No Change
a)Length 12.0 / 4 1/2"	No Change
b)Adson TC Standard Length 15.0 cm /6"	No Change
16.CASTROVEIJO MICRO SCISSORS, Fine / nano blade Swedish edge spring style, flat handle – 1 each	No Change
a)Length 180 mm/ 7" 45deg nano blade	No Change
b) Length 180 mm/ 7" 60 degnano blade	No Change
c) Length 180 mm/ 7" 90 degnano blade	No Change
d) Length 180 mm/ 7" 125 degnano blade	No Change
17.CASTROVEIJO MICRO SCISSORS,ultra finenano blade Radialis Round Handle – 1each	No Change
a) Length 180 mm/ 7" 45 degnano blade	No Change
b) Length 180 mm/ 7" 90 degnano blade	No Change

c) Length 180 mm/ 7" 125 degnano blade	No Change
18.METZENBAUM SCISSORS , ring handle extra light curve edge ultra edge for ulitmate cutting performance .Gold plate sank	No Change
a)Length 180 mm /7" – 2Nos.	No Change
19 METZENBAUM SCISSORS , Straight, ring handle extra light curve edge ultra sharp edge for ultimate cutting performance Gold plate sank	No Change
a) Length 180 mm – 1 No.	No Change
b) Length 200 mm -1 No.	No Change
20.BABY METZENBAUM SCISSORS ring handle extra light curve super cut ultra sharp edge for ultimate cutting performance GOLD plate sank	No Change
a) Length 12 cm Str. -1 No.	No Change
b) Length 12cm CVD – 1No	No Change
21 METZENBAUM FINO TC scissors curved – 1each	No Change
a) Length 14 cm /5 ½"	No Change
b) Length 18 cm /7"	No Change
c) Length 20 cm /8 "	No Change
21 METZENBAUM FINO TC scissors pointed – 1 No	No Change
a)Length 18 cm /7 "	No Change
22 IRISH SCISSORS straight	No Change
a)Length 11.5 cm /4 ¼" – 1No.	No Change
23 RISH SCISSORS Curved	No Change
a)Length 11.5 cm /4 ¼ - 1 No.	No Change
25 HOHENFELLNER Valve cutting scissors – 1each	No Change
a) Length 21 cm /8 ¼"	No Change
b) Length 24 cm /9 ½"	No Change
26 NELSON METZENBAUM SCISSORS WITH tc EDGES CURVED – 1 each	No Change
a) Length 18 cm / 7"	No Change
b) Length 23 cm /9 "	No Change
27 ATRAUMATIC VASCULAR CLAMP COOLEY – BECK vessel clamp – 1each	No Change
a) Length 15 cm /6"	

b) Length 15.5 cm /6"	No Change
28 COOLEY MULTIPURPOSE CLAMP – 1each	No Change
a) Length 14.5 cm /5 ½", 90 deg	No Change
b) Length 16 cm /6 1/4", 60 deg	No Change
c) Length 20.5 cm /8"	No Change
29 Cooley-Derra ANASTOMOSIS VASCULAR CLAMP – 1each	No Change
a) Length 16.5 cm /6 ¼"	No Change
b) Length 17 cm /6 ½"	No Change
30.COOLLEY PEDIATRICS ATRAUMATIC VASCULAR CLAMP	No Change
a)Length 14 cm – 1 No	No Change
31 COOLEY CAVAL OCCLUSION CLAMP – 1 each	No Change
a) Length 21 cm – 20 Fr.	No Change
b) Length 21 cm -24 Fr.	No Change
c) Length 21 cm-26 Fr.	No Change
d) Length 21 cm -28 Fr.	No Change
e) Length 21 cm -32 Fr.	No Change
f) Length 21 cm -34 Fr.	No Change
32 COOLEY ILIAC CLAMP	No Change
a) Length 24 cm- 1No	No Change
33 COOLEY AURICULAR APPENDIX CLAMP	No Change
a) Length 25 cm – 1No.	No Change
34 Debakey TANGENTIAL OCCLUSION CLAMP – 1each	No Change
a) Length 197mm – jaw working length -45mm and depth 12mm	No Change
b) Length 265 mm – jaw working length -65mm and depth 18mm	No Change
35 Debakey Ring handle bulldog clamp – Straight shank with jaw working length 45mm – 1each	No Change
a) Straight 130mm	No Change
b) Cuved 130mm	No Change
c) Angled 45deg.130mm	No Change
d) Angled 45deg 100mm	No Change
36 Cooley Aoarta clamp – 1 each	No Change

