

OFFICE OF THE PRINCIPAL : G.S.V.M. MEDICAL COLLEGE, KANPUR

Technical specification of the Equipments against tender notice No. 121/PS/TN/Equip/2014-15 dated 30.05.2015

For Medical College, Kanpur

1. Radio Frequency Pain Management Generator

The equipment should

- Have Touchscreen interface.
- Have 0-50 watt power output.
- Have thermal & pulsed RF treatment on 1, 2, 3 Or 4 electrodes.
- Bipolar RF on 1 or 2 pair of electrodes.
- Measure and display temperature between 0-110 degrees.
- Measure impedance 0 – 3000 ohms.
- Have continuous RF output & pulsed RF output functions.
- Having output test plug to test all outputs from generator before & during the procedure.
- Have stimulator with pulse duration of 0.1, 0.5, 1, 2, 3 milliseconds and pulse rate 2- 200 hz.
- Stimulate with 0.01V increments.
- Have timer 0.05 – 30.00 minutes.
- E-dose functionality.
- Should have RCE epidural electrode compatibility for neuropathic pain.
- Should have capability of data export & printing.
- Should have intradiscal electrode compatibility.
- Should have echogenic RF cannulae compatibility.
- Should have stereotactic electrode compatibility.
- Also have spinal cannulae / electrodes of various lengths 5cm, 10cm & 15cm
- Should be compatible of epidural stimulation with epidural stim electrode.
- System should be compatible for disposable electrodes.
- Systems should be USFDA approved.
- Should have at least 3 or more installations in Government institutions of U.P (proof should be attached).
- Local service center will be preferable

2. Autoclave

High Pressure Horizontal Rectangular Sterilizer Chamber Size : 600mm x600mm x1200mm (2'x2'x4'), Single door, electric load 18kw on 400/440 V, 3 phase 4 wire AC supply suitable for operation on electricity. Chamber cap.432 ltrs.

The chamber and door would be made of stainless steel AISI 316 quality and electric steam generator would be made of stainless steel AISI 304 quality. The jacket, outer cover would be in rolled steel.

Steam working pressure 1.2 Kg/cm² corresponding to working temperature of 121°C

The unit would be manufactured as per Bureau of Indian Standards specification and would bear certification mark IS: 3829 (Part-I), ISO 13485:2003, CE Certified.

The sterilizer would be incorporated with the following mountings and fittings:

- a) Multiport operating valve consisting of 5 positions-off/slow, exhaust, vacuum dry, sterilization and fast exhaust also fitted with one pressure gauge and one compound gauge.
- b) Mechanical ejector
- c) Self sterilizing vacuum drier
- d) One spring loaded safety valve and one vacuum breaker.
- e) Chamber discharge line would consist of one plug screen, one dial thermometer, one swing check valve, one steam trap.
- f) Automatic self locking device- The door would have automatic locking device when it is under pressure.
- g) Stainless steel electric steam generator fitted with 3 nos. 6 KW heaters each, one low water protection and one automatic pressure controller, one air break contactor with toggle switch indicating lamps, gauge glass assembly for the steam generator would have 2 nos. automatic shut off valves. The heaters would be mounted on a thick stainless steel plate.

3. Plasmapheresis

1. Should perform Plasma Therapies
2. Should have a large display screen.
3. Provision for Extra Corporeal Circuit with an integrated plate warmer
4. The machine should have an integrated single load cell weighing system to Provide accurate measuring.
5. Blood Flow range from 10 to 500 ml / min.
7. Arterial Pressure and venous pressure monitoring
9. Must have Pre Filter monitoring
11. The machine should have weight reduction ability
13. Should have a optical blood leak detector.
14. Should have all the facilities of CRRT functions.
15. Should provide an Anticoagulation interface
16. Should be able to accommodate extracorporeal individual replaceable lines
17. Should be upgradeable.
18. Electrical nominal voltage 110/230 V AC.
20. Should be capable for intermediate therapy exchange.
21. Should have online automatic blood leak calibration facility.
22. Should be USFDA/ European CE /ISO approve

4. X-ray Machine

The high power general radiography system should have a High Frequency inverter type generator.

X-ray GENERATOR:

- High frequency X-ray Generator with inverter having frequency of 30 KHz or more should be provided.
- Power output of generator should be 40 KW or more.
- Radiographic KV Range should be 40 to 150 KV or more at 1 KV step.
- Radiographic mA Range (Rad.) : 300-600 mA.
- Exposure time (Rad.): 1ms to 3 sec.

Control:

A compact , Soft Touch control panel having following functions & indications should be provided. The panel can be supplied in Floor or Wall mount with Spill Proof design. Following features should be available on the control panel.

- Machine ON/OFF Switch.
- LED readout for parameter display
- KV & mAs increase and decrease switches.
- Tube focal spot selection Switch.
- Ready and x-ray on switch with indicators
- Bucky Selection switch.
- Self diagnostic Programmed with indicators for Earth fault error, KV error, filament error & Tube's Thermal Overload.
- Anatomical Programming Radiography : 200 programmes or more.
- It would be preferable to have an audio as well as visual indicators to display the system status during exposure to prevent any double exposure occurrences.

A dual action hand switch with retractable cord should be provided for Radiation Protection of operator.

X-RAY TUBE:

- One No. high speed Rotating Anode X-ray tube thermally protected having focal spot of 1.0 & 2.0 mm²
- Anode heat storage capacity of tube should be more than 150 KHU.
- One pair of 5-10 meter long H.V. Cable.
- One No. multi leaf Collimator with maximum field size of size 43 x 43 cm at 100 cm SID. With auto shut off facility should be provided.

TUBE STAND:

- Floor to Ceiling stand with counter Balances Tube Head (Rotatable \pm 180 degree), 360 Degree Rotatable; mounted on Floor Ceiling Rails for convenient movements should be provided.

TABLE

- Floatex table with 4-way movement of the table top. Longitudinal movement of tabletop should be more than 800 mm & transverse movement should be more than 200mm.
- The table should consists of motorized reciprocating bucky with automatic sensing of cassette size.
- The tabletop should be made of low radiation absorption, waterproof material.

VERTICAL BUCKY STAND:

- Vertical Bucky stand with oscillating Grid of Ratio 8:1, 85 lines should be provided.
- The Bucky should moves up & down & is equipped with a stainless steel cassette tray.
- The stand should be floor-mounted type & can accommodate cassettes up to 14" X 17". The Bucky should be tilted in 6 steps of 15 degree Angle each for various Radiographs.

POWER REQUIREMENT:

- The unit should be operable on 3 phase, 440 Volts AC 50 Hz with line resist less than 0.4 Ohms. Line Regulation \pm 10%.

OTHER REQUIREMENTS :

- The company should be ISO-9001:2008, ISO-13485:2003 company with CE Certified products.
- The Unit should be approved by AERB.
- The company should have a local service centre.
- The company should have proven track record in Govt. Sector.
- The machine should have at least 5 year of warranty and 5 year of CMC post warranty period.

5. Microdebrider

ENDOSCOPIC SINUS MICRODEBRIDER & HIGH SPEED DRILL SYSTEM

Console & Footpedal

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

Debrider Handpiece :

- Should be able work up to the speed of 12000 RPM in forward rotation and 5000RPM in oscillation mode.
- Should have finger tip control to rotate only the tip of the blade up to 360 deg.
- Should have straight suction path to reduce clogging and allow efficient tissue removal.
- Should have integrated blade locking system to lock the blade tip rotation.
- Should have integrated side grooves and cable clips to provide better tubing management.
- Should have Titanium body to avoid rusting.

- Should be light in weight and ergonomically designed.
- Should have different varieties of debrider Blades like Straight and Curved blades range starting from 12 degree and available upto 120 degree.
- Should have rota table laryngeal blades from 2.9 mm - 3.5 mm & 4 mm. Length from 18 cm, 22 cm. 22.5 cm, 27 cm & 27.5 cm.
- Should have Tonsillectomy , Adenoidectomy , Inferior Turbinoplasty blades.
- Should have Tip-rotatable subglottic, tracheal, bronchial blades.
- Should have frontal sinus straight & curved burs, DCR burs.

Stapes / Middle Ear advance surgery Handpiece :

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

6. ON LINE UPS -20 KVA:

SI No	Technical; Specification for 20 KVA UPS Systems for ICU			
	Parameter	Required Parameter	Vendor Offered Parameter	Compliance, Yes / No
1	UPS Ratings KVA / KW	20 KVA		
2	Back-up	one hour back up time		
3	UPS Make			
4	Battery Type /Make	VRLA SMF of Amara Raja/Panasonic/ LEOCH or eqv.		
5	UPS Model No. Offered	to be mentioned by vendor		
6	Input/Output Phases	Three Phase with ground/ Single Phase + N		
7	Technology	True on line UPS with Double Conversion, VFI Technology		
9	Paralleling	Parallelable upto 4 units (Required for future expansion of load)		
8	Rectifier Section			
9	Technology	Fully DSP Based Active Front End IGBT Rectifier.		
10	Input voltage	110V~276V		
11	Input Power Factor	0.99 @ full restive load		
12	Input frequency	45-55 Hz		
13	Input Current THDI	<=5% with R full Load		
14	DG Set Requirement	Should not be more than 1.25 times		
15	Inverter Section			
16	Technology	Microprocessor / DSP based PWM - IGBT based Technology		
17	UPS output Power factor	20 KVA		

18	Output voltage rating	208/220/230/240 V - Selectable		
19	Output voltage regulation	± 1% - 100% linear load condition		
20	Output Frequency	± 0.5 hz or better(free running mode)		
21	Overload Capacity	≤100 -110% for 5 minutes ≤110-130% for 1 min		
22	Output harmonic distortion (Ph/N)	2% THD maximum for a 100% linear load.		
23		5% THD maximum for 100% non linear load.		
24	Crest Factor	3:1 minimum		
25	Battery			
26	Type /Make	VRLA SMF of Amara Raja/Panasonic/LEOCH or eqv.		
27	Battery Placement	Suitable Battery Rack and Accessories provided for battery interconnections and UPS to Battery connections etc		
28	Battery AH rating & Quantity	12V*24Nos. And one hour back up time		
29	End of Battery discharge Voltage for battery calculation	1.7 to 1.75 V / cell		
30	Bypass			
31	Automatic integral bypass	The integral bypass performs an automatic transfer of the critical load from the inverter to the bypass, in the events of overload, over temperature, or inverter failure conditions with zero transfer time.		
32	General			
33	Acoustical Noise @ 1 Meter	Less than 55 dB @ 1 metre		
34	Output wave form	Pure sine wave		
35	Display and control			
36	Metered parameters	Input AC voltage		

37		Input AC Current		
38		Input AC frequency		
39		Output AC voltage		
40		Output AC current		
41		Output frequency / voltage		
42	Audible Alarms	Required		
43	ECO Mode / High Efficiency Mode	Required for improving Efficiency to upto 98%		
44	Efficiency (Normal Mode)	upto 94% @ full load and battery fully charged.		
45	Monitoring ON LAN	SNMP card to monitor UPS over LAN / WAN is required. Environmental Monitor Probe kit is required alongwith Web/SNMP Card to monitor Temperature of UPS Room through SNMP Software.		
46	Warranty	As per OEM		
47	Standard Ports required in UPS	Communication Ports (1) RS-232, (1) USB, (1) EPO - Emergency Power off contact required in UPS to switch off UPS remotely in event of emergency.		
48	Other Communication Options	MODBUS Card , RELAY CARD		
49	Surge Protection Device	External SPD with indication. According to IEC 61643-1 , Class I+II, Capacity upto 50kA		
52	Certifications	RoHS EMC Compliance : IEC 62040-1 Quality: ISO 9001: 2000 and ISO 14001:1996		
53	Standards	The Dealer offering the System should be experienced and should be ISO 9001:2008 certified.		

7. R O Water Plant:

Capacity 500 liters per hours

Special feature to be incorporated in RO water purifier

1. Online digital conductivity meter with auto tripping.
2. Online digital TDS meter
3. Pressure sensors
4. Flow meters
5. Periodic back flushing & disinfection.
6. Temperature display
7. Provisions for periodic disinfection of entire system.
8. Dual media filter & micron filters with reverse osmosis membrane and pressure tube.
9. Constant RO water pressure maintenance device & flow meter to measure online flow of water.
10. All the pumps tanks, joints & fitting must be of high grade stainless steel 304.
11. Micro processor control panel on automatic and manual control modes.
12. UV filtration
13. Charcoal filter and sand filter.
14. Installation should be with complete fitting and plumbing work.

8. Glaucoma Equipment:

Pachymeter Probe for Soomed Pach Scan

Sonomed Pacscan Plus 300+series 1.20 MHz straight Pachymeter probe

Measurement Range: 125 – 1000 microns

Measurement accuracy - ± 1 microns

20 MHz probe

electronic accuracy - ± 1 microns

clinical accuracy - ± 5 microns

A SCAN BIOMETER PROBE

Technical Specifications:

From Sonomed Pac Scan 300 + series

Selected tissue velocity for each structure

Electronic accuracy - ± 0.023 microns

Clinical accuracy - ± 0.1 mm

GOLDMANN 2 MIRROR GONIOSCOPY LENS

Technical Specifications:

Volk'S , 2 mirror Gonio lens.

+90 D LENS FOR FUNDUS EXAMINATION

Volk'S + 90 D slit lamp biomicroscopy fundus lens.

FINE VISION CHART WITH PATIENT EDUCATION

Computerized Visual Acuity Charts, provision of English, Hindi, E-chart, Numeric Chart for various distances, Contrast Vision, Amblyopia Therapy, Children Education, Colour vision with LED Screen of 26" with two remotes.

LapTop for data Storage

Processor-Intel Core-i5-5200U, Speed-2.2GHz, Cache-3 MB, RAM-4 GB, Type-DDR-3, Speed-1600 MHz, Hard Disk-1 TB, Speed (RPM)-5400, Screen Size-13.3 Inches, Maximum Display Resolution (dpi)-1366 x 768, Panel Type-HD anti-glare WLED-backlit, GPU Model-Intel HD 5500 Graphics.

RECORDING SYSTEM FOR GLAUCOMA SURGERIES

Video recording cord to suit for Laptop, Long chords for incoming and outgoing signals.

LED TV DISPLAY FOR DEMONSTRATION-

32" Screen, LED, HD, Provision of wifi, Long chord enable display outside from Operation Theatre.

TECHNICAL SPECIFICATIONS OF GLAUCOMA RELATED EQUIPMENTS

APPLANTION TONOMETER

Technical Specifications:

Mountable on peg on microscope or insert able in the guide plate on slewing peg for microscope and illumination unit arm

Measuring force: generated dy leverage weight

Measuring Range- 0-80 mm Hg

Measurment divergence: of the force impingement on the measuring prism over a

Measuring range from 0 – 58.84 mN

Standard divergence: 0.49 mN =/3 S= /<1.5% of rated value

Reverse Span: =/0.49 mN

Net weight without accessories= 0.500 Kg – 0.410 Kg

OPHTHALMIC OPERATION TABLE:

Technical Specifictions:

Dimensiond:

Length : 890 mm (35.03")

Width : 690 mm (27.16")

Net Width : 12 Kg.

Electronic Movements:

Up & Down

Minimum Height : 610 mm (24.1")

Maximum Height : 890 mm (35.03")

Stroke Length : 280 mm (11.02")

Weight Capacith : 150 Kg

Tiling (Forward & Reverse)

Back Rest section 30

Leg section 20

HUMPHREY'S AUTOMATED PERIMETER – REPAIR

Humphre'S Automated Perimeter manufactured by Carl Zeiss Germany.

For Medical College, Banda

1. **Table with marbles for stainless steel top 6.2X2X3**

Table with stainless steel tops 6'1"x2'x3' high on sturdy tubular frame, with sliding in and out receptacle for waste. **SS Standard size: 6".1"X2"X3"** Is entirely made of S.S. (steel grade 1.4301), with a frame made of rugged torsion resistant S.S. profiles and 4 S.S. swivel locking castors (125mm dia.). the table top has a depth of approx. 15mm sloping towards the drain. Large radii on all inside corners provided for easy cleaning. A 10 L container with bayonet lock, mounted be neat the down spout, is applied to a rack in the base frame. An air tight compartment mounted beneath the table top serves for an odour free storage of drapes. It features a stainless steel full extension drawer and a removable S.S. tray provided with perforated plate and a removable lid. Manufacturer should have ISO 13485 & CE certification

2. **Mortuary Cooler with arrangement to keep at least 8 bodies**

1. Corrosion Free interior and exterior
2. Audio visual alarm for high and low temperature.
3. Designed for long storage of cadaverous.
4. PUF insulation on all sides
5. Special Design ensuring best hygiene with washing & draining facility.
6. Reliable
7. Special Loading trolley.
8. energy efficient and sturdy construction
9. Light weight
10. Digital temperature indication
11. Low maintenance
12. Microprocessor based/PLC temperature control.
13. Double walled cooling units
14. Outer body of the mortuary chamber should be constructed out of thick S.S. sheets. The inner chamber should be made of heavy gauge stainless steel sheet of SS-304 grade. The 100mm gap between the walls filled high grade poly urethane insulation, which ensures maximum thermal efficiency.
15. The doors connected by very sturdy chrome plate hinges and fitted with hard chrome plated lubricated latches for opening of the door.
16. The door made of galvanized steel sheets, lined with stainless steel for extra protection and long life.
17. All the doors fitted with high quality neoprene rubber gaskets for air light fittings with very sturdy casters
18. CFC free compressors, conforming to last international standards and guidelines. Twin compressors of which one is standby.
19. Vapour proof lamp inside

20. Temperature range 2 to 4° c with temp failure alarms.
21. Suitable Voltage automatic stabilizer O/P 230 +/- 10% I/P 150-280 volts.to be Installed at each site as per the site conditions.
22. The unit should be (3x2) x2 or (2x2) x 3 format.
 Mortuary cooler with arrangement to keep at least 8 bodies or suitable alternative arrangement.
 Mortuary chamber Temp. 2° to 5°C
 Eight bodies
 With Voltage Stabilizer
 Should have ISO 13485 & CE certification

3. **Storage tank to hold 10 cadavers, made of concrete with copper lid.**

Type 304 stainless-steel construction built-in cadaver submersion storage system with an integral cadaver platform that can be raised when needed for study and lowered for storage.

4. **Plastic tanks for storing soft and dissected parts.**

5. **Meat cutting machine for thin body sections ¼ trans and vertical ½ for gross anatomy section ; study**

Useful for preparing specimen of big size in Anatomy and Meat Departments. Fitted with large moving table and extension table operated on four ball-bearing rollers. Used extensively in the meat packing, and wholesale fish industry, for handling sword fish and large halbutes etc.

Specifications	(Approx. Size)
Size of cutting table	785 x 585 mm
Total Table Travel	1245 mm
Extension table	455 x 760 mm
Size of wheel	455 mm
Height	1700 mm

The table is made of thick S. S. sheet with special heavy axles for easy and firm movement. Supplied complete with one blade, starter, cord and plug, works on 220 V, single phase, 50Hz, AC Supply.
 Should have ISO 13485 & CE certification

6. **Microscope Monocular**

Standard monocular body, tube inclined upto 90 Deg. Tube length 160mm with revolving triple nose piece. Separate coarse and fine slow motion focusing knobs. **Stage size 120x120mm with Mechanical stage** and fixed with Provided with movable substage condenser N.A.1.25 with iris diaphragm. Illumination by Plano-concave reflector. Supplied with standard accessories.