a) 10 ¼" jaw working length – 2 ¼" & depth ¼"	No Change
b) 10" jaw working length –3" & depth ¼"	No Change
37. Castaneda Neonatal Minature Clamp - 1each	No Change
a) length 11cm/ 41/4 "	No Change
b) Length 12cm/ 4 ½"	No Change
38. Debakeymorris atraumatic vascular clamp – 1each	No Change
a) length 25cm/10"	No Change
b) length 26.5cm/10 1/2"	No Change
c) length 22cm/8 1/2"	No Change
d) length 18cm/7"	No Change
39. Tube occluding forceps with safety guard for CPB – 10 each	No Change
a) length 15cm/6"	No Change
b) length 20cm/8"	No Change
40. Aortic vascular punch of sizes – 1 each	No Change
a) 4mm	No Change
b) 5mm	No Change
41. Line organizer for circuit for cardiopulmonary bypass with slots to fit the tubings of size ½" (one slot), 3/8" (two slots), ¼" (four slots) – 2 Nos.	No Change
42. Cooley atrial retractor rigid – 1each	No Change
a) 21.5 cm	No Change
b) 23 cm	No Change
c) 27 cm	No Change
43. Diamond knives for coronary surgery – 1no.	No Change
44. IMA retractor (sterna retractor for harvesting internal mammary artery – 1No. 45. Cushing nerve hooks 19cm / 7 ½" – 1No.	No Change
46. Crile nerve hooks 14.5cm/ 5 ½" – 1 No.	No Change

47. Desmarves retractors sizes stainless steel – 1 each	No Change
a) 13cm/5” width 8mm	No Change
b) 13cm/5” width 10mm	No Change
c) 13cm/5” width 12mm	No Change
d) 13cm/5” width 14mm	No Change
48. Epicardial fat retractor for CABG medium 38mm – 1No.	No Change
49. Cooley ligature carriers size, stainless steel 17cm/ 6 ½” – 1No.	No Change
50. Debakeyadson-suction tubes, stainless steel (dedicate 4mm suction tube for coronary surgery with 5mm basket with 4 sides openings at the distal tip. Tip permanently attaches) – 2 Nos.	No Change
51. Andrew-pynchon suction tubes stainless steel – distal tip 8mm, shaft 4mmx24cm – 2Nos.	
52. Baby-Yankauer suction stainless steel – 8mm distal tip, shaft 5mm with 21cm length – 2Nos.	No Change
53. Yankauer suction – distal tip 10mm, shaft 6mm and distal tip is detachable length 29.5cm – 6 Nos.	No Change
54. Morse Sternal retractor –double blade	No Change
a) Adult – maximum spread 200mm, length – 150mm	No Change
b) Pediatric - maximum spread 160mm, length – 120mm	No Change
55. Borford Rib & Sternal retractor – single blade with two pairs of detachable blade 65mm & 45mm blade, maximum spread 250-290mm – 1No.	No Change
56. Fino-Chietto rib & sternal retractor	
a) Infant- maximum spread 70mm, length – 55mm	
b) Children- maximum spread 100mm, length – 75mm	
57. Beck”s aortic clamp –straight shanks jaw working length 40mm , depth 10mm – 1 each	No Change
a) 8”	No Change
b) 8 1/2”	No Change
58. Titanium clip applying forceps – 1 each	No Change
a) small – 19.5cm (length)	No Change
b) Medium – 19.5cm(length)	No Change
c) Large – 20.5cm(length)	No Change
59. Rumel-belmonttorniquet – 1 No.	No Change
60. Debakey”s vascular dilator – 1 each	No Change
a) 0.5mm	No Change
b) 1.0mm	No Change
c) 1.5 mm	No Change
d) 2.0mm	No Change
e) 2.5mm	No Change
f) 3.0mm	No Change

61. Langenbeck's retractors -1 each	No Change
a) 10x40mm- 21cm(length)	No Change
b) 10x28 mm- 21cm(length)	No Change
62. Langenbeck's retractor 20x30mm, 21cm (length) – 1No.	No Change
63. Allison Lungs spatula – 1 each	No Change
a) 27cm (length) & 40mm blade	No Change
b) 32cm(length) & 65mm blade	No Change
c) 26cm (length) & 132mm blade	No Change
64. Weitlaners self retaining retractor	No Change
a) 16.5cm – 1No.	No Change
b) 20cm -2Nos	No Change
65. Lambotterasporatories sharp light curve 10mm tip & 21cm length – 1No.	No Change
66. Doyen's rasporatories 17cm – 1No.	No Change
67. Leksell bone cutting rongeur light curved handle – 23cm (length) – 1No	No Change
68. Ruskin-liston bone cutting forceps – 18cm(length) – 1No.	No Change
69. Giertz rib shear 25cm -1 No.	No Change
70. Bailey rib spreader 17cm – 1No.	No Change
71. Tubb's mitral valve dilator – max. blade opening 45mm, working length – 200mm – 1No.	No Change
72. Bailey aortic valve rongeur – 31mx7.8mm jaw, working length – 4 ½" – 1No.	No Change
73. Mills endarterectomy spatula – 7" with 1.5mm blade – 1No.	No Change
74. Carwford – cooley graft tunneler, light curve, length 18" & internal dia 10mm - 1No.	No Change
75. Diethrich (straight) bull dog clamp 5cm- closing pressure 50g, weight 3g – 2 each	No Change
76. Diethrich (Curved) bull dog clamp 5cm- closing pressure 50g, weight 3g – 2 each	No Change
77. Mixer baby forceps 14cm & 19cm – 1each	No Change
78. Mixer forceps 22cm fully cvd, fine point surgical right angled jaw – 1 No.	No Change

	79. Price Thomas brochus clamp 22cm – 1No.	No Change
	80. Snugger stilliet – 3 Nos	No Change
	81. vessel loop latex free – 20 Nos.	No Change
	82. Instrument Tray: For careful sterilization and storage of fine and delicate instruments, for example microsurgery instruments & fine hooks. May be sterilized and stored together with the instruments in sterilizing container, autoclavable upto 134 deg C, low weight, simple and secure locking system and stackable – 2 Nos.	No Change
	83. Octopus cardiac tissue stabilizer with enhanced stability and flexibility – 1 No	
	a. automatic pod spread for effective visualization of anastomotic site.	No Change
	b. very secure arm for maximum stabilization	No Change
	c. Greater flexibility with unlimited positioning options with 360deg movement	No Change
	d. simple, secure one handed attachment of the clamp to the retractor	No Change
	e. Dual vacuum tubes for superior tissue capture, whale tail easily tightening facility	No Change
	f. Head-lock design for toes up position, pod spread and bend	No Change
	g. Rigid clamp to eliminate rocking	No Change
	h. Reduced handling profile to improve visibility of surgical site	No Change
20. NURSE CALL SYSTEM		Deleted
NURSE CALL SYSTEM	NURSE STATION LCD	No Change
	<ul style="list-style-type: none"> Capacity of 64 beds to be connected with single nurse call unit. 	No Change
	<ul style="list-style-type: none"> Multi Color LCD Display: 1366*768 pixels, dimensions 19" LCD display with integrated voice announcement. 	No Change
	<ul style="list-style-type: none"> The Nurse station/ Stations can monitor the status of their parents in the wards with real time alarms and status. 	No Change
	<ul style="list-style-type: none"> Bed head units with 4 colors LED light indication. Different colour for different types of emergency for better understanding. 	
	<ul style="list-style-type: none"> If the nurse don't attend a patient in pre-configured time, system will automatically notify superiours. 	No Change
	<ul style="list-style-type: none"> Nurse station receives call and display patient info, sound and voice over alert. 	No Change
	<ul style="list-style-type: none"> Set your preferable call Announcement language. 	No Change
	<ul style="list-style-type: none"> RFID sensor enabled at bed head units to call second staff or doctor in an emergency situation. 	No Change
	<ul style="list-style-type: none"> Patient can pull cord provided in toilet for an emergency. 	No Change
	<ul style="list-style-type: none"> SMS (Code Blue) Facility provided to notify doctor immediately. 	No Change
	<ul style="list-style-type: none"> Mobile application also provided for better notification alert. (Only for doctors) 	No Change