Achromatic Objectives : 10x,40x/45x SL
Huygenian eyepieces : 5x &15x

7. Microtome. Sledge, large cutting

- ☛ With precision micrometer feed mechanism with mono-block system; section thickness setting from 0.5 μm to 60 μm
- ☛ Automatic trimming mode two stages 10 μm and 30 μm
- ☛ Vertical stroke 64 mm and maximum horizontal feed range 28 mm.
- ☛ Integrated hand wheel that locks in any position.
- ☛ Display for Section Counter
- ☛ Section thickness adjustment knob on both sides, right as well as left
- ☛ Direct fitting of all specimen holders. Maximum specimen size 55 mm x 50 mm.
- ☛ Easy orientation of Specimen holder in two axes.
- ☛ Specimen Retraction not more than 40 μm
- ☛ Lateral coarse feed wheel.
- ☛ Integrated Large section waste tray 1100 ml or more.
- ☛ Plate on top of instrument for keeping blocks, blades, brush etc.
- ☛ Color coded finger guard on Blade holder for enhanced safety
- ☛ Safety warning for end position approach.(*)
- ☛ Direct easy fitting of all knife carriers with precision bar guideway.
- ☛ Blade Carrier to be fitted on bar guideway to eliminate vibration when sectioning hard tissues.
- ☛ Accessories: orientable specimen clamp, Disposable blade holder common for Low as well as High Profile Blades, 1 pk of low disposable blades (50/pk).
- ☛ Manufacturer must be ISO certified and product must conform to European CE or American FDA

8. Microtome Rotary (Imported)

- Ergonomic design.
- Compact dimensions.
- Vertical guidance by zero-backlash and maintenance free cross roller bearings
- Electronic precision feed mechanism with stepping motor technology
- Total Section thickness range from 0.5 up to 500 μm
- Especially smooth running handwheel.
- One hand quick clamp change
- Fine orientation with one hand operation and zero positioning
- Easy exchange of specimens.
- Specimen retraction during return travel, can be turned off.
- Two section thickness areas that can be pre selected easy switchable
- Removable operating panel with full graphic display.
- Indication of all relevant information such as section thickness, trim thickness, number of sections, section thickness sum, remaining travel of the specimen feed as well as time and date.
- Reduced number of buttons for intuitive operation.
- Patented and ergonomic one knob operation of the specimen feed with variable speed adjustment.

- Indication of cutting parameters, can be switched over to large indication.
- Large section waste tray, covering the entire working area.
- Ergonomically optimized operating elements for non tiring usage.
- Design with highest demands concerning operational safety and ergonomics.
- Integrated removable storage plate.
- Stepping motor micrometer mechanism
- Specimen retraction during return travel: 40 um can be turned off
- Fine section thickness feed via precision stepping.
 - motor from 0.5 to 100 microns:
 - up to 2 um in 0.5 um increments,
 - up to 10 um in 1 um increments,
 - up to 20 um in 2 um increments,
 - up to 30 um in 5 um increments,
 - up to 40 um in 10 um increments,
 - up to 100 um in 20 um increments.
- Trimming thickness feed via precision stepping motor up to 500 um:
 - up to 10 um in 5 um increments,
 - up to 100 um in 10 um increments,
 - up to 200 um in 20 um increments,
 - up to 500 um in 50 um increments.
- Horizontal feed range 28 mm.
- Vertical specimen stroke 72 mm.
- Specimen orientation universal 8°, can be rotated 360°
- 230 V 50 Hz 420 x 490 x 280 mm (W/D/H) Wt: 28 Kg
- To be supplied with Disposable Blade holder common for both High and Low Profile Blades
- 1 pkt of Low Profile Disposable Blades 50/pk
- Manufacturer must be ISO certified and product must conform to European CE or American FDA

9. Paraffin Embedding Bath

Should be a Fully programmable, automatic On/ Off control, two console unit, one heated paraffin dispensing unit and another Cryo console with cooling plate

I- Paraffin Dispensing Unit

1. Capacity of paraffin tank: min 5 liters
2. Capacity of Thermal Chambers for storage of molds: min 1.8 liters
3. Temp. range of Paraffin tank: 50- 70 deg C
4. Temp. range of Thermal Chamber: 50- 70 deg C
5. Temp. range of Hot plates & forceps wells: 50-70 deg C
6. Connection for Electrically heated forceps
7. Six heated wells for normal forceps, 3 on either side of the wax dispensing line.
8. Precisely metered and adjustable gravity feed paraffin dispenser to deliver the right amount of paraffin.
9. Both Finger touch plate and foot switch for control of paraffin flow.
10. Large warm working surface on either side for min 10 cassettes
On each side.
11. Control panel must have 2 line LCD display and easy navigation through the menu with help of simple touch key buttons.

12. Should have a Magnifying lens adjustable in any position, large cold spot & illumination for specimen orientation.
13. Unit should be CE/FDA approved

II- Cold Console

1. Capacity of freezing up to 60 blocks at a time.
2. Temp. range of cold plate: 0- 12 deg C, adjustable in steps of 1 deg C.
3. Compressor to be extra quiet to reduce noise fatigue.
4. Cold console can work independently without switch –on dispensing console
The system should work on 220-240 V, 50 Hz. Should use CFC free gas and manufacturer must have ISO certification.
Product must conform to European CE or US FDA
To be supplied with 100 nos. Plastic Embedding Rings for making paraffin Blocks and 10 nos. reusable Metallic Base molds

10. Balance Analytical capacity 200 gm and sensitivity 1/10mg

SPECIFICATION

Capacity : 220 gm
 Readability : 0.1 mg
 Repeatability : 0.1 mg
 Linearity \pm : 0.2 mg
 Pan Size : 85 mm \varnothing
 Response Time : 3 – 4 sec
 Calibration : Automatic External
 Tare Range : Full
 Operating Temperature : 10o C to 40o C
 Power Supply : AC Adaptor 230V / 11 V AC or 120V / 11 V AC

FEATURES:

- Automatic External Calibration
- A built in under hook for below weighing (optional).
- Easy to read LCD Display with back light.
- Density measurement for solid and liquid (optional).
- Standard RS 232C Interface, USB slot
- High Resolution, Quick Weighing, Accurate Result
- Based on E.M.F.C Technology
- S.S. Weighing Pan, Level Indicator, Adjustable fit,
- Tare Range up to max. Capacity of the balance.

11. Bones (Dis-articulated) sets

12. Racks Steel

Made of slotted angle of 14 swg. with 5 compartment with 6 shelves made of 18 swg CRC sheet with powder coated frame size of shelf 900 x 400 mm

Size : 1900 x 900 x 400 mm (H x W x D)

13. Embalming machine for cadavers

14. Electronic Stimulator

A turn controlled pulse generator

Mode – Single, External & Repetitive.

Pulse width – 0.5 and 1.5 ms, switch selectable.

Repetitive Frequency – 0.5, 1, 2, 3, 5, 7, 10, 15, 20, 50 & 100hz

Twin pulses should be provided

Delay adjustable from 5 ms to 250 ms should be provided

Out put voltage – 0 to 30 volts (two positions 0-3 & 0-30 v vernier controlled)

Should have ISO 13485 & CE certification

15. Dale's bath for internal organ

- The system should include a digital single unit Perspex bath with tissue chamber, pre-heating reservoir coil, tissue holder, micro positioner, a water pump(inbuilt), and digital temperature controller.
- Should be supplied with a standalone recorder to monitor & record the displacement curve on three channel colored TFT Monitor.
- Recorder unit should have built in stimulator.
- Recorder should have facility to store the recording and review the recorded data on inbuilt LCD screen without need of any computer.
- Recorder unit should have 11 steps sensitivity.
- Recorder should have 11 steps sweep speed i.e. .5, .1, .2, .5, 1, 2, 5, 10, 20, 50, 100 div/sec.
- A software should be provided free of cost along with the system to review and printing the recorded data from PC whenever required. (No need to quote cost of computer).
- Should be supplied with Force Transducer & Isotonic Transducer.
- For human experiment, transducers/ electrodes to perform following tests i.e ECG, EEG, EMG, GSR, Pulse, Respiration, phonocardiogram, hand dynamometer & Temperature should be supplied

16. Isolated Organ Bath

- The system should include a single unit Perspex bath with tissue chamber, pre-heating reservoir coil, tissue holder, micro positioner, a water pump(inbuilt), and digital temperature controller.
- Should be supplied with a standalone recorder to monitor & record the displacement curve on three channel colored TFT Monitor.
- Recorder unit should have built in stimulator.
- Recorder should have facility to store the recording and review the recorded data on inbuilt LCD screen without need of any computer.

- Recorder unit should have 11 steps sensitivity.
- Recorder should have 11 steps sweep speed i.e. .5, .1, .2, .5, 1, 2, 5, 10, 20, 50, 100 div/sec.
- A software should be provided free of cost along with the system to review and printing the recorded data from PC whenever required. (No need to quote cost of computer).
- Should be supplied with Force Transducer & Isotonic Transducer.
- For human experiment, transducers/ electrodes to perform following tests i.e ECG, EEG, EMG, GSR, Pulse, Respiration, phonocardiogram, hand dynamometer & Temperature should be supplied

17. Surgical Instrument for operative procedures syringes pulleys etc

18. Microscopes Oil Immersion

1. Microscope scope standard with widefield eyepieces NWF10x, Hard anti-reflection coated colour coded Parfocal Achromatic objectives 10x, 40x & 100x (spring, oil immersion)
2. Attachable granded mechanical stage (120x125mm) with convenient adjustment for manipulation of slides.
3. Should have plano – concave mirror & external light source and adjustable for mount, sub stage Abbe Condenser (N.A. 1.25) fitted with iris diaphragm and blue filter.

19. Polygraph

- System should be a 12 channel data acquisition system for human physiology with following specification:
 1. Analog Inputs : 10 inputs.
 2. Bio potential Inputs : 2 inputs, these 2 inputs should be in addition to the ten analog input channels-expanding the total number of channels upto 26 total
Recordable channel.
 3. Sampling : ADC Configuration – Each channel should be sampled simultaneously
ADC resolution – 16 bit.
Max. Sampling Rate – 100000 samples per sec per channel simultan.
 4. Low Voltage Stimulator : Output configuration: 2output independent.
Max. Out put current : 35mA.
Output ranges : +_15v
 5. High Voltage Stimulator : Output configuration : Constant current stimulator.
Pulse duration : 50-200us (software selectable).
(Isolated Stimulator Output) Pulse rate: Software selectable but hardware should be limited to a Max of 20hz for safety.
 6. External trigger : Any channel or digital input can be used as a trigger.

- Should displays recorded data in real time and display time can be scrolled independent of sampling speed.
- Should have built-in stimulator.
- Should Includes a built-in report generator or Journal for the creation of student lab reports.
- Should be a open software license which allows free distribution to students for installation on their personal computers.
- Should include online real-time computed functions including periodic, dV/dt and integral.
- Software should be of 128 Channels or more which includes computed functions also.
- Stimulator Parameters like frequency, width, amplitude, and type (STEP, TRAIN, CONSTANT, AND CUSTOM TIME VOLTAGE) can be set using Software.
- Should include a Fast Fourier Transform (FFT) feature for frequency analysis of any signal.
- Should be compatible with Windows and Macintosh.
- Manuals & settings in PDF and html format for experiments & exercises.
- Any two channels can be displayed in XY format.
- Software should include scripting function for use if the built in analysis tools falls short of what is required for application. Scripting language should include Dadsip, Python, Matlab, Labview & c++.
- Software should have facility to upload video/ audio files as required by user & that files can be played for reflex testing.
- System should be supplied with following transducers/ sensors for human physiology experiments – EEG/EMG/ECG, Galvanic skin resistance, Heart sound sensor, Striated Muscle transducer, Grip force transducer, Pulse probe, Event marker, Temperature sensor, Non Invasive blood pressure, Nerve conduction studies, Audio-Visual Reaction time & Spirometry.
- Should be supplied with latest Computer, Laser Printer B/w, 1 KVA UPS & trolley.

20. Spirometer ordinary

1. Ultrasonic flow sensor for TOTAL infection control
2. Easy to operate
3. Calibration free
4. Highest accuracy
5. Measures upto 63 parameters including F/V loop
6. Auto Interpretation
7. Runs from the USB port of any PC
8. Meets and Exceeds ATS/ERS Criteria
9. Bio calibration check feature.
10. Ready to use GDT interfacing possibility.
11. In-and expiratory real-time curve.
12. Should not influence of humidity, barometric pressure, contamination
13. Should be Auto QC
14. Should be multilingual
15. Sensor never ever in contact with sample
16. No cleaning , no maintenance
17. Extremely high accuracy for low flows(Resistance free measurements)
18. No down time
19. Life time free software up gradation.
20. Should be USFDA approved (attach certificate).

21. Laptop with i5 processor, 2GB RAM, 500GB Hard drive and 18" TFT, with pre-loaded Windows and MS office and Acrobat reader for PDF files.

21. Gas Analysis apparatus, Haldane's students type

- System should be suitable for measuring Basal Metabolic Rate, Resting Metabolic Rate, Respiratory Exchange Ratio, Sedentary to Light activity, VO₂ MAX, VCO₂, as well as other measurements like Blood Pressure, Reflex Response, Respiration, Heart Rate , Spirometry etc.
- System should be supplied with following transducers/ sensors & accessories – CO₂ & O₂ gas analyzer, calibration kit, EEG/EMG/ECG sensor, Galvanic skin resistance finger electrodes, Spirometry - reusable flow head, 3 liters calibration syringe, Heart rate monitor Transmitter / receiver, Non Invasive blood pressure sensor, Grip force sensor, Temperature sensor, Event marker, Pulse Plethysmography, Heart sound sensor, Striated Muscle transducer, Face mask, head gear assembly & non re-breathing valve, Mixing chamber, required tubings, Gas cylinder filled with gas (10 litre cylinder) along with connectors & tubings, filters etc.
- System should be supplied with 12 channel data acquisition system with analysis software having following specification:
 1. Analog Inputs : 10 inputs.
 2. Bio potential Inputs : 2 inputs, these 2 inputs should be in addition to the ten analog input channels-expanding the total number of channels upto 26 total
Recordable channel.
 3. Sampling : ADC Configuration – Each channel should be sampled simultaneously
ADC resolution – 16 bit.
Max. Sampling Rate – 100000 samples per sec per channel
simultan.
 4. Low Voltage Stimulator : Output configuration: 2 output independent.
Max. Output current : 35mA.
Output ranges : +_15v
 5. High Voltage Stimulator : Output configuration : Constant current stimulator.
Pulse duration : 50-200us (software selectable).
(Isolated Stimulator Output) Pulse rate: Software selectable but hardware should be limited to a Max of 20hz for safety.
 6. External trigger : Any channel or digital input can be used as a trigger.
- Should displays recorded data in real time and display time can be scrolled independent of sampling speed.
- Should have built-in stimulator.
- Should Includes a built-in report generator or Journal for the creation of student lab reports.
- Should be a open software license which allows free distribution to students for installation on their personal computers.
- Should include online real-time computed functions including periodic, dV/dt and integral.
- Software should be of 128 Channels or more which includes computed functions also.
- Stimulator Parameters like frequency, width, amplitude, and type (STEP, TRAIN, CONSTANT, AND CUSTOM TIME VOLTAGE) can be set using Software.
- Should include a Fast Fourier Transform (FFT) feature for frequency analysis of any signal.

- Should be compatible with Windows and Macintosh.
- Manuals & settings in PDF and html format for experiments & exercises.
- Any two channels can be displayed in XY format.
- Software should include scripting function for use if the built in analysis tools falls short of what is required for application. Scripting language should include Dadsip, Python, Matlab, Labview & c++.
- Should be supplied with latest Computer, Laser Printer B/w, 1 KVA UPS & trolley.

22. Van Slyko's Apparatus manometric

23. Gas Analyzer Automatic for CO₂, O₂, N₂

- System should be suitable for measuring Basal Metabolic Rate, Resting Metabolic Rate, Respiratory Exchange Ratio, Sedentary to Light activity, VO₂ MAX, VCO₂, as well as other measurements like Blood Pressure, Reflex Response, Respiration, Heart Rate , Spirometry etc.
- System should be supplied with following transducers/ sensors & accessories – CO₂ & O₂ gas analyzer, calibration kit, EEG/EMG/ECG sensor, Galvanic skin resistance finger electrodes, Spirometry - reusable flow head, 3 liters calibration syringe, Heart rate monitor Transmitter / receiver, Non Invasive blood pressure sensor, Grip force sensor, Temperature sensor, Event marker, Pulse Plethysmography, Heart sound sensor, Striated Muscle transducer, Face mask, head gear assembly & non re-breathing valve, Mixing chamber, required tubings, Gas cylinder filled with gas(10 litre cylinder) along with connectors & tubings, filters etc.
- System should be supplied with 12 channel data acquisition system with analysis software having following specification:
 7. Analog Inputs : 10 inputs.
 8. Bio potential Inputs : 2 inputs, these 2 inputs should be in addition to the ten analog input channels-expanding the total number of channels upto 26 total Recordable channel.
 9. Sampling : ADC Configuration – Each channel should be sampled simultaneously
ADC resolution – 16 bit.
Max. Sampling Rate – 100000 samples per sec per channel simultan.
 10. Low Voltage Stimulator : Output configuration: 2output independent.
Max. Out put current : 35mA.
Output ranges : +_15v
 11. High Voltage Stimulator : Output configuration : Constant current stimulator.
Pulse duration : 50-200us (software selectable).
(Isolated Stimulator Output) Pulse rate: Software selectable but hardware should be limited to a Max of 20hz for safety.
 12. External trigger : Any channel or digital input can be used as a trigger.
- Should displays recorded data in real time and display time can be scrolled independent of sampling speed.
- Should have built-in stimulator.
- Should Includes a built-in report generator or Journal for the creation of student lab reports.

- Should be a open software license which allows free distribution to students for installation on their personal computers.
- Should include online real-time computed functions including periodic, dV/dt and **integral**.
- Software should be of 128 Channels or more which includes computed functions also.
- Stimulator Parameters like frequency, width, amplitude, and type (STEP, TRAIN, CONSTANT, AND CUSTOM TIME VOLTAGE) can be set using Software.
- Should include a Fast Fourier Transform (FFT) feature for frequency analysis of any signal.
- Should be compatible with Windows and Macintosh.
- Manuals & settings in PDF and html format for experiments & exercises.
- Any two channels can be displayed in XY format.
- Software should include scripting function for use if the built in analysis tools falls short of what is required for application. Scripting language should include Dadsip, Python, Matlab, Labview & c++.
- Should be supplied with latest Computer, Laser Printer B/w, 1 KVA UPS & trolley.

24. Ergograph Mosse's

This is for recording work done to the drum surface with special arm fixation rests sun-mica topped base board. Complete with weight set.

25. Bicycle ergometer

The cycle Frame is supported by a sturdy metallic frame, from the front of which two uprights ascend and carry a desk and a cross piece which provide for the attachment in front of the tension balances. The back wheel 168 cm. in circumference and about 22 kg. in weight carried in its circumference a stout calico the ends of which are attached to spring balances through two set of adjustable pulleys. An adjustable counter records the revolutions of the wheel. With audio indication of each revolution. Should be ISO & CE certified

26. Otorhinolaryngo scope

27. Physiograph 3 channel complete with accessories

- System should be a three or more channel Digital Physiograph with Time and Event channel.
- Should be supplied as a standalone recorder to monitor & record the data on three channel colored TFT Monitor.
- System should have built in stimulator.
- System should have facility to store the recording and review the recorded data on inbuilt TFT screen without need of any computer.
- System unit should have 11 steps sensitivity.
- System should have 11 steps sweep speed i.e. .5, .1, .2, .5, 1, 2, 5, 10, 20, 50, 100 div/sec.
- A software should be provided free of cost along with the system to review and printing the recorded data from PC whenever required. (No need to quote cost of computer).
- Should be supplied with Force Transducer, Isotonic Transducer & Volume transducer.

- For human experiment, transducers/ electrodes to perform following tests i.e ECG,EEG, EMG,GSR, Pulse, Respiration, Hand dynamometer, Phonocardiogram & Temperature should be supplied
- The system should include a digital single unit Perspex bath with tissue chamber, pre-heating reservoir coil, tissue holder, micro positioner, a water pump(inbuilt), and digital temperature controller.
- ECG electrodes should be supplied with wrist straps/ clamps- 02 nos.
- EEG/EMG Electrodes should be reusable gold cup electrodes Qty- 20 nos
- GSR Electrodes should be reusable Qty- 02 nos

28. Physiograph single channel with accessories

- System should be a three channel Digital Physiograph with Time and Event channel.
- Should be supplied as a standalone recorder to monitor & record the data on three channel colored TFT Monitor.
- System should have built in stimulator.
- System should have facility to store the recording and review the recorded data on inbuilt TFT screen without need of any computer.
- System unit should have 11 steps sensitivity.
- System should have 11 steps sweep speed i.e. .5, .1, .2, .5, 1, 2, 5, 10, 20, 50, 100 div/sec.
- A software should be provided free of cost along with the system to review and printing the recorded data from PC whenever required. (No need to quote cost of computer).
- Should be supplied with Force Transducer ,Isotonic Transducer & Volume transducer.
- For human experiment, transducers/ electrodes to perform following tests i.e ECG,EEG, EMG,GSR, Pulse, Respiration, Hand dynamometer, Phonocardiogram & Temperature should be supplied
- The system should include a digital single unit Perspex bath with tissue chamber, pre-heating reservoir coil, tissue holder, micro positioner, a water pump(inbuilt), and digital temperature controller.
- ECG electrodes should be supplied with wrist straps/ clamps- 02 nos.
- EEG/EMG Electrodes should be reusable gold cup electrodes Qty- 20 nos.
- GSR Electrodes should be reusable Qty- 02 nos.

29. Oxygen Cylinder trolley

30. Fume cupboards

Technical Specifications of Fume Cupboards

Should be Fabricated out of high quality Stainless steel. It is designed so as to throw-out all toxic/harmful vapors & fumes thus protecting costly instruments and the persons working in the lab. Both Outer & inner should be of rust free stainless steel. Working table top should be acid/alkali

resistant and a small wash basin with connections should be provided for inlet and outlet of water. The front door should move vertically up and down with concealed counter balanced weights. The unit should be fitted with fluorescent light and a gas cock for gas/air supply. The front facing panel should be fitted with both 15 & 5 Amp socket with switches for exhaust system and fluorescent light to work on 220/230 volts A.C. supply. Whole cabinet made up of stainless steel should have working chamber size 5'x2'x2' with high CFM exhaust system. Should be ISO & CE certified.

31. Balance Open Pan

Specification

Capacity	:	600 g
Readability	:	0.01 g
Repeatability	:	0.01 g
Linearity	± :	0.02 g
Pan size	:	120 mm □
Response Time	:	2-3 sec
Calibration	:	Automatic External Calibration
Tare Range	:	Full
Operating temperature	:	10°C to 40°C
Power Supply	:	AC Adaptor 230V / 11V AC or 120V / 11 V AC

Features:

- Automatic External Calibration
- Easy to read LED / LCD Display with back light.
- Multifunction weighing unit as like g, ct, etc.
- Standard RS 232C Interface (optional)
- High resolution, Quick Weighing, Accurate result
- Counting weighing functions
- Inbuilt rechargeable battery for continues uses
- S.S Weighing Pan, Level Indicator, Adjustable fit,
- Tare Range up to max. Capacity of the balance.
- Zero Tracking function

32. Balance Semi Micro

Specification

Capacity	:	60/2200 g
Readability	:	0.01/0.1mg
Repeatability	:	0.03/0.1mg
Linearity	± :	0.07/0.2m g
Pan size	:	85 mm □
Response Time	:	6/3-4 sec
Calibration	:	Automatic Internal (inbuilt motorized)
Tare Range	:	Full
Operating temperature	:	10°C to 40°C
Power Supply	:	AC Adaptor 230V / 11V AC or 120V / 11 V AC

Features:

- Fully Automatic Internal Calibration with built in weight.
- Built in under hook for below weighing (optional).
- Easy to read LCD Display with back light.
- Density measurement for solid and liquid (optional).

- Standard RS 232C Interface, USB A & B type
- High resolution, Quick Weighing, Accurate result
- Based on E.M.F.C. Technology
- S.S Weighing Pan, Level Indicator, Adjustable fit,
- Tare Range up to max. Capacity of the balance.

33. Balance Micro

Specification

Capacity	:	500 g
Readability	:	0.001 g
Repeatability	:	0.001 g
Linearity \pm	:	0.002 g
Pan size	:	85 mm \square
Response Time	:	3-4 sec
Calibration	:	Automatic External Calibration
Tare Range	:	Full
Operating temperature	:	10°C to 40°C
Power Supply	:	AC Adaptor 230V / 11V AC or 120V / 11 V AC

Features:

- Automatic External Calibration
- 2,00,000 internal resolutions
- Easy to read LCD Display with back light.
- Multifunction weighing unit as like g, ct, etc.
- Standard RS 232C Interface (optional)
- High resolution, Quick Weighing, Accurate result
- Counting weighing functions
- Inbuilt battery for continues uses
- S.S Weighing Pan, Level Indicator, Adjustable fit,
- Tare Range up to max. Capacity of the balance.
- Zero Tracking function

34. Constant temperature water bath

Temperature range from ambient temperature to 80° C. Thermostatic control with accuracy of $\pm 0.5^\circ\text{C}$ to 1°C . Double walled, inside stainless steel and outside mild steel painted in epoxy powder coating. Bath consists of two pilot lamps. Temperature control knob and on/off switch. To work on 220/230 volts A.C. Supplied with or without stirring arrangement, without racks and thermometer. Lid of water bath is made of stainless steel sheet. But with glass windows on both opposite sides for observation. Temperature controlled by mercury contact thermometer with a sensitivity of $\pm 1^\circ\text{C}$. Suitable for precision laboratory activities requiring constant temperature with high degree of accuracy. Complete with stirrer, workable on 220V AC 50 Hz single phase. Should have ISO & CE certification

Chamber Size in mm & Inch

- a) 600 x 450 x 450 mm (24" x 18" x 18")

35. Incubator Electric with thermostat

Standard double wall fabrication. Inner chamber made out of richly anodized aluminium or highly polished stainless steel sheet and outer made out of thick mild steel sheet finished in white stoving enamel/powder coated paint with mat finished colour combinations. Double wall door with double glass window for observation in the chamber. Temperature range 5° C above ambient to 80° C ± 1° C controlled by a thermostat. The equipment is workable on 220 V Ac 50 Hz single phase.

Should have air circulating fan , imported thermostat, digital temperature indicator cum controller

Chamber size in mm/Inches	No. of Shelves	Capacity (Approx.)	Alum. Chamber
H D W 1)400 x 400 x 400 (16"x16"x16"	2	65 ltrs.	

36. Hot Air Oven

Standard double wall fabrication, Inner chamber made of richly anodized aluminium or highly polished stainless steel sheet. Exterior fabricated out of thick milled steel sheet duly finished in white stoving enamel/powder coated paint with mat finished colour combinations.

Kanthal wire heating elements provided on three sides to attain quick and uniform heating in range of 50° C to 250° C ± 2° C, controlled by capillary type thermostat. L-shaped thermometer is built-in type. Control panel is provided with selector switch of high or low rates of power thermostat control Knob and indicators for mains & thermostat. Supplied with cord and plug. The equipment is suitable to operate on 220 V AC 50 Hz single phase.

Should be supplied with Air circulating fan, Digital Temp indicator cum controller, imported thermostat

Chamber size in mm / Inches	No. of Shelves	Capacity (Approx.)	Alum. Chamber
H W D (Approx.) a)450 x 450 x 450 (18" x 18" x 18")	2	95 ltrs	

37. Refrigerators

Should be specifically designed and suitable for research laboratories, blood banks applications and across other laboratories working with critical elements.

The laboratory refrigerator should controls temperature varying from 2deg. C to 8deg. C.

The unit should be vertical model constructed of double walls high quality powder coated exterior mild cabinet.

The laboratory refrigerator should be insulated with high density CFC free Poly urethane foam.

The inner chamber should be made of S.S. 304 gradeith built in micro controller based temperature indicator cum controller having audio visual alarms.

Door locking system for improved security with magnetic door gasket. Air cooled hermetically sealed compressor.

Capacity Internal (cm) 265 ltr 58X50X97, External 70X62X158

Should have ISO 13485 & CE certification.

38. Centrifuge Clinical for 12 tubes

Laboratory Centrifuge for Clinical Application:

Drive Induction drive without carbon brushes

Control Microprocessor control through Easycontrol I with variable pre-selection and display of speed and time, Quick-run

Max. speed rpm 4000, adjustable in increments of 10

Min. speed rpm 300

Max. RCF x g 2028

Temperature range ° C –

Noise level at max. speed dB < 60

Run time min 0–99, cont. operation

Program memory The most recent data remains in the memory

Construction Galvanized steel chassis with armored chamber and plastic outer casing

Centrifuge protection Lid lock and interlock

Dimensions (H x W x D) mm (inch) 315 x 380 x 475 (12.4 x 15 x 18.7)

Weight kg (lb) 30 (66)

Power consumption W 180

Rotor required for : 8x15 ml with Swinging Bucket Rotor & 12x15 ml max capacity with provision of tubes 7 ml and 15 ml.

Test standards Manufactured and tested in accordance with EN 61 010-1,

EN 61 010-2-020, EN 50 081-1,

EN 50 082-1; UVV VBG 7z test is not required, CE, CSA (120V only)

39. Microscope

- Fine Focus Binocular Co-Axial Research Microscope: with 30 Binocular head. A Hi-fi research microscope with extra large base which supports the robust arm has a special grade plastic top to provide comfortable hand rest for ease of operation. Binocular observation head 45 deg. Rotatable with interpupillary distance from 54 to 74mm. All Prisms –Antifungus treated. It has a special Quadruple revolving nose-piece moving on ball bearings. It is fitted with hard coated, colour corrected optics and super wide field HKWF 10x eyepieces. The optics have been treated with anti fungus treatment for long life. Special graduated mechanical stage(135mm x125mm) travel of 75mm & 50mm in X&Y direction and moves on ball bearings with low positioned ‘Soft Feel’ co-axial system. Provided with **COAXIAL** coarse and fine focusing mechanism on ball bearing guide ways. Graduated knob with 1 div = 0.002 mm with knob tension control ring. A high transmission sub stage condenser NA 1.25 with iris diaphragm and daylight blue glass filter. Unit is adjustable through rack-n-pinion. built-in halogen illumination 6V-20w with light intensity controller.
- **Should be provided with**
- **Achromatic Objectives:**(DIN Standard) 4x (N.A.0.10),10x(N.A 0.25),40x (N.A.0.65) and 100x (N.A.1.25- oil immersion Spring Loaded).
- **Super wide eye pieces :** WF 10x (Pair) (FN 18)
- **Eye Pieces :** 5x (Pair) Huygenian
- **Packed in Thermocol and Wooden Box .**

40. Electrophoresis apparatus with power supply for paper PAGE AGROSE

- **Specification:**
- Principal Material : Acrylic
- Tank Dimension : 50cm x 28cm x 9cm
- No of Trays (3) : 26cm x16cm; 26cm x 24 cm ; 26cmx32cm
- No of Combs : 28 wells x 6 Nos
- Maximum Sample Capacity : 672 micro litres
- Buffer Volume : 1400 ml
- No of Gel Casting Tray : 1 No UIniversal
- Connecting Cord : 1 each (Red and Black)
- Electrode : 1 each (Red and Black)
- Lid : 1 No

41. Spectrophotometer

Specifications for UV – VIS PC Control Spectrophotometer.

- For routine to research analysis, instrument should offer real innovations that provide enhanced usability and performance - without added complexity.
- Double-beam geometry with 1nm spectral bandwidth for precision measurements
- Xenon flash lamp for instant measurements
- Precision monochromator drive to deliver fast scanning data collection and wavelength accuracy
- Wide accessory selection should be available with various temperature control options, sample changers, sippers and solid sampling devices complete our analysis.
- Spectral Bandwidth(s): 1.0 nm
- Light Source: Xenon flash lamp with minimum 2 - 3-year warranty
- Detector: Dual Silicon Photodiodes
- Scan Ordinate Modes: =Absorbance, % Transmittance, % Reflectance
- Resolution: > 1.6 (peak-to-valley ratio; toluene in hexane)
- Range : 190 to 1100 nm
- Accuracy: ± 0.8 nm (full range 190 to 1100 nm) ± 0.5 nm (546.11 nm mercury line)
- Scanning Speed: < 1 to 5000 nm/min, variable
- Data Intervals: 10, 5, 2, 1.0, 0.5, 0.2, 0.1 nm
- Photometric Range: > 3.5 A
- Noise: < 0.00015A
- Stray light: > 2 Abs @198KCL.
- Quartz Cell – 10mm – 3ml capacity – 1 Pair.
- Training & Installation at our site should be done free of cost.
- System should be upgradeable for accessories like multi cuvette holder, peltier accessory, Diffuse reflectance and solid sample holder in future.
- **Optinoal Accessories- Installation accessories like Branded PC, Printer, 2 KVA Stabilizer along with Licensed Windows s/w should be quoted optionally.**

42. Binocular research microscope

Fine Focus Binocular Co-Axial Research Microscope: with 30 Binocular head. A Hi-fi research microscope with extra large base which supports the robust arm has a special grade plastic top to provide comfortable hand rest for ease of operation. Binocular observation head 45 deg. Rotatable with interpupillary distance from 54 to 74mm. All Prisms –Antifungus treated. It has a special Quadruple revolving nose-piece moving on ball bearings. It is fitted with hard coated, colour corrected optics and super wide field HKWF 10x eyepieces. The optics have been treated with anti fungus treatment for long life. Special graduated mechanical stage(135mm x125mm) travel of 75mm & 50mm in X&Y direction and moves on ball bearings with low positioned ‘Soft Feel’ co-axial system. Provided with **COAXIAL** coarse and fine focusing mechanism on ball bearing guide ways. Graduated knob with 1 div = 0.002 mm with knob tension control ring. A high transmission sub stage condenser NA 1.25 with iris diaphragm and daylight blue glass filter. Unit is adjustable through rack-n-pinion. built-in halogen illumination 6V-20w with light intensity controller.

Should be provided with

Achromatic Objectives:(DIN Standard) 4x (N.A.0.10),10x(N.A 0.25),40x (N.A.0.65) and 100x (N.A.1.25- oil immersion Spring Loaded).

Super wide eye pieces : WF 10x (Pair) (FN 18)

Eye Pieces : 5x (Pair) Huygenian

Packed in Thermocol and Wooden Box .

43. Ophthalmoscope

Technical Specification

- 1) Should have separation of illumination and observation beam by means of the aspherical optical system avoids corneal and iris reflex.
- 2) Should have bright, white light.
- 3) Should have avoids stray light.
- 4) Should have maintenance-free.
- 5) Should have durable, precise.
- 6) Should have instruments fits the orbita comfortably in any position.
- 7) Should have protects the users’ glasses and steadies the instrument.
- 8) Should have suitable for large or small pupils. Incorporates slit aperture, fixation star, cobalt blue filter and red-free filter for improved contrast.
- 9) Should have given good results even with high refractive errors.
- 10) Should have CE approved.

44. Upper GI Endoscope

Should have following specifications :

- Lighter and possess HD resolution image quality.
- Fully immersible in disinfectant solution.
- Four or more no. of remote control switches on control body.
- Compatible with leakage testing device with its air flow and pressure regulation through light source's air pump.
- Should have capability of Band Imaging (NBI/FICE/I-scan)

Field of view	:	140 degree or more
Direction of view	:	0 degree, forward viewing
Depth of field	:	2 to 100 mm or better
Distal end outer diameter	:	9.2 mm or less
Insertion tube outer diameter	:	9.2 mm or less
Tip Bending rage	:	Up 210 deg, Down 90 deg, Right 100 deg, Left 100 deg
Working length	:	1030 mm or more
Channel inner diameter	:	2.8 mm or more
Minimum Visible distance of end. instrument used thru channel	:	3 mm or closer from distal

Video Processor :

- Should be compatible with Analog, HD-SDI and DVI output & 16:9 & 16:10 output for a HDTV monitor should be available.
- should contain the long-life LED light source / 300 xenon light source.
- Equipped with high resolution HDTV Imaging capacity.
- Compact, light weight (10-11 kg) and ergonomically designed
- **Narrow Band Imaging capacity for compatibility with NBI Videoscopes.**
- equipped with one touch connection of scopes.
- Portable Memory & USB Slot for image recording
- Automatic IRIS control & automatic white balance
- Equipped with memory back up for settings & Lithium battery.
- Should have pre freeze function for image stabilization

Standard accessories

White cap holder	1 No.
Foot Holder	1 No.
Scope cable holder	1 No.
SDI cable 2.5M	1 No.

Keyboard	1 No.
Portable memory (2GB)	1 No.
Keyboard cover	1 No.
Water Container	1 No.
Operation Manual	1 No.
White balance cap	1 No.

Trolley suitable for Endoscope System .

Monitor- Medical Grade 21 inch.

45. Ultrasound Machine

Essential features/minimum specifications:

1. General:

- The system should be Premium End Multi-Disciplinary Digital Architecture suitable for whole body applications including abdomen, obstetrics, gynaecology, small parts, neonatal, paediatric, vascular, transcranial, urology, musculoskeletal studies, intracavitary applications like Transvaginal and Transrectal, Laparoscopic and Intraoperative applications.
- System should be capable of supporting broad band transducers with frequency range from **1- 20 MHz**.
- c System should be DICOM 3.0 or higher ready for connecting to HIS, RIS, PACS and DICOM enabled printing devices.
- System should have touch panel control for ease of operation.
- System should have 4 universal transducer ports with 2 parking ports connectivity.
- User interface back-illuminated control panel should be available which is 180 degrees rotating and height adjustable for user comfort.
- System should have full alphanumeric keyboard.
- System should have multidirectional wheels with locking system.

2. System Operating Modes and features:

- The system should be capable of operating in following modes:
- B Mode
- M Mode (including colour M- Mode)

- Colour Doppler
 - Power Doppler- Directional
 - Pulsed Wave Doppler mode
 - Duplex and Triplex modes
 - Tissue Harmonic imaging
 - Contrast imaging
 - Special Image Enhancement Software for brilliance imaging
 - Software for Speckle Noise Reduction with multiple steps
 - Software for Compound Imaging to acquire several coplanar scans of an object from different views.
 - Elastography imaging for all anatomical districts like breast, thyroid, uterus, prostate with advanced measurements
- 3D/4D volume rendering with advanced tools like Volume Rendering Analysis, Tissue Slice Imaging mode, Tri Planar Imaging , Cutting tool, X- Light, Multi Slice View with multiple cut sections.
- Cardio STIC for foetal heart assessment
 - Real time Radio Frequency based Quality Intima Media Thickness Software with graph including the normal value curves.
 - Panoramic/ Extended FOV
 - Colour Panoramic / Extended FOV.
 - Real time Fusion Technology with CT/MRI data to significantly increase precision and accuracy of image guided diagnosis and interventional procedures. It should be capable of Virtual Biopsy with magnetic tip needle and should offer 3D panoramic.