• Door indicator with four colors of super bright LED's.	No Change
• Automatically send report to superior to any unattended call.	No Change
• Automatic email facility to email daily or weekly log reports.	No Change
• Tabular format log data with calling time and response time with room number, bed number and nurse station number with date and time.	No Change
• Pie chart for Daily, weekly, monthly reports and customized reports.	No Change
• Instant log generation by using USB pen drive. Just plug and download log data.	No Change
• Hassel free wi-fi communication for a maintenance free environment and easy to access.	No Change
• All nurse station can be network through common large size LED display.	No Change
• Medi Alert Hi-Tech Nurse call System follows NABH guidelines.	No Change
Centralized Console with necessary displays and sound alert	No Change
➤ Capacity upto 64 beds	No Change
➤ Display real time data with bed number on the screen.	No Change
➤ Speaker for notification alert and voice over alert	No Change
➤ LCD display 1366*768 px, 19' inch color screen	No Change
➤ Log generation with different date and time with download and email facility.	No Change
➤ Hassel free wi-fi communication with Bed Head Units, Toilet units, Door indicators, Special key for nurses.	No Change
➤ Display all types of emergencies, with suitable blinking icons on the screen.	No Change
➤ Can store upto 1lac records.	No Change
➤ Very user friendly.	No Change
THE SYSTEMS MODULE	No Change
BED HEAD UNIT	No Change
➤ Flush mountable on wall or bead head board/panel	No Change
➤ One solid state LED used to indicate power supply	No Change
➤ Operatable on 100 to 240 V power supply	No Change
➤ Four color led used to indicate different emergency with different color	No Change
➤ Single reset button and RFID sensor for second assistant/Doctor	No Change

➤ Uses a modular electrical switch outlet	No Change
➤ Wi-Fi enabled device connect automatically with nurse call station	No Change
HEADSET UNIT	
➤ Housed in high impact resistant, fluid protected plastic enclosure	No Change
➤ Patient press call button from handset unit	No Change
➤ Flexible spring cord with keypad having press button	No Change
TOILET UNIT	
➤ Flush mountable on wall or ceramic tile	No Change
➤ Water splash protected	No Change
➤ Matting connectors or brass screw terminals for incoming wires	No Change
➤ Uses one pull cord switch toggling between ON and OFF whenever it is pulled	No Change
➤ Uses one indicating LED which flashes on a call initiation	No Change
DOOR INDICATORS	
➤ Wall or surface box mountable	No Change
➤ Four different colors LED'S to indicate different type of emergency	No Change
➤ Operate able on very low power consumption	No Change
➤ Uses best quality plastic housing	No Change
SPECIAL KEY FOR NURSES	
➤ RFID enabled keys provided to nurses for second Assistant /Doctors	No Change
➤ Easy to carry and easy to access	No Change
➤ Common RFID keys for a single nurse station	No Change
➤ Message sending (CODE BLUE) connected with RFID keys with quick readable sensors	No Change
TECHNICAL SPECIFICATION	No Change
DISPLAY	No Change

	➤ Screen size (Active Area):19 inches	No Change
	➤ Aspect Ratio: 16.9	No Change
	➤ Resolution: 1366X756px	No Change
	➤ Pixel Pitch:0.257 mm	No Change
	➤ Displayable Colors :1.07 billion(10bit)or16.7million(8bt)	No Change
	➤ Brightness (Typical): > =50000:1	No Change
	➤ Display Mode : AMVA3	No Change
	➤ Response Time (Typical)5ms	No Change
	➤ Viewing Angle(H/V) : H90 V:65	No Change
	POWER	
	➤ Input : 100-240V,50-60Hz	No Change
	➤ Consumption (Typical): < 8.5W	No Change
	BEAD HEAD UNIT	
	➤ Input :AC 100-240V,50-60Hz	No Change
	➤ CONSUMPTION (Typical) :5V	No Change
	➤ CONNECTIVITY : Wi-Fi Enabled	No Change
	➤ Sensors :RFID Sensor	No Change
	➤ Indicators : RGB Solid state LED	No Change
	ROOM INDICATORS	No Change
	➤ Input : connected with Bed Head	No Change
	➤ Indicators : Solid State RGB LED	No Change
CTVS Surgery set		
		1.CASTROVIEJO NEEDLE HOLDER:
		MICRO NEEDLE HOLDER Round Handle with rachet, enhanced needle. Grip surface, SAPPHIRE / DIAMOND DUST regular box lock. Soft pressure spring handle very delicate jaws, all edges carefully rounded in order to avoid damage of even the finest needles and sutures