3. Display Monitor:

- 19" inch high resolution and high definition LCD monitor.
(~It should be adjustable with tilt and swivel facility. Provision to adjust height will be preferred.
- It should have contrast digital adjustment.

4. Transducers:

Single Crystal Technology transducers will be preferred.

- Multifrequency Convex Probe with frequency range of 1-6 MHz or more.
- Multifrequency Linear Probe with frequency range of 4-13 MHz with beam steering and virtual convex facility.
- Multifrequency Endocavitary Probe with frequency range of 3-9 MHz with FOV more than 180 degrees.

5. Transducers (Optional) :

- Multifrequency High Frequency Probe with frequency range of 6- 18 MHz for MSK applications.
- Multifrequency Volume Convex probe with frequency range of 1-6 MHz or more.
- Zero degree biopsy convex probe with frequency range of 1-6 MHz or more.

- Multifrequency Biplanar Endocavitary Probe with frequency range of 3-13 MHz and convex FOV: 50- 200 degrees and linear FOV: 3-24 degrees TP-View.

6. Measurement, Calculation and reports:

- Trackball with multiple sets of callipers for measurements.
- Standard measurements like depth, distance, area, circumference, volume, ratio, angle, slope, time, velocity, heart rate, etc. At least six distance measurements should be possible on one image with auto repeat of measurement function.
- Comprehensive measurement and calculation packages for all the clinical applications including obstetrics tables and summary reports.
- Equipment should have multi- gestation measurement and reporting capability in same examination. User of programmable obstetrical tables and estimation of foetal weight and expected date of delivery from foetal measurements. Measurements should be automatically reflected in the report page.
- Automatic waveform trace in Doppler mode with display of calculated values and indices in real time and frozen images.

7. Control Panel Software and other features:

- At least 256 gray scale levels in displayed images.
- System dynamic range of 200 dB or more.
- User programmable presets for different types of examinations.

Automatic optimisation function that optimizes system parameters for B- Mode and Doppler Mode. This should be in addition to the presets for various examinations. Multiple pre and post processing functions and colourise options.

Onboard archival facility with easy and rapid retrieval of images in the form of integrated DVD/CD writes. Should be able to store static images and cine clips in system hard disc and in on board archival devices.

Data archival should be possible to export data on DVD/CD, USB, DICOM and Networking.

System should be provided with a highly advance software for review, post-process and printing of exams on a PC workstation and should be capable to import native machine's file formats. This software should have the capability to perform various measurements and add annotations on the added data.

System should have more than 400 GB hard disc.

System depth should be upto 340 mm.

It should be possible to annotate and perform measurement function on recalled images.

Image display modes: Dual B+B, simultaneous B+B, Simultaneous B+ Colour, and display of B+M and B+ colour + Doppler in various size combinations.

Application specific programmable annotations and body marks with image plane orientations.

Ethernet port for networking and USB port. It should be possible to transfer images to desktop PC.

Free software upgrade of the equipment to be provided during the warranty and AMC period.

8. Certifications: The system should be European CE and US FDA certified.

9. Warranty:

The system should have complete warranty of 5 years including transducers. Warranty will commence after complete and successful installation of the main equipment and all the supplied accessories.

Comprehensive annual maintenance for the system to be quoted for the next 5 years after expiry of warranty periods.

An uptime of 98% is to be ensured during warranty and comprehensive AMC period.

46. Spirometer ordinary

1. Ultrasonic flow sensor for TOTAL infection control
2. Easy to operate
3. Calibration free
4. Highest accuracy
5. Measures upto 63 parameters including F/V loop
6. Auto Interpretation
7. Runs from the USB port of any PC
8. Meets and Exceeds ATS/ERS Criteria
9. Bio calibration check feature.
10. Ready to use GDT interfacing possibility.
11. In-and expiratory real-time curve.
12. Should not influence of humidity, barometric pressure, contamination
13. Should be Auto QC
14. Should be multilingual
15. Sensor never ever in contact with sample
16. No cleaning , no maintenance
17. Extremely high accuracy for low flows(Resistance free measurements)
18. No down time
19. Life time free software up gradation.
20. Should be USFDA approved (attach certificate).
21. Laptop with i5 processor, 2GB RAM, 500GB Hard drive and 18" TFT, with pre-loaded Windows and MS office and Acrobat reader for PDF files.

47. Bed Side Cardiac Monitor with non invasive continuous cardiac output

1. The machine shall have a modular design to allow flexible configuration of the monitored parameters.
2. It should have inbuilt 17" TFT LCD Display with resolution 1280*1024 and maximum waveform should be 13 nos.
3. It should have following parameters as standard -
 - ECG(5 lead selectable, 12 lead optional)
 - Respiration

- NIBP
 - SpO2
 - 2-Temperature
 - Etco2 (Sidestream)
4. The unit should be upgradable to the following parameters – Cardiac Output, Multi-gas, BIS , ICG and upto 8 Ch-IBP.
 5. ECG should have ST analysis and Arrhythmia Analysis (16 types).
 6. It should have following Interface --
 - VGA Output
 - Analog output
 - Defibrillator synchronization output
 - SD Card
 - USB
 - It should have option of Wired/Wireless central station and should support Nurse Call function.
 7. It should have Trends review of all parameters for 150h and NIBP measurement storage of 1200 sets.
 8. It should support – HL-7 compitability.
 9. It should have a Li-ion rechargeable Battery (2 slots) with a backup of upto 6 hours for longer duration.
 10. It must have a valid USFDA and CE certificates.

48. Defibrillator

Technical Specifications

1. The machine should have facility for ECG Monitoring, defibrillation, external pacing (transcutaneous) & recorder.
2. The Defibrillator should be Rectilinear Biphasic technology, having energy selection up to 1-200 joules.
3. It must be capable of monitoring ECG through ECG cables, Multi function electrodes and paddles.
4. The machine should be able to defibrillate Adult, Pediatric patients.
5. The machine should have ECG waveform display on bright high resolution display.
6. The machine should be compact, portable with inbuilt rechargeable battery. The machine should not be more than 7 Kgs with battery and paddles.
7. The machine should have in built recorder printing ECG trace & stored information.
8. The machine should have a facility of External non-invasing pacing with 40 ms pulse width
9. It should have ability to measure chest compression rate and depth in real time with visual feedback on screen with rate and depth indicator.
10. The machine should have user selectable alarm settings.
11. . The machine should work on mains as well as on rechargeable battery
12. The unit should be supplied with Adult and inbuilt pediatric external paddles The machine should have facility to increase/decrease energy selection on paddles as well as on unit.
13. The charging time should be less than 7 secs at maximum energy
14. The machine should have inbuilt upgaradtion facility for SPO2, NIBP, 12 Lead ECG . ETC02
15. The unit should be supplied with following accessories /items unit
 - a) S.L.A Battery -1 nos
 - b) 3-Lead ECG cable - 1 nos
 - c) External defibrillator paddles (pediatric inbuilt in adult)- 1 nos

- d) Multi Function Defibrillator & Monitoring padz/gel sheets - 300 nos
 - e) Reusable CPR feedback sensor/or similar product reused at least on 90 patients – 8 nos
16. The unit should be U.S FDA approved.

49. Pulse oximeter

1. **Should have high resolution Color TFT display of 3.5 inch to view the wave forms and should have LED display to show the numeric readings.**
2. Should be able to measure SPO2 and NIBP of patient size from neonate to adult.
3. Should have single button Operation for Change in Mode from Adult, Paed and Neonate.
4. Powerful storage for real time data and have facility to transfer in PC, Storage capacity of 100 hrs trend review
5. Should be upgradable into Thermal Printer.
6. **Should display numeric value of Profusion Index/Saturation Index.**
7. Should have 10 Segment LED bar indicator to display pulse strength.
8. Should be capable of connecting with central Station networking.
9. Built-in Lithium-ion Battery for minimum 12 Hours Continuous Working.
10. **Should be USFDA and European CE quality approved.**

50. ECG Machine

- Should be 12-channel portable ECG machine with all 12 channels acquired simultaneously.
- Should be portable, Light weight not more than 4.5 Kgs.
- Should have atleast 7" Color Touch LCD Display (800 x 480 DOT TFT Display)
- Should have full QWERTY hard keyboard to enter the patient data conveniently.
- Should have single button operation.
- Should have Measurement and interpretation software.
- Printing of Interpretation and waveform should come on single sheet of paper.
- Should have paper size of atleast 210 mm X 140 mm and should be Z fold.
- Should have Recording speed selection of 5, 6.25,10,12.5, 25 & 50 mm/sec
- Should have recording modes Manual, Automatic, Rhythm.
- Complete digital filters, avoids baseline drift, AC (On/Off) and EMG (25Hz/35Hz/45Hz/OFF)
- Interference, Low pass filter (150Hz/100Hz/75Hz), DFT Filter: 0.05/0.15/0.25/0.5/0.67Hz.

- ECG Machine should have CMMR ≥ 115 dB
- Should have 24bits A/D Converter.
- Should have Sample rate of 1000Hz/Channel, 10,000 Hz for pacemaker detection.
- Should have single and 3 Channel selectable rhythm leads.
- Facility to enter patient information (Name, age, sex, height, weight, Blood pressure, doctor's name, Hospital's name) which get updated in system and is recorded on the recorder thermal paper.
- Internal Patient memory function should save 200 patient ECG data.
- Should have SD CARD and USB port for data transfer and Printer connectivity.
- Inbuilt measurement and interpretation software and tested the same from AHA/MIT Database.
- Should have option to connect with Barcode reader.
- Should have option to convert the file into PDF format to save in USB Drive and SD card for data transmission from machine to PC.
- Should have option to upgrade for data transfer to PC thru WIFI and LAN
- Should have IEC 60601 certifications.
- Should have Inbuilt lithium –Ion battery with upto 2 hours of backup.
- Should have UL and US FDA Quality certifications.
- Should be Supplied with Following Accessories
 - A) Limb Electrodes (Set of 4) – 1 No.
 - B) Chest Electrodes for Child/ Paed (Set of 6) – 1 No.
 - C) Chest Electrodes for Adults (Set of 6) – 1 No.
 - D) ECG Cable (10 Leads) – 1 No.
 - E) Power Cord -1 No.

51. Echocardiography machine

Technical Specifications

Tenders are invited for single best technically suitable offer for State of the art Integrated Trolley mounted Digital Cardio-Vascular Color Doppler System with the following specifications:

1. Color Doppler Ultrasound system should be based on all digital architecture with maging evaluation of the exhaustive packages in Cardiology for Echo-cardio graphy, critically ill in ICU , CCU,PICU,NICU.
2. General Specifications: - System should have a High Definition Fully digital Non Interlaced Flat Panel Display of 19 inches or more, with Articulated Arm with tilt and swivel facility. It should have high resolution display with Digital brightness and contrast adjustment.
3. System should have Alphanuemic Keyboard with Keyboard Height Adjustment facility.
4. The system Boot up time less than or equal to 90 sec.
5. System should have inbuilt 3 probe connectivity and probes can be interchanged across application without hampering the operations

6. The system should have a very large image memory capacity – minimum 160GB or more ,large inbuilt memory is mandatory
7. System should have at least 3 or more inbuilt USB port for easy data transfer.
8. Operating Modes:-
The system should incorporate facility for High-resolution 2D, M Mode,PW, CW, Color Flow Imaging, Power Doppler Imaging, Tissue Doppler Imaging modes and any other advance feature in color flow / power imaging with color& Spectral Doppler Filter, With Sample Volume Size.
9. Dual images (B/color and B/W) can be viewed together in real time and post freeze modes.
10. The system should have 256 Grey shades.
11. The system should have adjustable 2D image size (without zoom) up to 2 levels.
12. The system should have a display depth of at least 35cm or more
13. System should be upgradable to TEE/TOE (Adult and Pediatrics both).
14. System should offer the facility of Storage of Images directly to desired memory as HARD DISK, USB, CD/DVD.
15. System should have advanced Image Processing algorithms to analyze between targets and artifacts so as to sharpen target anatomy and reduce the speckle noise & artifacts for improved Image quality.
16. The system should be provided with image processing like edge enhancement, persistence, Preprocessing, Post processing, image optimization in real time and frozen images & Adjustable transmit focus.
17. System should be able to work in combined mode of Harmonic Imaging and Real-time Compound Imaging to get excellent Image quality.
18. The system shall offer Harmonic imaging in Power Doppler Imaging mode for improved sensitivity and specificity in differentiating blood/agent from tissue.
19. The system should have Contrast Harmonic Imaging and should have optimization settings to detect the Contrast Agents.
20. Power Doppler AngioImaging for perfusion studies should be available for visualization of flow in small vessels and should be supported by all probes.
21. System should be capable of upgradability to Anatomical –M Mode with at least 2 M-lines.
22. System should be capable of upgradability to Stress Echo package
23. System should be capable of upgradability to 2D Strain package
24. The system should have a high dynamic range of 180 dB or more
25. Should support loop storage of more than 512 frames.
26. System should have real time triplex mode facility.
27. Chroma maps and different grey shade maps of acceptable quality should be available.
28. Basic measurements should be possible on saved and recalled images.
29. The system should have Harmonic Imaging.
30. The system should have auto annotations per preset with facility for selection of different font sizes from control panel.
31. The system should have facility for zoom and manipulation of Image

- throughpre processing and post processing with Cine loop viewing of Images of all modes.
32. The system should have auto Doppler measurement facility in real time and post freeze images.
 33. Power Doppler AngioImaging for perfusion studies should be available for visualization of flow in small vessels and should be supported by all probes.
 34. The system shall support higher angle real time trapezoid imaging with linear and cardiac array transducers
 35. Real time extended field of view or panoramic view should be possible. The real time image should preferably simultaneously include a live portion of the image and the portion of the image being built into extended field of view.
 36. **System should be compatibility with dedicated software compatible with PC to review, post-process and printing of exams performed with the main ultrasound system on a PC working with Windows XP and Vista.**
 37. Compound Imaging in terms of frequency and spatial on Convex and Linear transducers should be available.
 38. The equipment should have single button image optimization for B mode.
 39. The system should have in built CD / DVD read and write capability external CD and DVD will not be accepted
 40. The system should have built in DICOM facility for image transfer to PACS.
 41. System should be provided with Image management software that can transport images for viewing. Equipment should be supplied with
 - i) Phased array Adult cardiac probe with frequency range around 1 to 4 MHz
 - ii) Neonatal Phased Array Probe with 3-11 MHz probe
 - iii) High Frequency Linear Probe with 4-13 MHz for Vascular studies

Optional:

 - i. Linear Array Probe with very high frequency range around 6 to 18MHz for neonatal and pediatric
 - ii. Multiplaner TEE probe Adult
 - iii. Multiplaner TEE probe Pediatric

52. Na/K Analyzer

Sr.No.	<u>Technical Specification of Sodium & Pottasium Analyzer</u>
1	Microprocessor controlled Electrolyte Analyzer with the measured parameter of Na ⁺ ,K ⁺ ,Ca ⁺⁺ and upgradable to Cl or Li in the same machine without changing solution pack.

2	Sample type- serum, whole blood, urine, dialysate, aqueous , QC and plasma.
3	Sample volume should be less than 100 ul.
4	Analyzing time - less than 60 seconds/test. Sample throughput 50-60 samples /hour .
5	USFDA & CE Approved.
6	Should have fully automatic calibration of all parameters and reagent should be in a single pack for all parameter.
7	Maintenance free electrodes with long warranty.
8	Individual switch ON/OFF facility of the parameter with different combinations.
9	Should have data display on built in LCD display screen.
10	Data printout on fast low noise thermal printer.
11	Should have fully visible measuring chamber.
12	Should have only two functional keys operation of (yes/No).
13	built in program stand by mode facility for economical operations.
14	Should have report printout in fast, low noise thermal printer and facility to interface with computer and external printer.
15	QC data and calibration results.
16	Should have automatic flagging of abnormal result. Should have stand by mode facility for economical Operations.
17	Should have built in voltage stabilizer for the voltage range from 100 – 240 VAC/50 Hz..
18	Should be able to run on 240V – 50 Hz, 1M, Amp Max.

53. Electroencephelogram

High end digital EEG system is required along with complete set of consumables and accessories, with following specification

Hardware

1. Number of EEG channels should be 70.

2. The computer should be supplied with the system, after passing the strict in-house quality checks by the manufacturer to comply with medical equipment standard.
3. System should have option of adding 10 or more DC channels
4. Impedance measurement both from amplifier and on screen.
5. Should have programmable Automatic Photic Stimulator.
6. Should be supplied with modules for acquiring SPo2, Co2 & Heart Rate for SUDEP cases.
7. Must be supplied with Manufacturer supplied video capturing hardware for High quality Video.
8. Must be supplied with High resolution Remote controlled camera for easy operation.
9. System should be ready for Polysomnography upgradation.
10. Should have following minimum technical feature
 - a. System should have 24-bit simultaneous sampling of all input channels
 - b. Sampling frequency of 10 KHz or better
 - c. ADC resolution less than 97 nano volts.
 - d. Input impedance: 200 M ohms or better
 - e. Sensitivity 1 to 200 micro volt per mm
 - f. Noise < 1.5 micro volt Peak to peak
 - g. Built in manual / automatic sine / square wave calibration
 - h. CMRR: above 110 dB
 - i. Low filter settings: 0.08 Hz to 159 Hz
 - j. High filter settings: 15 Hz to 3000 Hz
 - k. ECG Elimination filter in both acquisition and review mode
 - l. EEG data output in ASCII format.
 - m. Display modes: Overwrite and Page-by-page
 - n. Waveforms freeze facility with simultaneous background recording

Software

1. System should have option of changing individual channel settings.
2. System should have option for password locked templates for user specific protocols.
3. Should have option for designing multiple protocols with user specific setting.
4. System must have option of comparing any segment of EEG with the current EEG by copying.
5. Should have 8 channel DSA for FFT trend analysis and 3D brain mapping
6. Should have 6 channel CSD/Voltage mapping
7. Should have heart rate monitoring.
8. Should have trend analysis for physiological parameters
9. EEG numerical analysis by zooming specific segment of EEG.
10. It should have facility for acquisition and review mode by split screen
11. Facility to review at least 4 EEG review simultaneously.
12. System should be able to display 120 traces on the screen with a maximum of 5 minutes per screen.
13. Facility for Prune/Trim down Video EEG data to specified events along with user defined time.
14. System should have option of selective video recording.
15. Facility for Zoom/Magnify EEG trace, copy & paste of EEG Trends to reports and presentations.
16. Facility to search EEG.
17. Facility for Automatic generation of reports without the need of MS Office.
18. Facility for viewing several recordings in tiled or cascading windows.
19. Facility to Review the data recorded from this system on a CD/DVD; any PC without the need of loading additional REVIEW software.

Patient Administration Software

1. Network supported patient and test management software for patient administration, exam scheduling network connectivity, launch of data acquisition, review.
2. Should have option of programming the recording time
3. Should support multiple user support with individualized settings.
4. Should be HIS/HL7 compliant
5. Should have function for audit trail.
6. Should be supplied with review station for reviewing the data over LAN.