	a) Length 180 mm / 7", 1.2 mm x 11 mm straight tip for suture 5-0 and smaller - 1 b) Length 180mm / 7", 0.4 mm x 11 mm straight jaw for suture 8-0 and smaller -1 c) Length 180mm / 7", 0.8 mm x 11 mm straight jaw for suture 6-0 and smaller -1
	2.RYDER NEEDLE HOLDER Intra Cardiac stainless steel TUNGSTEN CARBIDE / DIAMOND DUST, Ring Handle:
	a) Length 18 cm / 8", Round Tip 1.9 mm jaw – 2
	3.MINI RYDER with round jaw of 1.4 mm, with Titanium tip:
	a)Length 15 cm / 6" – 2 nos.
	4.BEZEMANN FINNOCHIETTO Needle Holder with TC inserts gentle smooth curve at the shaft and curve at the box joint:
	a)Length 24 cm -1
	b) Length 30cm -1
	5.CRILE – WOOD Needle Holder with box joint
	a) Length 15 cm / 6" – 3Nos.
	6.MAYO HAGGER Needle Holder:
	a) Length 20 cm / 8" – 3 Nos.
	7.HEAVY BARRY WIRE TWISTER with TC inserts
	a)Length 20 cm -1 no.
	b) Length 17cm -1 no.
	8.RUBIO MINI WIRE TWISTER with TC inserts
	a) Length 13 cm / 5" – 1
	9.Sternal Wire Cutter Pliers
	a)Length 23 cm – 1
	b) Length 17.5cm – 1
	TISSUE FORCEPS
	10.RING TIP TITANIUM MICRO TISSUE FORCEP, Sapphire / Enhanced needle grip Surface, round handle ring smooth.
	a) Length 180mm / 7" – 0.5 x 1 mm – 1 No.
	b) Length 180mm/ 7" – 0.5 x 1 -1.3 x 2 mm – 1 No.
	c) Length 210mm - 0.5 x 1 mm – 1No.
	Delicate Tissue Forceps –
	11.DEBKEY – GERALD – Atraumatic Tissue Forceps Titanium (2 each)
	a) Length 15 cm / 6" Jaw 1.5 mm
	b) Length 18 cm / 7" Jaw 1.5 mm
	c) Length 24cm Jaw 1.5mm
	12.DE- BKEY – ADSON, Atraumatic tissue Forceps
	a) Length 12.5 cm / 4 1/2" Jaw 1.5 mm - 1 No
	13.DEBKEY, angled, Atraumatic tissue Forceps
	a) Length 19.5 cm / 7 1/2" Jaw 1.5 mm - 2 No
	b) Length 19.5 cm / 7 1/2" Jaw 2.0 mm - 1 no
	14.Dressing forceps Pott-smith with TC
	a)23cm -3 No. &
	b) 18cm- 3Nos.

	15.ADSON TC SMOOTH 1 each
	a)Length 12.0 / 4 ½"
	b)Adson TC Standard Length 15.0 cm /6"
	16.CASTROVEIJO MICRO SCISSORS, Fine / nano blade Swedish edge spring style, flat handle – 1 each
	a)Length 180 mm/ 7" 45deg nano blade
	b) Length 180 mm/ 7" 60 degnano blade
	c) Length 180 mm/ 7" 90 degnano blade
	d) Length 180 mm/ 7" 125 degnano blade
	17.CASTROVEIJO MICRO SCISSORS,ultra finenano blade Radialis Round Handle – 1each
	a) Length 180 mm/ 7" 45 degnano blade
	b) Length 180 mm/ 7" 90 degnano blade
	c) Length 180 mm/ 7" 125 degnano blade
	18.METZENBAUM SCISSORS , ring handle extra light curve edge ultra edge for ultimate cutting performance .Gold plate sank
	a)Length 180 mm /7" – 2Nos.
	19 METZENBAUM SCISSORS , Straight, ring handle extra light curve edge ultra sharp edge for ultimate cutting performance Gold plate sank
	a) Length 180 mm – 1 No.
	b) Length 200 mm -1 No.
	20.BABY METZENBAUM SCISSORS ring handle extra light curve super cut ultra sharp edge for ultimate cutting peformance GOLD plate sank
	a) Length 12 cm Str. -1 No.
	b) Length 12cm CVD – 1No
	21 METZENBAUM FINO TC scissors curved – 1each
	a) Length 14 cm /5 ½"
	b) Length 18 cm /7"
	c) Length 20 cm /8 "
	21 METZENBAUM FINO TC scissors pointed – 1 No
	a)Length 18 cm /7 "
	22 IRISH SCISSORS straight
	a)Length 11.5 cm /4 ¼" – 1No.
	23 RISH SCISSORS Curved
	a)Length 11.5 cm /4 ¼ - 1 No.
	25 HOHENFELLNER Valve cutting scissors – 1each
	a) Length 21 cm /8 ¼"
	b) Length 24 cm /9 ½"
	26 NELSON METZENBAUM SCISSORS WITH tc EDGES CURVED – 1 each
	a) Length 18 cm / 7"
	b) Length 23 cm /9 "
	27 ATRAUMATIC VASCULAR CLAMP COOLEY – BECK vessel clamp – 1each
	a) Length 15 cm /6"
	b) Length 15.5 cm /6"
	28 COOLEY MULTIPURPOSE CLAMP – 1each
	a) Length 14.5 cm /5 ½" ,90 deg
	b) Length 16 cm /6 1/4" , 60 deg
	c) Length 20.5 cm /8"

	29 Cooley-Derra ANASTOMOSIS VASCULAR CLAMP – 1each
	a) Length 16.5 cm /6 ¼”
	b) Length 17 cm /6 ½”
	30.COOLLEY PEDIATRICS ATRAUMATIC VASCULAR CLAMP
	a)Length 14 cm – 1 No
	31 COOLEY CAVAL OCCLUSION CLAMP – 1 each
	a) Length 21 cm – 20 Fr.
	b) Length 21 cm -24 Fr.
	c) Length 21 cm-26 Fr.
	d) Length 21 cm -28 Fr.
	e) Length 21 cm -32 Fr.
	f) Length 21 cm -34 Fr.
	32 COOLEY ILIAC CLAMP
	a) Length 24 cm- 1No
	33 COOLEY AURICULAR APPENDIX CLAMP
	a) Length 25 cm – 1No.
	34 Debakey TANGENTIAL OCCLUSION CLAMP – 1each
	a) Length 197mm – jaw working length - 45mm and depth 12mm
	b) Length 265 mm – jaw working length - 65mm and depth 18mm
	35 Debakey Ring handle bulldog clamp – Straight shank with jaw working length 45mm – 1each
	a) Straight 130mm
	b) Cuved 130mm
	c) Angled 45deg.130mm
	d) Angled 45deg 100mm
	36 Cooley Aoarta clamp – 1 each
	a) 10 ¼” jaw working length – 2 ¼” & depth ¼”
	b) 10” jaw working length –3” & depth ¼”
	37. Castaneda Neonatal Minature Clamp - 1each
	a) length 11cm/ 41/4 “
	b) Length 12cm/ 4 ½”
	38. Debakeymorris atraumatic vascular clamp – 1each
	a) length 25cm/10”
	b) length 26.5cm/10 1/2”
	c) length 22cm/8 1/2”
	d) length 18cm/7”
	39. Tube occluding forceps with safety guard for CPB – 10 each
	a) length 15cm/6”
	b) length 20cm/8”
	40. Aortic vascular punch of sizes – 1 each
	a) 4mm
	b) 5mm
	41. Line organizer for circuit for cardiopulmonary bypass with slots to fit the tubings of size ½” (one slot), 3/8” (two slots), ¼” (four slots) – 2 Nos.
	42. Cooley atrial retractor rigid – 1each
	a) 21.5 cm
	b) 23 cm
	c) 27 cm
	43. Diamond knives for coronary surgery – 1no.
	44. IMA retractor (sterna retractor for harvesting internal mammary artery – 1No.
	45. Cushing nerve hooks 19cm / 7 ½” – 1No.
	46. Crile nerve hooks 14.5cm/ 5 ½” – 1 No.
	47. Desmarves retractors sizes stainless steel – 1each
	a) 13cm/5” width 8mm