Computer

1. The PC system should strictly be supplied by the manufacturer along with the system, after passing the strict in-house quality checks by the manufacturer to comply with medical equipment standard. Should have following or better specifications (Locally supplied PC system will not be accepted):-
 - a) Intel core two duo
 - b) 2 GB RAM
 - c) 250 GB HDD
 - d) DVD writer
 - e) 21" monitor
2. Good quality Laser printer
3. Good quality trolley with provision for mounted monitor for height adjustment.
4. Review station PC with good quality printer.

Consumables

- | | |
|-------------------------------|------------|
| 1. Electrodes sets | - 02 Nos. |
| 2. Conduction paste (1000gms) | - 10 set . |
| 3. Cleaning gel (130 gms) | - 10nos. |

Safety & regulatory compliances

1. Should be CE approved
2. Should be USFDA approved
3. Should be IEC approved
4. Should be CAN/CSA approved

54. Patient examination table

55. Radiant Warmer

1. Should be Microprocessor controlled with Servo and Manual Modes of Operation.
2. Should have two displays – one for patient temperature and one for set temperature
3. Heater Output should be displayed in a Bar Graph.
4. Manual Mode can adjust Heater Output 10 -100 %
5. In manual mode, 30 min timer cut off to switch off excess of heat.
6. Should give alarm after 30 Minutes of operation in Manual Mode with timer facility.
7. Should have an APGAR Timer.
8. Should have an Integral Bed with external tilting facility at both ends up to 30 ° . Bed Area should be at least 730mm x 520mm.
9. Bed area should have an Acrylic Side Panel Collapsible and good Visibility to see through the panel from a distance.
10. Bed Access panel should not have any gap. Should be bent and radius to avoid sharp edges.
11. Bed should be about 80 – 90 cms from the Floor and 80 cms from the heat source.

12. Swiveling of Heater Box to make space for X-ray machine, without disturbing the baby.
13. High Intensity Halogen Observation Light.
14. Should have a Thermistor based temperature with Accuracy of $\pm 0.1^{\circ}\text{C}$.
15. Should have a memory backup to restore the set modes and temperature automatically in the event of power failure.
16. Should have a facility to lock the key board, to avoid unwanted user errors.
17. Should have an interchangeable probe without requiring to be calibrated.
18. Should give alarm when probe is disconnected from the machine.
19. Should have Automatic Heater Cut-off if the ambient temperature crosses 39°C in manual mode.
20. Should have Automatic Heater Cut-Off after 30 minutes in Manual Mode.
21. Should have Comprehensive alarms Temp. Low, Temp. High, Probe Failure.
22. Set Temperature Range: 30°C to 38.3°C .
23. Should have 4 nos 4Inch Castors.
24. Should have operating instructions on the panel itself.
25. Should have valid ISO 13485 & CE certification.

56. Infant Incubator

- Should be a Microprocessor Controlled System with Air and Skin Modes of operation.
- Should have 4 displays each for Air – Set Temperature and Air Temperature, Skin – Set Temperature and Skin Temperatures, available in both Centigrade and Fahrenheit.
- Should have a Feather Touch operation with large digital display and comprehensive alarms. Control Panel should be liquid proof and allow easy and hygienic disinfection.
- Should have a memory backup to restore set temperature and control mode automatically in the event of power failure.
- Should have an integral bed with externally operated trendle and fowler position and allow shock less adjustment of the bed angle. Bed should be tiltable at both ends.
- Should help to maintain Humidity inside the incubator with a easy to clean and drain Humidity control chamber.
- Should have Dual Thermistor Temperature Probes, with accuracy of $\pm 0.2^{\circ}\text{C}$, to minimize down time and ensure accuracy. Probe should be interchangeable without requiring calibration.
- Should give unimpeded access to the patient with large front door and withdrawable baby tray.
- Should have elbow operated ports to allow easy access and eliminate cross infections.
- Should have an X-ray cassette compartment with X-ray scaling and catheter measuring scale.
- Equipment should be easy to clean and disinfect.
- Should have a High Intensity CFL Light for observation.
- Should have Comprehensive alarms: Air Temp. Low / High, Skin Temp. Low / High, Air Flow Failure, Heater Failure, Probe Failure, Air / Skin, Temperature $> 39^{\circ}\text{C}$, Power Failure, Fan Failure, Circuit Fault.

- Heater should automatically cut off if air / skin temperature inside the incubator exceeds 39° C.
- Should have rust free and at least 4" Anti Static Castors.
- Should have storage facility.
- Should have a Built-in O2 Flow meter
- Should have a built-in thermometer.
- Should have a Swiveling Monitor Stand, Pump Mounting Pole for Infusion / Syringe Pumps, and Height Adjustable IV Pole
- Should have valid ISO 13485 & CE certification.

57. Phototherapy unit LED

1. Micro Processor Controlled System with 24 Hi Bright blue LED lamps and 3 White LED.
2. Maximum Irradiance level should be greater than 70micro watt/cm²/nm
3. No Infrared and Ultra-violet rays from the LEDs
4. Lamp usage up to 20,000 hrs
5. Should have separate switches for Blue and White LED lamps
6. Should have a wide base for rigidity.
7. Should have more mobility and easy adjustment of height and tilting of source unit
8. Should have a Time Totaliser to Measure the Hours of lamps usage
9. Should be able to be positioned easily over cots, incubator, radiant heat cradles.
10. Should have Over temperature cutoff
11. Should have 4 nos 2" castor with 2 break
12. Should have over temperature cutoff
Should have inbuilt cooling fan for minimize the Lamp Temperature

58. BP Apparatus

Stand with adjustable height

Specification

Special model designed for I.C.U. Ward & Operation Theater has facility to adjust the height of the instrument by using knob provide on the pillar of the stand according to the requirement in I.C.U., Ward/O.T. has built in head lifter spring which help to make feel the head weight less while changing the height of the instrument should become easier, quicker & lighter. The pipe of the pillar completely painted from inside and out side skillfully to prevent rusting base of the instrument should be well balanced and very swift in movement arrangement for extra distance coverage superior quality cuff with added quality of fastening.

Fix Stand model

Specification

Special model design in CRCA white metal sheet wide base for perfect erection the height of the instrument be 2.5 feet suitable for normal bed height normal bandage type & valcro type fastaining cuff extra coil type rubber tubing.

Desk Model

Specification

Design in CRCA white metal sheet, instrument uses vertical space and has got firm grip on the table, preventing tilting & falling standard cuff and extra child cuff.

59. Flexible Upper GI Endoscope

Should have following specifications :

- Lighter and possess HD resolution image quality.
- Fully immersible in disinfectant solution.
- Four or more no. of remote control switches on control body.
- Compatible with leakage testing device with its air flow and pressure regulation through light source's air pump.
- Should have capability of Band Imaging (NBI/FICE/I-scan)

Field of view	:	140 degree or more
Direction of view	:	0 degree, forward viewing
Depth of field	:	2 to 100 mm or better
Distal end outer diameter	:	9.2 mm or less
Insertion tube outer diameter	:	9.2 mm or less
Tip Bending rage	:	Up 210 deg, Down 90 deg, Right 100 deg, Left 100 deg
Working length	:	1030 mm or more
Channel inner diameter	:	2.8 mm or more
Minimum Visible distance of instrument used thru channel	:	3 mm or closer from distal end.

Video Processor :

- Should be compatible with Analog, HD-SDI and DVI output & 16:9 & 16:10 output for a HDTV monitor should be available.
- should contain the long-life LED light source / 300 xenon light source.
- Equipped with high resolution HDTV Imaging capacity.
- Compact, light weight (10-11 kg) and ergonomically designed
- **Narrow Band Imaging capacity for compatibility with NBI Videoscopes.**
- equipped with one touch connection of scopes.
- Portable Memory & USB Slot for image recording
- Automatic IRIS control & automatic white balance
- Equipped with memory back up for settings & Lithium battery.
- Should have pre freeze function for image stabilization

Standard accessories

White cap holder	1 No.
Foot Holder	1 No.
Scope cable holder	1 No.
SDI cable 2.5M	1 No.
Keyboard	1 No.

Portable memory (2GB)	1 No.
Keyboard cover	1 No.
Water Container	1 No.
Operation Manual	1 No.
White balance cap	1 No.

Trolley suitable for Endoscope System .
Monitor- Medical Grade 21 inch.

60. Colonoscope

Should have following specifications :

- Lighter and possess HD resolution image quality.
- Fully immersible in disinfectant solution.
- Three or more no. of remote control switches on control body.
- Compatible with leakage testing device with its air flow and pressure regulation through light source's air pump.
- Should have capability of Band Imaging (NBI/FICE/I-scan)

Field of view	:	140 degree or more
Direction of view	:	0 degree, forward viewing
Depth of field	:	2 to 100 mm or better
Distal end outer diameter	:	12.8 mm or less
Insertion tube outer diameter	:	12.8 mm or less
Tip Bending range	:	Up 180 deg, Down 180 deg, Right 160 deg, Left 160 deg
Working length	:	1680 mm or more
Channel inner diameter	:	3.7 mm or more
Minimum Visible distance of instrument used thru channel	:	5 mm or closer from distal end.

Video Processor :

- Should be compatible with Analog, HD-SDI and DVI output & 16:9 & 16:10 output for a HDTV monitor should be available.
- should contain the long-life LED light source / 300 xenon light source.
- Equipped with high resolution HDTV Imaging capacity.
- Compact, light weight (10-11 kg) and ergonomically designed
- **Narrow Band Imaging capacity for compatibility with NBI Videoscopes.**
- equipped with one touch connection of scopes.
- Portable Memory & USB Slot for image recording
- Automatic IRIS control & automatic white balance
- Equipped with memory back up for settings & Lithium battery.
- Should have pre freeze function for image stabilization

Standard accessories

White cap holder	1 No.
Foot Holder	1 No.
Scope cable holder	1 No.
SDI cable 2.5M	1 No.

Keyboard	1 No.
Portable memory (2GB)	1 No.
Keyboard cover	1 No.
Water Container	1 No.
Operation Manual	1 No.
White balance cap	1 No.

Trolley suitable for Endoscope System .
Monitor- Medical Grade 21 inch.

61. Uroflowmetry

Technical Specification

	<u>This unit should have following features:</u>
1	Uroflowmetry System should be Fully Automatic and should have following specs.
2	The Uroflow transducer should be weight based transducer and should have a Flow Range : 0-50 ml/s and Volume Range : 0-1200 ml.
3	Should have wireless technology to allow for greater privacy during voiding procedures
4	Automatic calculation of Uroflow Summaries .
5	It should be fully automatic to provide accurate recording system that are easy to produce & interpret.
6	Should be CE approved.
	<u>Should be supplied with:</u>
1	Uroflow Wireless Transducer – 01 no.
2	Laptop with DeskJet color printer - 1 No. each
3	Graduated Beakers - 04 nos.
4	User manual – 01 no.
5	Service manual – 01 no.

6	Medical Grade Power Cord – 01 no.
7	Urocap IV CD with software key – 01 no.
8	Radioluscent Commode Chair – 01 no.
9	Funnel for Commode Chair – 02 no.
10	Bluetooth Card/USB adaptor – 01 no.
	<u>Technical Specification:</u>
1	Flow Range : 0-50 ml/s
2	Volume Range : 0-1200 ml

62. OT Table- Minor OT

Specification for High End OT Table

1. Electro hydraulic Operated, Twelve function Remote control Table
 - Up & Down Min 29”, Max 44”
 - Trendelenberg & Reverse Trendelenberg (30° either side)
 - Right Lateral & Left Lateral (21° on either side)
 - Back Rest (+ 90° to - 90°)
 - Power Brakes (for Braking & Unbraking the Table)
 - Longitudinal Sliding 400mm either side
2. The Table should be provided with an external charging circuit, which should have an indication for no charge, charging and full charge with colour LED indications.
3. The remote cord should come from the head end of the Table i.e. from the base to facilitate the anesthetist
4. The Table should have six polyurethane castors for longitudinal and lateral movements.
5. The power brakes should be located on the head side of the Table base for better stability.
6. The backrest should have electro hydraulic movement and should be detachable, to fix the other attachments.
7. The table should have an Override panel on the column of the table.
8. The Table should have a zero position. Trendelenburg, Lateral, Backrest all should have leveling sensors. The Zero position should be operated from the remote hand set as well as the Override panel.
9. The Table should have a provision to screen the patient from neck to toe at a single shot without any hindrance.

10. The Table should have a provision to memorise any two positions. It should be erasable and reprogrammable. The provision should be available on both the remote handset and as well as the override panel.
11. The up & down movements should be jerk free and should have high precision glides to avoid wig-wag movement of the column.
12. The table should have an emergency stop, in case of any malfunction. The provision should be available on both the remote handset as well as the override panel.
13. The Table should have battery level indicators, both on the remote hand set and the override panel.
14. The Table should have a sealed bottom to prevent water and dust from entering inside.
15. The Table should have more leg space for the surgeons for lower end surgeries.
16. There should not be any cross bars throughout the length of the Table. The table should be able to stretch to 6 feet without any floor support.
17. Leg bed should be two pieces right and left end should be detachable and abductable and also should move up & down.
18. Tendlenberg and lateral mechanism should be concealed with bellows; column should be straight without any projection on right or left.
19. Table column size should be 280mm X 280mm.
20. Table should have provision to view spine AP and C – arm.
21. Polyurethane detachable cushion top should be provided on the Table top.
22. Base covers should be covered with impact, shock resistant, Fire resistant, and disinfectant free material. Base should be broader in the head end.
23. The column casing, table top frame, traction bars and all accessories made of non-corrosive stainless steel. The main column should be covered with non-corrosive stainless steel.
24. Inbuilt Battery backup should be provided.
25. The Table Top should be reversible, the head rest attachments, the head rest attachments should fix to the tail side and the tail side attachments should fix to the head side.
26. The Table should be capable of taking off centered load. The load carrying capacity should be 380 Kgs.
27. The entire vertebral column should be viewed without any hindrance.
28. Patient sitting position, with Tendlenberg maximum should be possible.
29. Minimum height 27” preferred.
30. The Table should be capable for all surgeries
31. The Table should be supplied with all Orthopaedics Surgery Attachments.
32. Should be CE, ISO-9001-2008, ISO-13485 approved.

The table should be provided following standard accessories

- a. Arm boards with pad & clamp – 2 nos
- b. Anesthesia screen frame & clamp -1 No
- c. Body strap – 1No
- d. Lithotomy knee crutch, padded with radial clamp – 2 Nos

- e. Orthopaedic extension device floor mounted type with accessories for DHS, femur nailing in supine & lateral, with sacral rest and perineal post, Lateral supports (back buttock – 2 nos& public- sacrum- sternum support 1 no) with height adjustment, flexible at 2 joints with additional longitudinal extension.- 1 set
 - f. Hand operating table with telescopic support- 1 no
 - g. Horse shoe head rest for cervical spine surgeries – 1 no
33. Wilson frame for lumbar spine surgeries – 1 no

MANUAL OVERRIDE FUNCTIONS FOR EMERGENCY

PART 2

- It should have a preselector for all the twelve functions
- Isolated manual override to be incorporated in ten function remote control Table
- A foot pedal should be used for pumping to achieve various position
- In case of electrical component failure using this mechanism the table should be operated mechanically
- The manual system should be capable of taking off centered load for screening from neck to toe
- In case of breakdown in the middle of the surgery, there should be a provision to operate manual functions instantly without any time lag

63. OT Ceiling light- Minor OT

DOUBLE COMBINATION OT CEILING Light WITH LED TECHNOLOGY AND CENTRALLY MOUNTED CAMERA SYSTEM

1) **Should have the following Features:**

One major and one Satellite Dome/lighthead of different dimensions

Single Colour White LED,s

Glass Reflector at bottom based LED Technology

Arrangement of LED in such a way that Shadow Free / Deep cavity illumination is achieved

Special design to maximize the field of illumination and optimized illumination depth

Should have good laminar flow properties

Efficient heat management system through heat sink and low power consp.(**alum.housing**)

ESG safety glass for simple and fast disinfection process

360 deg rotation of domes/lightheads / arms for unlimited positioning of light heads

Control on the light heads

Technical Data of Light Heads:

	<u>Major</u>	<u>Satellite</u>
Intensity (Lux)	1,60,000	1,40,000
Life time of light source (h)		>40,000
CRI (Ra)		96
R9		96
Colour Temp(K)		4500
Light Head Power Consumption	less or equal to 65W at 24V DC	

2) Centrally Mounted Camera PAL to be mounted on satellite dome

Camera Should be High Definition (H.D.)

With Zoom Facility and Wall Control

Focus Automatic,manual

Iris: Automatic,manual

White balance: Automatic,manual

3) Monitor flat screen

The Light should meet EN ISO 13485:2007 and European CE certified/ U.S.FDA CERTIFICATE.

64. Pedestal light- OT

TECHNICAL SPECIFICATIONS OF LED MOBILE LIGHT

- The Light should be based on LED Technology
- It should be mobile, with a base with four castors
- For 360 degree illumination, reflector type technology will be preferred
- The system should be highly energy efficient (low wattage power consumption)
- It should be easy to adjust to various positions through a handle, which can be sterilized.
- Efficient heat management system through heat sink and low power consp. (alum.housing)
- Single color white LEDs will be preferred
- Should have a battery backup to switch on in case of power failure
- On Off Switch of the Light should be on the Head segment of the Light.
- Technical details as follows:

I luminance:	1,40,000 or more Lux
Color Temperature:	4500 or more(K)
Color rendering Index Ra:	95 or more
Life of LED:	Not less than 50,000
Hrs	
Dimming Capability:	42,000 to 1, 40,000 lux
Light field diameter at 1 meter distance:	200 to 320 mm
Light Head Power Consumption	Less or equal to 60W
Temperature increase on Head	<1 deg

The Light should meet EN ISO 13485:2007 and CE certified.
Protection class should be as per IEC 60601, UL/CE

65. Electro surgical Unit- Minor OT

- 1) The ESU should be microcontroller based & should deliver optimal clinical effects in all operational modes through continuous synchronization of current & voltage.
- 2) The system should have advance digital signal processing to sample current & voltages more than 1000 times per second and adjust the output accordingly to deliver consistent tissue effect.
- 3) The system should have Automatic contact quality return electrode monitoring system. It should have status indicator bar graph to display the relative quality of the dual dispersive electrode application
- 4) The system should have advance speciality modes for General, Under Water & laparoscopy procedure.
- 5) The system should have minimum 5 programmable memories to store setting speciality wise.
- 6) The system should have pure cut mode with max power of 300W.
- 7) The System should have minimum 3 blend modes with 200 W max powers.
- 1) The system should have endoscopy cut mode for sphincterotomy & polypectomy application.
- 8) The System should have Remote Power control facility to change the power setting from the sterile field.
- 9) The System should have Readiplug Universal Accessory portal, allowing a variety of accessories to be plugged into the footswitch portal without having to use adaptor.
- 10) Illuminated portals for access & visibility.
- 11) The system should have bipolar current meter for providing feedback on desiccations level via audible/visual indicators.
- 12) A Serial interface port for communicating with robotic surgical systems or O.R integration systems.
- 13) The System should have following Monopolar coagulation modes like Pinpoint, Standard, Spray & pulsed.
- 14) The System should have minimum 4 independent output portals for connecting active accessories.
- 15) Simultaneous activation in non-contact monopolar coagulation modes.
- 16) The system should comply with Medical Electrical Equipment Standards like (UL2601-1: 2000, IEC60601-1: 1995,etc
- 17) Type of protection against electric shock: IEC Class 1.
- 18) The system should be US FDA approved.
- 19) Degree of protection against electric shock: Type CF, Defibrillator Proof, Non-Ionizing Radiation.
- 20) The System should have micro & macro bipolar modes.
- 21) Warranty for 5 years.
- 22) The system should come with following standard accessories
- 23) Dual Disposable Patient Plate-100 nos.
- 24) Monopolar footswitch-1no.
- 25) Bipolar footswitch-1no.
- 26) Reusable Hand switching pencil- 5 nos
- 27) Reusable patient plate with cable for Adult & Paediatric application -1 nos each.
- 28) Bayonet bipolar forceps-1no.
- 29) Reusable Autoclavable Forceps cord-1nos.