	b) 13cm/5" width 10mm
	c) 13cm/5" width 12mm
	d) 13cm/5" width 14mm
	48. Epicardial fat retractor for CABG medium 38mm – 1No.
	49. Cooley ligature carriers size, stainless steel 17cm/ 6 ½" – 1No.
	50. Debakeyadson-suction tubes, stainless steel (dedicate 4mm suction tube for coronary surgery with 5mm basket with 4 sides openings at the distal tip. Tip permanently attaches) – 2 Nos.
	51. Andrew-pynchon suction tubes stainless steel – distal tip 8mm, shaft 4mmx24cm – 2Nos.
	52. Baby-Yankauer suction stainless steel – 8mm distal tip, shaft 5mm with 21cm length – 2Nos.
	53. Yankauer suction – distal tip 10mm, shaft 6mm and distal tip is detachable length 29.5cm – 6 Nos.
	54. Morse Sternal retractor –double blade
	a) Adult – maximum spread 200mm, length – 150mm
	b) Pediatric - maximum spread 160mm, length – 120mm
	55. Borford Rib & Sternal retractor – single blade with two pairs of detachable blade 65mm & 45mm blade, maximum spread 250-290mm – 1No.
	56. Fino-Chietto rib & sternal retractor
	a) Infant- maximum spread 70mm, length – 55mm
	b) Children- maximum spread 100mm, length – 75mm
	57. Beck"s aortic clamp –straigh shanks jaw working length 40mm , depth 10mm – 1each
	a) 8"
	b) 8 1/2"
	58. Titanium clip applying forceps – 1 each
	a) small – 19.5cm (length)
	b) Medium – 19.5cm(length)
	c) Large – 20.5cm(length)
	59. Rumel-belmonttorniquet – 1 No.
	60. Debakey"s vascular dilator – 1each
	a) 0.5mm
	b) 1.0mm
	c) 1.5 mm
	d) 2.0mm
	e) 2.5mm
	f) 3.0mm
	61. Langenbeck"s retractors -1 each
	a) 10x40mm- 21cm(length)
	b) 10x28 mm– 21cm(length)
	62. Langenbeck"s"skocher"s retractor 20x30mm, 21cm (length) – 1No.
	63. Allison Lungs spatula – 1 each
	a) 27cm (length) & 40mm blade
	b) 32cm(length) & 65mm blade
	c) 26cm (length) & 132mm blade
	64. Weitlanersself retaining retractor
	a) 16.5cm – 1No.
	b) 20cm -2Nos
	65. Lambotterasporatories sharp light curve 10mm tip & 21cm length – 1No.
	66. Doyen"srasporatories 17cm – 1No.
	67.Leksell bone cutting rongeur light curved handle – 23cm (length) – 1No
	68. Ruskin-liston bone cutting forceps – 18cm(length) – 1No.
	69.Giertz rib shear 25cm -1 No.
	70. Bailey rib spreader 17cm – 1No.

	71. Tubb's mitral valve dilator – max. blade opening 45mm, working length – 200mm – 1No.
	72. Bailey aortic valve rongeur – 31mx7.8mm jaw, working length – 4 ½” – 1No.
	73. Mills endarterectomy spatula – 7” with 1.5mm blade – 1No.
	74. Carwford – cooley graft tunnel, light curve, length 18” & internal dia 10mm - 1No.
	75. Diethrich (straight) bull dog clamp 5cm-closing pressure 50g, weight 3g – 2 each
	76. Diethrich (Curved) bull dog clamp 5cm-closing pressure 50g, weight 3g – 2 each
	77. Mixer baby forceps 14cm & 19cm – 1each
	78. Mixer forceps 22cm fully cvd, fine point surgical right angled jaw – 1 No.
	79. Price Thomas brochus clamp 22cm – 1No.
	80. Snugger stillet – 3 Nos
	81. vessel loop latex free – 20 Nos.
	82. Instrument Tray: For careful sterilization and storage of fine and delicate instruments, for example microsurgery instruments & fine hooks. May be sterilized and stored together with the instruments in sterilizing container, autoclavable upto 134 deg C, low weight, simple and secure locking system and stackable – 2 Nos.
	83. Octopus cardiac tissue stabilizer with enhanced stability and flexibility – 1 No
	a. automatic pod spread for effective visualization of anastomotic site.
	b. very secure arm for maximum stabilization
	c. Greater flexibility with unlimited positioning options with 360deg movement
	d. simple, secure one handed attachment of the clamp to the retractor
	e. Dual vacuum tubes for superior tissue capture, whale tail easily tightening facility
	f. Head-lock design for toes up position, pod spread and bend
	g. Rigid clamp to eliminate rocking
	h. Reduced handling profile to improve visibility of surgical site