66. Pulse Oximeter

1. **Should have high resolution Color TFT display of 3.5 inch to view the wave forms and should have LED display to show the numeric readings.**
2. Should be able to measure SPO₂ and NIBP of patient size from neonate to adult.
3. Should have single button Operation for Change in Mode from Adult, Paed and Neonate.
4. Powerful storage for real time data and have facility to transfer in PC, Storage capacity of 100 hrs trend review
5. Should be upgradable into Thermal Printer.
6. **Should display numeric value of Profusion Index/Saturation Index.**
7. Should have 10 Segment LED bar indicator to display pulse strength.
8. Should be capable of connecting with central Station networking.
9. Built-in Lithium-ion Battery for minimum 12 Hours Continuous Working.
10. **Should be USFDA and European CE quality approved.**

67. Anesthesia equipment

The workstation consisting of Anesthesia machine, Vaporizers, Ventilator and Monitor with proper maintenance and back up services. The Anaesthesia machine should be certified with CE/FDA.

Should have five year comprehensive warranty with post warranty AMC and CMC specifically for five years.

Anesthesia Machine

1. Should have pipeline attachments for O₂, N₂O and air and provision for attachment of two O₂ and one N₂O cylinders.
2. Should have double tube bobbin type Rota meters for O₂, N₂O and single / double for air. Should provide low flows with minimum flows of O₂ at the rate of 50-75 ml/min and automatic adjustment to provide minimum 25% O₂ in the gaseous mixture.
3. Should have provision of mounting atleast two selectatec vaporisers simultaneously. Vaporisers for Isoflurane and Sevoflurane to be provided alongwith the machine.
4. Should have conveniently placed bag mount and APL valve assembly and separate facility for using Bain Circuit and Magill circuits.
5. Should have safety features including audio visual alarm system for Oxygen failure, basal flow of oxygen according to international safety guidelines and hypoxic guard.

6. Should have O₂ flush device to deliver oxygen flow > 35 L/min.
7. Should have stainless steel / laminate top, minimum of two drawers to keep accessories. Good mobility, anti static caster wheels with locking facility & Conveniently placed handles for easy movement of the machine.

CO₂ ABSORBER

Should have single/dual canister, entirely autoclavable. Co₂ absorber with removable unautoclavable parts like manometer and oxygen sensors. Absorber system should be automatically bypassed in the event of removal of canister during clinical procedure

ANESTHESIA VENTILATOR

1. Should have large, colored, digital screen with touch / wheel control facility, electronically / pneumatically driven, electronically controlled ventilator and operable on 220 V, 50 Hz AC with a battery back up of at least thirty min
2. Should have modes : Volume controlled, pressure controlled, spontaneous and stand by along with supporting modes like SIMV and suitable for adult, pediatric and neonatal patients.
3. Should have integrated Fio₂ monitor and spirometer, inverse I:E ratio, electronic PEEP referenced trigger facility.
 - a. Should have minimum two waveforms at a time with freezing facility. (Pressure vs. time, volume vs. time, O₂Co₂) with default setting for adult and pediatric provision to change according to the patients.
 - b. It should have tidal volume range from 20ml to 1400ml.
 - c. It should have breath range of 4 to 60 bpm.
 - d. Should have inverse I:E ratio capability.
 - e. Should have Electronic Peep 5-20 cmH₂O.
 - f. Should have interface with absorber/ventilator i.e. operation of the bag/vent control on the absorber to trigger automatic mode change on the ventilator.
 - g. The ventilator should have facility for anesthetic gas scavenging & audiovisual alarms.

The Anaesthesia Workstation should be accompanied with following accessories.

- a. Standard Bain Circuit :2 Nos.
- b. Jackson Rees circuit Pediatric : 1 No
- c. Face Mask 0,1, 2, 3, 4 & 5 -2 Nos. each
- d. Bain Circuit – 2 Nos.
- e. Breathing bag 2 ltrs. & 500 ml- 2 each
- f. Other necessary accessories required for anaesthesia as per specifications asked in tender

Monitor Specs

- a. The monitors should have bright, highly visible minimum 12.1”high resolution screen colour TFT display.
- b. The weight of the monitor should be less than 4.5 Kg with battery.
- c. Monitor should has capability to display of 12 waveforms along with related numerical parameters on a single screen
- d. Should have ST Analysis and atleast 16 types Arrhythmia detection.

- e. Model has capability of showing Large Fonts screen for viewing from very long distance.
- f. Model has facility atleast 90 hours of trend analysis to monitor the performance and the condition of the patient in Tabular & Graphical mode.
- g. Should have facility to run on mains and rechargeable battery with continuous battery backup of minimum 4 hour
- h. It should be a valid US FDA and CE approved monitor.
- i. It should be upgradable to Dual IBP
- j. Standard Parameters required in monitor with accessories are as under -
- k. ECG
- l. Respiration
- m. Non Invasive Blood Pressure
- n. Pulse Oximetry
- o. Dual Temperature
- p. ETCO2 (Side Stream)

68. Assorted Surgical Instruments for Minor operation

MINOR SET - EACH SET CONSISTING OF:		
S.NO.	DESCRIPTION	QTY
1	HALSTED MOSQUITO ARTERY FORCEPS CD.125mm	12
2	HALSTEAD MOSQUITO ARTERY FORCEPS ST125mm	6
3	SPENCER WELLS HAEMOSTATIC FORCEPSCD.125mm	6
4	SPENCER WELLS HAEMOSTATIC FORCEPSST.125mm	6
5	ALLIS TISSUE GRASPING FORCEPS 150mm	4
6	BABCOCK TISSUE GRASPING FORCEPS150mm	2
7	KOCHERS HAEMOSTATIC FORCEPS ST.150mm	2
8	METZENBAUM SCISSORS STRAIGHT 200mm	2
9	MAYOS SCISSORS ST. 160mm	1
10	MAYO HEGARS NEEDLE HOLDERS 150mm	2
11	MAYO HEGARS NEEDLE HOLDERS 200mm	1
12	LANGENBECK RETRACTOR 215mm,35X15mm	2
13	SPONGE HOLDING DRESSING FORCEPS250mm	1
14	SUCTION TIP.	1
15	BACKHAUS TOWEL CLAMPS 125mm	5
16	B.P HANDLE NO.3	1
17	B.P.HANDLE NO.4	1
18	STANDARD DISSECTING FORCEPS PLAIN150mm	2
19	STD DISSECTING FORCEPS TOOTHED150mm	2

69. Monitors for Pulse, Heart rate, ECG, Invasive & no Invasive pressure

General specifications:

1. The monitor should have adult, paediatric and neonatal applications and should be user friendly.
2. It should be capable of monitoring ECG, noninvasive blood pressure, oxygen saturation(SpO₂), Respiration, Temp & Invasive blood pressure. If 2 SpO₂ modules are connected than it should be able to display both site saturation.
3. The monitor should be with colour touch screen of **minimum 15" in size** with coloured waveforms. The monitor should have vertical display. Display of waveform as well as the numbers should be clearly visible from a distance of up to 6-10 feet.
4. The Touchscreen should be full touchscreen and not touch buttons.
5. The monitor should be upgradeable to ETCO₂, Thermodilution Cardiac output. The upgradable parameters should be modules & should be freely exchangeable for same make of monitors. The Prices of upgraded module should be provided separately & without it submitted bid will not be considered.
6. The monitor should display at least 11 curves at a given time and the operator should be able to arrange curves, graphics and measured value fields as desired on the screen. The operator should be able to freeze the waveforms as well.
7. Monitor should have an internal battery, which should last for more than two hour.
8. It should have a facility of data storage for at least 150 hours of trended parameters and should also have graphical & tabular trends. Should store data on SD card / Flash card memory which can be removed from one monitor and plugged in another monitor of same make.
8. Should have a facility to deactivate all the alarms if necessary.
10. The monitor should have memory storage and in event of power failure the memory should remain when monitor is turned on.
11. The monitor should have flexibility of being used as well /pole mounted or as transport monitor. Price of wall mount should be quoted separately.
12. The main unit should have rechargeable battery with operating time of atleast 120 minutes. The unit should also have option for 2nd battery so that battery backup time can be increased.
13. The unit should be CE/FDA approved.
14. The monitor should facility to connect to Wired / Wi Fi Central station.
15. On non connection of any parameter the screen should automatically adjust the waveform placement.

ECG monitoring: Essential specifications

1. Available leads: I, II, III, V, AVR, AVL, AVF, V1, V2, V3, V4, V5, V6 with facility for recording 12 lead ECG. For 12 lead ECG, 10 Lead patient cable should be provided as standard and monitor should be able to measure 12 Lead ECG at any point of time.
2. Should display one or all the selected leads at a time
3. Accuracy of $\pm 1\%$ or ± 1 beat / min. (whichever is greater)
4. Should efficiently filter out the electrical disturbances.

5. Should have ST segment analyzer. Should analyse all 12 lead ST segment.
6. Should have arrhythmia monitoring facility.
7. Should have user selectable alarms.
8. Heart rate measuring range: 15-300 beats/min
9. Standard AHA standardized, CE certified, ECG cable should be provided.

Pulse oximeter (SpO₂ – MASIMO/NELCORE only)

1. Should provide a digital value of the arterial oxygen saturation as well as diagnostic plethysmographic pulse waveform.
2. Measurement range: 0% to 100%
3. User selectable upper and lower alarm limits.
4. Standard reusable pulse oximetry probes for adult, paediatric and neonatal use.
5. Should be sensitive and function accurately even at low perfusion states of low blood pressure or hypothermic conditions.
6. One additional long 3m cable should be quoted with each monitor.

Respiration

1. Range: 0-120 rpm or more
2. Accuracy: ± 2 rpm
3. Should have an apnoea alarm

Non-invasive blood pressure (NIBP) monitoring:

1. Should have Oscillometric method of measurement of BP.
2. Range: 10-250 mm Hg for adults, 10-200 for paediatric and 10-135 for neonates
3. Should provide over pressure protection
4. BP cuffs should be latex free, CE certified, washable and sterilizable, Velcro based, carrying artery symbol and index line
5. Accessories, NIBP cuff:
 - a. For Adult Thigh
 - b. For arm: Large adult, Adult, Small adult, Paediatric, Neonatal

IBP (Invasive Blood Pressure)

1. Should have dual channel IBP
2. Should measure all types of Invasive pressures
3. Should be supplied with 5 disposable IBP transducers.

Recorder:

1. Monitor should be equipped with a compact thermal recorder with a capacity to record up to 3 waveforms together or separately in different combinations as desired.
2. Sweep speed should be adjustable from 12.5 to 50 mm / sec

Up-gradation:

1. The monitor should have the facility of up-gradation to incorporate additional newer modules or functions like EtCo₂, Multigas monitoring, CO, etc.
2. The monitor should be upgradeable to 4 channel IBP.

Accessories to be supplied with each Monitor :

10 Lead ECG cable – 1 nos.

Adult SpO₂ Probe – 1 nos.

NIBP Cuffs (Adult, Paediatric & Neonate) – 1 each

NIBP Hose – 1 no.

Temperature Probes – 2 nos.

Thermal Paper Pack – 1 nos.

Power cord -1 no.

Warranty Card – 1 no.

Optional

ETCO2 (Capnography)

1. The monitor should have Micro stream/side stream/Main Stream capnography
2. Measurement range : 0.0~15%
Resolution : 1 mmHg
3. Sampling flow : 50 ml/min
4. Rise Time: CO2: < 200 ms
5. Total system response time: CO2 < 3 sec
Breath detect: Adaptive threshold, minimum 1 vol% CO2 change
6. Unit selection : %, mmHg, kPa
7. Accuracy : At<5% CO2, $\pm 3\%$ (± 2.0 mmHg)
At<5% CO2, $\pm 10\%$ of reading
8. Range of respiration rate measurement : 0~150 rpm

Cardiac Output (CO)

Method: Thermodilution

Range:

CO : 1.4 ~ 15 L / min

HR : 40~250 bpm

Multigas (Sidestream) Module

Measurement method : Infrared spectrum

Measurement parameters :

CO2, N2O, O2 , Anaesthetic agent(HAL, ISO, ENF, SEV, DES)

O2 measurement should be paramagnetic cell. And if galvanic cell than Oxygen cell for the same should be provided for 5 yrs from the date of installation

Should display MAC values for agent

Resolution : 1%

Unit : %, mmHg

Measurement and alarm for Anaesthesia Gas

Respiration rate range : 0~150 rpm

Sample flow rate: 50 ml/min \pm 10 ml/min

70. General Sets- OT

CAT.NO.	DESCRIPTION	QTY
	LAPAROTOMY SET - EACH SET CONSISTING OF:	
1	FOERSTER-BALLENGER SPONGE &DRESSINGFORCEP SMOOTH JAWS 240MM ST.	3

2	MAYO HEGAR NEEDLE HOLDER T/C TIP200MM	1
3	MAYO HEGAR NEEDLE HOLDER T/C TIP180MM	2
4	MAYO HEGAR NEEDLE HOLDER T/C TIP150MM	1
5	SPENCER WELLS HAEMOSTATIC FORCEPSCD.150mm	20
6	HALSTEAD MOSQUITO ARTERY FORCEPS ST125mm	4
7	ALLIS TISSUE GRASPING FORCEPSATRAUMATIC JAW 150mm	6
8	ALLIS TISSUE GRASPING FORCEPSATRAUMATIC JAW 200mm	6
9	BABCOCK TISSUE GRASPING FORCEPSATRAUMATIC JAW 150mm	4
10	BABCOCK TISSUE GRASPING FORCEPSATRAUMATIC JAW 200mm	4
11	KELLYS FORCEPS 20CM CURVED	4
12	MIXTERS LIGATURE FORCEPS 230mm	3
13	BABY MIXTER LIGATURE FORCEPS 185mm	3
14	SPENCER WELLS HAEMOSTATIC FORCEPSSST. 150mm	2
15	HALSTEAD MOSQUITO ARTERY FORCEPS ST125mm	4
16	KOCHERS HAEMOSTATIC FORCEPS ST.150mm	2
17	BACKHAUS TOWEL CLAMPS 125mm	1
18	B.P.HANDLE NO.4	2
19	B.P.HANDLE NO.7	1
20	DEBAKEY DISSECTING FORCEP TRAUMANILJAWS ST. 2mm 150mm	2
21	DEBAKEY DISSECTING FORCEP TRAUMANILJAWS ST. 2mm 230mm	2
22	WAUGH TOOTHED DISSECTING FORCEPSMEDIUM 20CM	2
23	METZENBAUM SCISSORS CURVED TC TIP145mm	1
24	METZENBAUM SCISSORS TC TIP CD 180mm	1
25	METZENBAUM SCISSORS TC TIP CD200mm	1
26	NELSON METZENBAUM SCISSORS TC TIPCD. 260MM	1
27	MAYOS SCISSORS CURVED 230mm	1
28	MAYOS SCISSORS CD. 160mm	1
29	YAUNKERS SUCTION TUBE(BST530)	1
30	KOCHERS STOMACH CLAMPS ST. 250mm	2

31	KOCHERS STOMACH CLAMPS CD. 250mm	2
32	PAYRS STOMACH CLAMPS SMALL 70mm,200mm	1
33	PAYRS STOMACH CLAMPS LARGE 145mm315mm	1
34	DESJARDINS GALL STONE FORCEPS240MM.	1
35	DESJARDINS GALL STONE FORCEPS225MM.	1
36	POOLS SUCTION TUBE STRAIGHT(BST532)	1
37	MORRIS RETRACTOR 230mm 65x65mm	2
38	MORRIS RETRACTOR 230mm 30 X 40mm	2
39	HARRINGTON LING SPATULA SCAPULARETRACTOR 45x123mm 300mm	3
40	HARRINGTON LUNG SPATULA SCAPULARETRACTOR 64x123mm 300mm	1
41	POZZI TRIPLE BLADED RET.L.B 38X80mmOP.120mm 55 X 65mm	1
42	DEAVERS RETRACTORS ADULT 300X25mm	1
43	DEAVERS RETRACTORS ADULT 300X50mm	1
44	DEAVERS RETRACTORS ADULT 300X75mm	1
45	MAYOS SAFETY PIN INSTRUMENT HOLDER140mm	2
46	CZERNY RETRACTOR 175MM, 38 X 22MM	2
	MINOR LAPAROTOMY SET CONSISTING OF:	
47	FOERSTER-BALLENGER SPONGE &DRESSINGFORCEP SMOOTH JAWS 240MM ST.	3
48	MAYO HEGAR NEEDLE HOLDER T/C TIP200MM	1
49	MAYO HEGAR NEEDLE HOLDER T/C TIP180MM	2
50	MAYO HEGAR NEEDLE HOLDER T/C TIP150MM	1
51	SPENCER WELLS HAEMOSTATIC FORCEPSCD.150mm	20
52	HALSTEAD MOSQUITO ARTERY FORCEPS ST125mm	4
53	ALLIS TISSUE GRASPING FORCEPSATRAUMATIC JAW 150mm	4
54	ALLIS TISSUE GRASPING FORCEPSATRAUMATIC JAW 200mm	4
55	BABCOCK TISSUE GRASPING FORCEPSATRAUMATIC JAW 150mm	4
56	BABCOCK TISSUE GRASPING FORCEPSATRAUMATIC JAW 200mm	4

57	KELLYS FORCEPS 20CM CURVED	2
58	MIXTERS LIGATURE FORCEPS 230mm	1
59	BABY MIXTER LIGATURE FORCEPS 185mm	1
60	SPENCER WELLS HAEMOSTATIC FORCEPSST. 150mm	1
61	HALSTEAD MOSQUITO ARTERY FORCEPS ST125mm	4
62	KOCHERS HAEMOSTATIC FORCEPS ST.150mm	2
63	BACKHAUS TOWEL CLAMPS 125mm	1
64	B.P.HANDLE NO.4	2
65	B.P.HANDLE NO.7	1
66	DEBAKEY DISSECTING FORCEP TRAUMANILJAWS ST. 2mm 150mm	2
67	DEBAKEY DISSECTING FORCEP TRAUMANILJAWS ST. 2mm 230mm	2
68	WAUGH TOOTHED DISSECTING FORCEPSMEDIUM 20CM	2
69	METZENBAUM SCISSORS CURVED TC TIP145mm	1
70	METZENBAUM SCISSORS TC TIP CD 180mm	1
71	METZENBAUM SCISSORS TC TIP CD200mm	1
72	NELSON METZENBAUM SCISSORS TC TIPCD. 260MM	1
73	MAYOS SCISSORS CURVED 230mm	1
74	MAYOS SCISSORS CD. 160mm	1
75	YAUNKERS SUCTION TUBE(BST530)	1
76	KOCHERS STOMACH CLAMPS ST. 250mm	2
77	KOCHERS STOMACH CLAMPS CD. 250mm	2
78	PAYRS STOMACH CLAMPS SMALL 70mm,200mm	1
79	PAYRS STOMACH CLAMPS LARGE 145mm315mm	1
80	POOLS SUCTION TUBE STRAIGHT(BST532)	1
81	MORRIS RETRACTOR 230mm 65x65mm	2
82	MORRIS RETRACTOR 230mm 30 X 40mm	2
83	HARRINGTON LING SPATULA SCAPULARETRACTOR 45x123mm 300mm	3
84	HARRINGTON LUNG SPATULA SCAPULARETRACTOR 64x123mm 300mm	1
85	POZZI TRIPLE BLADED RET.L.B 38X80mmOP.120mm 55 X 65mm	1
86	DEAVERS RETRACTORS ADULT 300X25mm	1
87	DEAVERS RETRACTORS ADULT 300X50mm	1
88	DEAVERS RETRACTORS ADULT 300X75mm	1

89	MAYOS SAFETY PIN INSTRUMENT HOLDER140mm	2
90	CZERNY RETRACTORS 175mm,38X22mm38X22mm	2
	KIDNEY SPECIAL SET CONSISTING OF:	
91	B.P.HANDLE NO.4	1
92	B.P.HANDLE NO.7	1
93	BACKHAUS TOWEL CLAMPS 125mm	8
94	FARABEUF RASPATORIES CD.140mm	1
95	DOYEN'S RIB RASP.LEFT,ADULT	1
96	DOYEN'S RASP RIGHT,ADULT	1
97	SAUERBRUCH RIN RONGEURS POWERFULC/ACTION 310mm ROUND BITE	1
98	NELSON METZENBAUM SCISSORS TC TIPCD. 260MM	1
99	METZENBAUM SCISSORS TC TIP CD200mm	1
100	POTTS-SMITH SCISSORS ANGLED ON SIDE45DEG. 185mm	1
101	MAYOS SCISSORS CD. 160mm	1
102	MAYOS SCISSORS CURVED 230mm	1
103	DEBAKEY DISSECTING FORCEP TRAUMANILJAWS ST. 2mm 150mm	1
104	DEBAKEY DISSECTING FORCEP TRAUMANILJAWS ST. 2mm 230mm	1
105	STD DISSECTING FORCEPS TOOTHED150mm	1
106	STANDARD DISSECTING FORCEPS TOOTHED200mm	1
107	DESMARRES RETRACTOR HANDHELD FORGEDSINGLE PIECE 13x18mm 140mm	2
108	BABY DISS.& L/FORCEPS MIXTERPARTIAL SERRATED JAW 140mm	1
109	BABY DISS.& L/FORCEPS MIXTERPARTIAL SERRATED JAWS180mm	1
110	MIXTERS LIGATURE FORCEPS 230mm	1
111	CRILES ARTERY FORCEPS CD. 160mm	20
112	HALSTED MOSQUITO ARTERY FORCEPS CD.125mm	4
113	PEAN KIDNEY CLAMP 220MM	2
114	ROBERTS HAEMOSTATIC FORCEPS CD.245mm	4
115	ADSONS DISSECTING FORCEPS TOOTHED125mm	1
116	MORRIS RETRACTOR 230mm 65x65mm	1

117	MORRIS RETRACTOR 230mm 35 X 50mm	1
118	HARRINGTON LING SPATULA SCAPULARETRACTOR 45x123mm 300mm	1
119	HARRINGTON LUNG SPATULA SCAPULARETRACTOR 64x123mm 300mm	1
120	DEAVERS RETRACTORS ADULT 300X25mm	1
121	DEAVERS RETRACTORS ADULT 300X38mm	1
122	DEAVERS RETRACTORS ADULT 300X50mm	1
123	CZERNY RETRACTORS 175mm,38X22mm38X22mm	2
124	MAYO HEGAR NEEDLE HOLDER T.C.TIP250MM	1
125	MAYO HEGAR NEEDLE HOLDER T/C TIP200MM	1
126	MAYO HEGAR NEEDLE HOLDER T/C TIP150MM	1
	MICRO VASCULAR SET CONSISTING OF:	
127	CASTROVIEJO NEEDLE HOLDER WITHCATCH 145MM T.C. TIP	1
128	CASTROVIEJO NEEDLE HOLDERS WITHCATCH 180mm T.C. TIP	1
129	CASTROVIEJO NEEDLE HOLDER ST.WITHCATCH 145mm	1
130	CASTROVIEJO NEEDLE HOLDER CD.WITHCATCH 145mm	1
131	BARRAQUER-NEEDLE HOLDER CURVEDJAWS 12CM LONG	1
132	MICRO NEEDLE HOLDER W/O CATCH ST.185mm	1
133	MICRO NEEDLE HOLDER WITH OUT CATCHCD. 185mm	1
	BULLDOG CLAMPS:	
134	DEBAKEY BULLDOG CLAMP CURVED 73MMLONG TRAUMANIL JAWS	2
135	DEBAKEY BULLDOG VASCULAR CLAMPS CD80mm	2
136	DEBAKEY BULLDOG CLAMPS CROSS ACTIONCD. 124mm	2
137	DEBAKEY BULLDOG VASCULAR CLAMPSST.80mm	2
138	DEBAKEY BULLDOG CLAMPS CROSS ACTIONST. 124mm	2
139	DEBAKEY BULLDOG CLAMPS ATRAUMATIC JAWS ANGLED50MM,	2

140	GLOVER BULLDOG CLAMPS TRAUMANILJAWS CD.68mm	2
141	GLOVER BULLDOG CLAMPS TRAUMANILJAWS CD.96mm	2
142	MICRO SCISSOR WIDE FLAT HANDLESWITH DEEP SERRATIONS FOR GRIP CURVED 16CM	1
143	MICRO SCISSOR WIDE FLAT HANDLESWITH DEEP SERRATIONS FOR GRIP ST. 16CM	1
144	JEWELLERS MICRO FORCEPS ST. TIP0.15mm x 110mm	1
145	JEWELLERS MICRO FORCEPS CD. TIP0.2mm x 115mm	1
146	DEBAKEY DILATORS SET OF 12 0.5mm TO5mm DIA MALLEABLE 190mm	1
	CUT DOWN SET - (VENAESECTION SET) CONSISTING OF:	
147	MAYO HEGAR NEEDLE HOLDER T/C TIP150MM	1
148	HALSTED MOSQUITO ARTERY FORCEPS CD.125mm	4
149	HALSTEAD MOSQUITO ARTERY FORCEPS ST125mm	4
150	BACKHAUS TOWEL CLAMPS 125mm	6
151	ALLIS TISSUE GRASPING FORCEPSATRAUMATIC JAW 150mm	2
152	DEBAKEY DISSECTING FORCEP TRAUMANILJAWS ST. 2mm 150mm	1
153	STD DISSECTING FORCEPS TOOTHED150mm	1
154	B.P HANDLE NO.3	1
155	METZENBAUM SCISSORS TC TIP CD200mm	1
156	IRIS SCISSORS STRAIGHT 115mm	1
157	MAYOS SCISSORS CD. 160mm	1
158	SENN MILER SKIN RETRACTOR 165mm	2
	INTERCOASTAL DRAINAGE SET CONSISTING OF:	
159	KELLYS FORCEPS 20CMCURVED	4
160	SPENCER WELLS HAEMOSTATIC FORCEPSCD.150mm	12
161	METZENBAUM SCISSORS TC TIP CD 180mm	4

162	MAYOS SCISSORS CURVED 230mm	4
163	MAYO HEGAR NEEDLE HOLDER T/C TIP180MM	4
164	DEBAKEY DISSECTING FORCEP TRAUMANILJAWS ST. 2mm 200mm	4
165	STANDARD DISSECTING FORCEPS PLAIN125mm	4
166	B.P.HANDLE NO.4	2
167	B.P.HANDLE NO.7	2
	TRACHEOSTOMY SET CONSISTING OF:	
168	KELLYS FORCEPS 20CM CURVED	4
169	SPENCER WELLS HAEMOSTATIC FORCEPSCD.150mm	12
170	METZENBAUM SCISSORS TC TIP CD 180mm	4
171	MAYOS SCISSORS CURVED 230mm	4
172	MAYO HEGAR NEEDLE HOLDER T/C TIP180MM	4
173	DEBAKEY DISSECTING FORCEP TRAUMANILJAWS ST. 2mm 200mm	4
174	STANDARD DISSECTING FORCEPS PLAIN125mm	4
175	METZENBAUM SCISSORS TC TIP CD 180mm	4
176	TRACHEAL DILATORS 120mm	4
177	BOSE TRACHEAL LIGATURE NEEDLE, LEFT, FOR RIGHT HAND 165MM	4
178	BOSE TRACHEAL LIGATURE NEEDLE, RIGHT, FOR LEFT HAND 165MM	4
179	WOUND RETRACTOR FLEXIBLE NECK2 PRONGS BLUNT 16CM	1
180	B.P.HANDLE NO.4	4
	SKIN GRAFTING SET CONSISTING OF:	
181	FOERSTER-BALLENGER SPONGE &DRESSINGFORCEP SMOOTH JAWS 240MM ST.	2
182	MAYO HEGAR NEEDLE HOLDER T/C TIP200MM	1
183	MAYO HEGAR NEEDLE HOLDER T/C TIP150MM	1
184	CRILES ARTERY FORCEPS CD. 160m	8
185	HALSTEAD MOSQUITO ARTERY FORCEPS ST125mm	8
186	HUMBY'S SKIN GRAFTING KNIFE FIBREHANDLE 300mm	1

187	BACKHAUS TOWEL CLAMPS 125mm	6
188	ALLIS TISSUE GRASPING FORCEPS ATTRAUMATIC JAW 150mm	2
189	ALLIS TISSUE GRASPING FORCEPS ATTRAUMATIC JAW 200mm	2
190	SKIN GRAFTING MEASURE	2
191	DEBAKEY DISSECTING FORCEP TRAUMANILJAWS ST. 2mm 150mm	1
192	ADSONS DISSECTING FORCEPS TOOTHED 125mm	1
193	B.P HANDLE NO.3	1
194	METZENBAUM SCISSORS TC TIP CD 200mm	1
195	IRIS SCISSORS STRAIGHT 115mm	1
196	GILLIES SKIN HOOK 185mm	3
197	STD DISSECTING FORCEPS TOOTHED 150mm	2
198	MAYOS SCISSORS CD. 160mm	1
	VASECTOMY SET CONSISTING OF:	
199	RAMPLEY SPONGE & DRESSING FORCEPS 180MM	2
200	BACKHAUS TOWEL CLAMPS 85mm	4
201	B.P HANDLE NO.3 SISCO	1
202	GILLIES TISSUE FORCEPS 1x2 TEETH 150mm	2
203	MCINDOE DISSECTING FORCEPS 150mm	2
204	TOENNIS-ADSON SCISSORS TC TIP CD. 175MM	1
205	MAYOS SCISSORS CD 135mm	1
206	HALSTED MOSQUITO ARTERY FORCEPS CD. 125mm	4
207	CRILES HAEMOSTATIC FORCEPS CD. 140mm	2
208	ALLIS TISSUE GRASPING FORCEPS 150mm	2
	EPISIOTOMY SET CONSISTING OF:	
209	BRAUN-STADLER EPISTOMY SCISSORS ONE BLADE SERRATION 150mm	1
210	STD DISSECTING FORCEPS TOOTHED 150mm	1
211	STANDARD DISSECTING FORCEPS PLAIN 150mm	1
212	HALSTEAD MOSQUITO ARTERY FORCEPS ST 125mm	2
213	MAYO HEGARS NEEDLE HOLDERS 150mm	1

214	BACKHAUS TOWEL CLAMPS 85mm	2
	RECTAL INSTRUMENT SET CONSISTING OF:	
215	CZENEY'S RECTAL SPECULUM 20CM	1
216	LLOYD-DAVIS RETRACTOR	1
217	YEOMAN'S RECTAL BIOPSY FORCEPS 355MM	2
	GENITOURINARY INSTRUMENT SET CONSISTING OF:	
218	MUSEUX UTERINE VULSELLUM FORCEPSCD. TO SIDE S/J 2X2 TEETH 240MM SM.	2
219	SIMS VAGINAL SPECULUM SMALL65 x 26mm x 72 x 30mm	1
220	SIMS VAGINAL SPECULUM MEDIUM70 x32mm x 75 x 35mm	1
221	SIMS VAGINAL SPECULUM LARGE72 x 34mm x 80 x 38mm	1
222	LEGUEU BLADDER RETRACTOR260MM	2
223	CLUTTON URETHERAL DILATORS(SET OF 12)	1
	APPENECTOMY SET CONSISTING OF:	
224	HALSTED MOSQUITO ARTERY FORCEPS CD.125mm	6
225	HALSTEAD MOSQUITO ARTERY FORCEPS ST125mm	6
226	SPENCER WELLS HAEMOSTATIC FORCEPSCD.150mm	6
227	SPENCER WELLS HAEMOSTATIC FORCEPSSST. 150mm	6
228	ALLIS TISSUE GRASPING FORCEPS 150mm	4
229	ALLIS TISSUE GRASPING FORCEPS 200mm	2
230	BABCOCK TISSUE GRASPING FORCEPS200mm	2
231	BABCOCK TISSUE GRASPING FORCEPS150mm	2
232	KELLYS ARTERY FORCEPS CD. 160mm	2
233	KELLYS ARTERY FORCEPS STRAIGHT25CM	2
234	FARABEUFR RETRACTORS 150mm,20X16mm24X16mm	1
235	KELLYS HAEMOSTATIC FORCEPS ST.160mm	2
236	MAYO HEGARS NEEDLE HOLDERS 150mm	2

237	MAYO HEGARS NEEDLE HOLDERS 200mm	1
238	MAYOS SCISSORS ST. 160mm	1
239	METZENBAUM SCISSORS STRAIGHT 200mm	1
240	DRESSING SCISSORS SH/SH STRAIGHT125mm	1
241	SPONGE HOLDING DRESSING FORCEPS250mm	1
242	YAUNKERS SUCTION TUBE(BST530)	1
243	B.P HANDLE NO.3	1
244	B.P.HANDLE NO.4	1
245	STD DISSECTING FORCEPS TOOTHED150mm	1
246	STANDARD DISSECTING FORCEPS PLAIN150mm	1
247	STANDARD DISSECTING FORCEPS TOOTHED200mm	1
248	STANDARD DISSECTING FORCEPS PLAIN200mm	1
249	BACKHAUS TOWEL CLAMPS 85mm	5
250	MORRIS RETRACTOR 230mm 30 X 40mm	1
251	LANGENBECK RETRACTOR 215mm,35X15mm	4
	BIOPSY SET CONSISTING OF:	
252	HALSTED MOSQUITO ARTERY FORCEPS CD.125mm	6
253	HALSTEAD MOSQUITO ARTERY FORCEPS ST125mm	2
254	SPENCER WELLS HAEMOSTATIC FORCEPSCD.150mm	4
255	SPENCER WELLS HAEMOSTATIC FORCEPSSST. 150mm	2
256	ALLIS TISSUE GRASPING FORCEPS 150mm	2
257	MIXTERS LIGATURE FORCEPS 200mm	2
258	MAYO HEGARS NEEDLE HOLDERS 150mm	1
259	METZENBAUM SCISSORS STRAIGHT 180mm	1
260	SENN MILER SKIN RETRACTOR 165mm	2
261	STANDARD DISSECTING FORCEPS PLAIN150mm	2
262	STD DISSECTING FORCEPS TOOTHED150mm	2
263	BACKHAUS TOWEL CLAMPS 85mm	4
264	DOUBLE HOOK RETRACTOR BLUNT 160mm	1
265	MOLLISON S/R RETRACTOR 4X4 PRONGSSHARP 150mm	1
266	MAYOS SCISSORS ST. 160mm	1
267	B.P HANDLE NO.3	2

268	SPENCER WELLS HAEMOSTATIC FORCEPSST. 200mm	1
269	KOCHERS HAEMOSTATIC FORCEPS ST.150mm	2
270	LANGENBECK RETRACTORS 215mm,25X6mm	2
271	BABCOCK TISSUE GRASPING FORCEPS150mm	1
	LOBECTOMY SET CONSISTING OF:	
272	HALSTED MOSQUITO ARTERY FORCEPS CD.125mm	6
273	HALSTEAD MOSQUITO ARTERY FORCEPS ST125mm	6
274	SPENCER WELLS HAEMOSTATIC FORCEPSCD.150mm	6
275	SPENCER WELLS HAEMOSTATIC FORCEPSST. 150mm	6
276	ALLIS TISSUE GRASPING FORCEPS 180mm	4
277	KOCHERS HAEMOSTATIC FORCEPS CD.180mm	4
278	BABCOCK TISSUE GRASPING FORCEPS150mm	2
279	BABCOCK TISSUE FORCEPS23CM	2
280	ALLIS TISSUE GRASPING FORCEPS 200mm	4
281	KOCHERS HAEMOSTATIC FORCEPS CD.200mm	4
282	KOCHERS HAEMOSTATIC FORCEPS ST.200mm	4
283	TONSIL ARTERY FORCEPS 8" STRIGHT	2
284	SPENCER WELLS HAEMOSTATIC FORCEPSCD. 200mm	4
285	ROBERTS HAEMOSTATIC FORCEPS CD.245mm	2
286	MIXTERS LIGATURE FORCEPS 230mm	3
287	MAYO NEEDLE HOLDER 25CM	5
288	DUVALS TISSUE & ORGAN LUNG FORCEPS230mm	2
289	SPONGE HOLDING DRESSING FORCEPS250mm	2
290	MAYOS SCISSORS CD. 160mm	2
291	MAYOS SCISSORS ST. 160mm	1
292	BRONCHUS CLAMPS LESS TRAUMANIL JAWSRIGHT ANGLE 220mm	1
293	BRONCHUS SWAN NECK 245mm	1
294	YAUNKERS SUCTION TUBE(BST530)	2
295	ALLISON LUNG SPATULA SCAPULARETRACTOR WIRE ADULT	1
296	STANDARD DISSECTING FORCEPS PLAIN200mm	4

297	STANDARD DISSECTING FORCEPS TOOTHED200mm	1
298	STANDARD DISSECTING FORCEPS PLAIN150mm	1
299	STANDARD DISSECTING FORCEPS PLAIN125mm	1
300	BACKHAUS TOWEL CLAMPS 85mm	1
301	B.P HANDLE NO.3	2
302	ANDERSON ADSON S/R RETRACTOR 4X4PRONGS SHARP 195mm	5
303	LANGENBECK RETRACTOR 215mm,35X15mm	3
304	STD DISSECTING FORCEPS TOOTHED150mm	1
305	STANDARD DISSECTING FORCEPS TOOTHED125mm	1
	HERNIA SET CONSISTING OF:	
306	HALSTED MOSQUITO ARTERY FORCEPS CD.125mm	6
307	HALSTEAD MOSQUITO ARTERY FORCEPS ST125mm	6
308	SPENCER WELLS HAEMOSTATIC FORCEPSCD.150mm	6
309	SPENCER WELLS HAEMOSTATIC FORCEPSSST. 150mm	6
310	BABCOCK TISSUE GRASPING FORCEPS150mm	2
311	ALLIS TISSUE GRASPING FORCEPS 150mm	4
312	KOCHERS HAEMOSTATIC FORCEPS CD.150mm	4
313	TONSIL ARTERY FORCEPS 8" STRIGHT	1
314	METZENBAUM SCISSORS STRAIGHT 180mm	3
315	MAYO HEGARS NEEDLE HOLDERS 200mm	1
316	MAYO HEGARS NEEDLE HOLDERS 150mm	2
317	HERNIA RING GALL BLADDER FORCEPS145mm	1
318	SPONGE HOLDING DRESSING FORCEPS250mm	1
319	KOCHERS HAEMOSTATIC FORCEPS CD.200mm	2
320	BACKHAUS TOWEL CLAMPS 110mm	5
321	LANGENBECK RETRACTORS 215mm,40X11mm	2
322	MORRIS RETRACTOR 230mm 30 X 40mm	1
323	B.P.HANDLE NO.4	1
324	B.P.HANDLE NO.7	1
325	STD DISSECTING FORCEPS TOOTHED150mm	1
326	STANDARD DISSECTING FORCEPS PLAIN150mm	1
327	STANDARD DISSECTING FORCEPS PLAIN200mm	1

328	STANDARD DISSECTING FORCEPS TOOTHED200mm	1
	A.V. FISTULA SET CONSISTING OF:	
329	HALSTED MOSQUITO ARTERY FORCEPS CD.125mm	6
330	HALSTEAD MOSQUITO ARTERY FORCEPS ST125mm	2
331	BACKHAUS TOWEL CLAMPS 125mm	3
332	ALLIS TISSUE GRASPING FORCEPSATRAUMATIC JAW 150mm	2
333	DEBAKEY DISSECTING FORCEP TRAUMANILJAWS ST. 2mm 150mm	1
334	ADSON DISSECTING FORCEPS120mm, T/C TIP -	1
335	DEBAKEY DILATORS SET OF 12 0.5mm TO5mm DIA MALLEABLE 190mm	1
336	STD DISSECTING FORCEPS TOOTHED150mm	1
337	HALSEY NEEDLE HOLDERS 130mmT.C. TIP	1
	POSTMARTEM SET CONSISTING OF:	
338	SCALPEL METAL HANDLE 6" - (SET OF 3)	1
339	CARTILAGE KNIFE WITH SCRAPER	1
340	INCISION SCISSOR 6" -	1
341	BONE SHEAR 9" -	1
342	BOWL SCISSOR 21CM	1
343	STANDARD DISSECTING FORCEPS PLAIN 125MM	2
344	BOW SAW, 8-1/2" -	1
345	BERGMANN Mallet WEIGHT 300GMS	1
346	CHISEL	2
347	SPINE WRENCH 22CM	1
348	BLOW PIPES, DOUBLE, STRAIGHT	2
349	RETRACTOR DOUBLE ENDED WITH TWO PRONGS ON BOTH SIDES	2
350	MALLEABLE PROBE DOUBLE ENDED 250MM	2
351	POST MARTEM NEEDLE (PKT. OF 6) S.S.	1
	DRESSING SET CONSISTING OF:	

352	SPENCER WELLS HAEMOSTATIC FORCEPS CD. 150MM	1
353	STANDARD DISSECTING FORCEPS PLAIN 150MM	1
354	LANES TOWEL CLAMP 150MM	1
355	MAYO HEGAR NEEDLE HOLDER 180MM	1
356	DRESSING SCISSOR SH/SH STRAIGHT 125MM	1
357	METZENBAUM SCISSOR CURVED 180MM	1
358	SPONGE HOLDING DRESSING FORCEPS 180MM	1
359	HALSTED MOSQUITO ARTERY FORCEPS ST. 125MM	4
360	HALSTED MOSQUITO ARTERY FORCEPS CD. 125MM	2
361	LARYNGOSCOPE WITH 3 BLADES	1
362	B.P. HANDLE NO.3	1
363	LISTER SINUS DRESSING FORCEPS 160MM	1
364	EXTRA FINE CROCODILE FORCEPS SERRATED JAW 350MM	1
365	STANDARD DISSECTING FORCEPS TOOTHED 150MM	1
366	MAYOS SCISSOR STRAIGHT 135MM	1
367	SPENCER WELLS HAEMOSTATIC FORCEPS ST. 150MM	1
	SUTURING SET & SUTURE REMOVAL SET CONSISTING OF:	
368	METZENBAUM SCISSOR CD. 150MM	1
369	METZENBAUM SCISSOR ST. 200MM	1
370	SPONGE HOLDING FORCEPS 160MM	1
371	HALSTED MOSQUITO ARTERY FORCEPS CD. 125MM	4
372	STANDARD DISSECTING FORCEPS PLAIN 150MM	1
373	STANDARD DISSECTING FORCEPS TOOTHED 150MM	1
374	MAYO HEGAR NEEDLE HOLDER 150MM	1
375	HEATHS SUTURE REMOVAL SCISSOR ONE BLADE SERRATED 180MM	1
	MAJOR BASIC SET -	

376	MAIER SPONGE & DRESSING FORCEPSWITH RATCHET 265MM CD.	2
377	BACKHAUS TOWEL CLAMPS 110mm	6
378	TOWEL CLAMP 115MM	4
379	B.P.HANDLE NO.4	2
380	B.P HANDLE NO.3	1
381	BABY-METZENBAUM SCISSORS T/C TIPCD. 145mm	1
382	METZENBAUM SCISSORS TC TIP CD 180mm	1
383	METZENBAUM SCISSORS TC TIP CD200mm	1
384	NELSON-METZENBAUM SCISSORS CVD,230mm TC TIP	1
385	MAYO-LEXER SCISSOR CURVED165mm,T/C TIP	1
386	DRESSING SCISSORS SH/BL ST. 150mm	1
387	STANDARD DISSECTING FORCEPS PLAIN150mm	1
388	STD DISSECTING FORCEPS TOOTHED150mm	2
389	STANDARD DISSECTING FORCEPS TOOTHED200mm	2
390	DEBAKEY DISSECTING FORCEP TRAUMANILJAWS ST. 2mm 150mm	2
391	DEBAKEY DISSECTING FORCEP TRAUMANILJAWS ST. 2mm 200mm	2
392	GERALD BRAIN FORCEPS 1 X 2 TEETH175MM	1
393	KOCHERS HAEMOSTATIC FORCEPS ST.150mm	6
394	PEANS HAEMOSTATIC FORCEPS ST.150mm	6
395	HALSTEAD FORCEPS CURVED1 X 2 TEETH 125MM	6
396	HALSTED MOSQUITO ARTERY FORCEPS CD.125mm	6
397	KOCHER HYSTERECTOMY FORCEPS STR.200MM	2
398	KOCHER HYSTERECTOMY FORCEPS STR.240MM	2
399	MAIER SPONGE & DRESSING FORCEPSWITH RATCHET 265MM ST.	2
400	MUKULICZ PERITONEUM FORCEPS 205mm	6
401	OVER HOLT LIGATURE FORCEPS 220mm	2
402	OVER HOLD LIGATURE FORCEPS 210MM	2
403	OVER HOLT LIGATURE FORCEPS 230mm	2
404	BABY MIXTER LIGATURE FORCEPS 140mm	2
405	DESCHAMPS-BLUNT LIGATURE RIGHT210mm	1
406	GUIDE PROBE 4.5MM BROAD, 195MM	1
407	CRILE WOOD NEEDLE HOLDERS145mm T.C. TIP	2

408	MAYO HEGAR NEEDLE HOLDER T/C TIP200MM	2
409	DEBAKEY NEEDLE HOLDER STANDARD180MM T.C. TIP	2
410	ROUX RETRACTORS 165mm,19X22mm,23X30mm	1
411	ROUX RETRAVCTOR 165mm,25X26mm,28X38mm	1
412	ROUX RETRACTOR 165mm,28X29mm,33X45mm	1
413	LANGENBECK RETRACTORS 215mm,25X6mm	2
414	LANGENBECK RETRACTORS 215mm,40X11mm	2
415	KOCHER RET.LANGENBECK FORGED RINGHANDLE 215mm 55x11mm "A"	2
416	VOLKMANN RETRACTOR, SEMI-SHARP4 PRONGS	2
417	FLEXIBLE HOOK RETRACTORS SHARP2 PRONGS 160mm	2
418	CUSHING HOLLOW HANDLE RETRACTOR10x10mm 175mm	2
419	BRAUN TISSUE GRASPING FORCEPS 4 X 4 TEETH 6" -	1
420	ALLIS TISSUE GRASPING FORCEPSATRAUMATIC JAW 150mm	1
421	VOLKMAN FIBRE HANDLE CURETTESFIG 0 5.2mm 170mm	1
422	NELATON DIRECTOR, CURVED 160MM	1
423	PROBE, DOUBLE ENDED, 145MM,DIA.:1.5MM	1
424	PROBE, DOUBLE ENDED, 200MM,DIA.:2.0MM	1
425	S.S. BOWL 6"	1
426	S.S. BOWL 3"	1
427	S.S. KIDNEY TRAY 10"	1
		TOTAL 01 SET
	INCISION AND DRAINAGE SET (I & D)	
428	SPONGE HOLDING DRESSING FORCEPS 250MM	4
429	BACKHAUS TOWEL CLAMP 125MM	12
430	B.P. HANDLE NO.3	1
431	MAYOS SCISSOR CURVED 135MM	1
432	STANDARD DISSECTING FORCEPS TOOTHED 150MM	1
433	ALLIS TISSUE GRASPING FORCEPS 150MM	1
434	HALSTED MOSQUITO FORCEPS CURVED 125MM	1
435	PEANS HAEMOSTATIC FORCEPS CURVED 150MM	1

436	PROBE DOUBLE ENDED MALLEABLE 180MM	1
437	BAUMGARTNER NEEDLE HOLDER 145MM T.C. TIP	2
		TOTAL 01 SET
	PROCTO-SIGMOIDOSCOPY SET	
438	SPONGE HOLDING DRESSING FORCEPS 250mm	1
439	KELLY PROCTOSCOPE SMALL	1
440	KELLY PROCTOSCOPE MEDIUM	1
441	KELLY PROCTOSCOPE LARGE	1
442	GRASPING FORCEPS CHEVALIER	1
443	YEOMAN'S RECTAL BIOPSY FORCEPS 355MM	1
444	CROCODILE FORCEPS	1
445	CZERNEY'S RECTAL SPECULUM 20CM	1
446	PARK ANAL RETRACTOR WITH ADDITIONAL BLADES	1

71. Vascular set

EACH SET CONSISTING OF:		
S.No.	DESCRIPTION	QTY
1	MICRO MOSQUITO ARTERY FORCEPS CURVED 15CM	8
2	MICRO ARTERY FORCEPS STRAIGHT 15CM	8
3	SPENCER WELLS HAEMOSTATIC FORCEPS ST. 150mm	8
4	SPENCER WELLS HAEMOSTATIC FORCEPS CD. 150mm	8
5	ADSON ARTERY FORCEPS ST. 180mm	4
6	ADSONS HAEMOSTATIC FORCEPS CD. 180mm	4
7	KELLYS ARTERY FORCEPS CURVED 20CM	8
8	BABY DISS. & L/FORCEPS MIXTER PARTIAL SERRATED JAW 140mm	2
9	MIXTERS LIGATURE FORCEPS 230mm	2
10	LAHEYS LIGATURE FORCEPS 200mm	2
11	LAHEYS LIGATURE FORCEPS 220mm	2
12	CUSHING VEIN RETRACTOR 10 X 10MM, 17.5CM	2
13	KRAYENBHUL NERVE HOOK WITH SMALL BALL 185MM	2
14	SUCTION TIP S.S. 18CM LONG SIZE: 8F & 10F (EACH SIZE 1 NO.)	2
15	STANDARD DISSECTING FORCEPS 200mm, T/C TIP	1
16	DISSECTING FORCEPS, DUNHILL	2
17	POTT-SMITH DRESSING FORCEPS PLAIN 175mm	2

18	ADSON DISSECTING FORCEPS 120mm, T/C TIP -	2
19	STANDARD DISSECTING FORCEPS PLAIN 150mm	2
20	DEBAKEY VASCULAR TISSUE FORCEPS ST. 1.5mm 200mm	2
21	DEBAKEY DISSECTING FORCEP TRAUMANILJAWS ST. 1.5mm 150mm	2
22	DEBAKEY DISSECTING FORCEP TRAUMANILJAWS ST. 1.5mm 230mm	2
23	DEBAKEY DISSECTING FORCEP TRAUMANILJAWS ST. 2mm 150mm	2
24	DEBAKEY DISSECTING FORCEP TRAUMANILJAWS ST. 2mm 200mm	2
25	CUSHING DISSECTING FORCEPS WITH SCRAPER END 180mm, T/C TIP	2
	SCISSORS:	
26	METZENBAUM SCISSORS CURVED TC TIP 145mm "SISCO"	2
27	METZENBAUM SCISSORS TC TIP CD 200mm	2
28	NELSON METZENBAUM SCISSORS TC TIP CD. 260MM	2
29	METZENBAUM SCISSOR CURVED 180MM T.C. TIP	2
30	LIGATURE SCISSORS CVD, 110mm SH X SHT. C. TIP	2
31	MAYO SCISSOR STRAIGHT 170MM T.C. TIP	2
32	METZENBAUM SCISSOR CD. 200MM T.C. TIP	2
33	IRIS SCISSOR CURVED 115MM	1
34	DEBAKEY VASCULAR SCISSORS 220MM T.C. TIP	1
35	POTTS DE-MARTEL VESSEL SCISSOR 45 DEG., 165MM	1
36	DEBAKEY SCISSOR ANGLED ON SIDE 60 DEG., 165MM	1
	NEEDLE HOLDER:	
37	DERF NEEDLE HOLDERS 115MM T.C. TIP	2
38	CRILE WOOD NEEDLE HOLDERS 145mm T.C. TIP	2
39	CRILEWOOD NEEDLE HOLDER 180MM T.C. TIP	2
40	DEBAKEY STANDARD NEEDLE HOLDERS 250mm T.C. TIP	2
41	DEBAKEY STANDARD NEEDLE HOLDERS 305mm T.C. TIP	2
42	WERTHEIM NEEDLE HOLDERS 240MM T.C. TIP	1
43	DEBAKEY TANGENTIAL OCCLUSION CLAMPS 58mm x 270mm	2
44	DEBAKEY T/O CLAMPS SATIN SKY CD. SHANKS 32mm 235mm	2
45	DEBAKEY PEDIATRIC ANASTO. AND MULTI PURPOSE CLAMPS 170mm	2
46	BULLDOG CLAMPS RING HANDLE 45 DEG. ANGLED JAW CD. SHANK	2

47	COOLEY PAED.ANASTOMOSIS AND MULTIPURPOSE CLAMPS 160mm 30DEG.	2
48	DEBAKEY MULTIPURPOSE VASCULAR CLAMPS.S. ANGLED ON FLAT, 30 DEG. ANGLE	2
49	COOLEY PAED.ANASTOMOSIS AND MULTIPURPOSE CLAMPS 160mm 60DEG.	2
50	DEBAKEY MULTIPURPOSE CLAMPS 60 DEG.5.5cm 230mm	2

72. Resuscitation Kit

- a) Should be an automated resuscitator
- b) Volume Control ventilator
- c) MRI Conditional upto 3 tesla with a spatial gradient up to 7.5 Tesla/m (750 Gauss/cm)
- d) Drop Test Compliance - ISO 10651-3:1997, ISO 10651-5:2006, JIS T 7206:1989
- e) Can deliver oxygen therapy, CPAP, demand oxygen and manual ventilation
- f) Approved for use in various environments such as Emergency, Ambulance, Aircraft, Hospital & MRI
- g) Built in safety alarms such as High Pressure, Low Pressure (Disconnect), Low battery, Low supply gas
- h) Integrated battery that has lifetime of greater than 1 year
- i) Integrated PEEP function with a range 0-20cmH₂O
- j) Airworthiness certification
- k) Wide range of tidal volume from 70-1300 ml
- l) Wide range of frequency from 8-40bpm
- m) Oxygen Flow range 0-35L/min
- n) light weight and rugged
- o) luminescent manometer
- p) Display inspiratory and expiratory pressure
- q) Hyperinflation accessory for neonatal ventilation
- r) FDA Approved, CE Marked & ISO Certified & Company Owned Service Centre in India
- s) Standard Compliance:
 - a. Product Safety - EN 60601-1:1990 + A1:1993 + A11:1993 + A12:1993 + A2:1995 + A13:1996
 - b. EMC - ISO 10651-3:1997, BS EN 13718-1:2008 (RTCA/DO-160F), BS EN 60601-1-2:2002, Mil Std 461D: 1993 RE101 Radiated Magnetic Field - 30Hz-100KHz, Mil Std 461D: 1993 RS101 Magnetic Field Immunity - 30Hz-100KHz & FDA Guidance November 1993 Quasi-Static Electric Field 0.5Hz @ 2kV pk (2kV/m)
 - c. Vibration - ISO 10651-3:1997, BS EN 1789:2007, BS EN 13718-1:2008 (RTCA/DO-160F Section 7& 8)
 - d. Temperature & Altitude - RTCA/DO-160F Section 4 & 5

- e. Enclosure Protection - IEC 60529:2001 IP Code: IP54, RTCA/DO-160F Section 10 Waterproofness Cat Y & W
- f. Emergency and Transport Ventilators - ISO 10651-3:1997
- Weight: 2.4kg (5.3lb),
 - Measurements: 240 x165 x 93mm (9.25 x 6.5 x 3.7in),
 - Tidal Volume: 70-1300ml,
 - Frequency: 8-40bpm,
 - I:E ratio: 1:2,
 - FiO2: 50% and 100%,
 - Pressure relief valve and alarm: 20-60cmH2O,
 - Power source Medical: Oxygen 280-600kPa,
 - Patient circuit: 1.5m long,
 - PEEP range: 0-20cmH2O,
 - Oxygen Flow range: 0-35L/min (model 310 only),
 - CPAP: up to max of 10-16cm H2O at 35l/min flow (depending on patient condition)

73. Basic Instrument set with Battery operated drill, Electric tourniquet etc.

TECHNICAL SPECIFICATIONS		
	Description	Qty
	CLOSED NAILING INSTRUMENTATION SETS	
	Interlocking Nail Instrument Set For Tibia And Femur Consisting of :--	
	Guide wire 2.5 mm	1 no.
	Depth Gauge	1 no.
	Extractor Hammer	1 no.
	Interlocking Awl	1 no.
	Combination Wrench 13 mm	1 no.
	Sleeve 11 /8 mm	1 no.
	Drill Sleeve 8/4 mm	1 no.
	Drill Sleeve 8 /3.5 mm	1 no.
	Trocar 8 mm	1 no.
	Screw driver hexagonal 3.5 A/F	1 no.
	Extractor Rod	1 no.
	Extractor Rod Handle	1 no.
	Extra long drill bit dia 3.2 x 270 mm	1 no.
	Extra long drill bit dia 4.2 x 270 mm	1 no.
	Universal Locking Nail Jig	1 no.
	Coupling bolt for Universal Locking Nail Jig	1 no.
	Container for Universal locking Nail instrument set	1 no.
		1 no.
	Implants:	

	Femur Nail	
	Dia 9 mm x 360 mm	1 no.
	Dia 9 mm x 380 mm	1 no.
	Dia 9 mm x 400 mm	1 no.
	Dia 9 mm x 420 mm	1 no.
	Dia 9 mm x 440 mm	1 no.
	Dia 10 mm x 360 mm	1 no.
	Dia 10 mm x 380 mm	1 no.
	Dia 10 mm x 400 mm	1 no.
	Dia 10 mm x 420 mm	1 no.
	Dia 10 mm x 440 mm	1 no.
	Dia 11 mm x 360 mm	1 no.
	Dia 11 mm x 380 mm	1 no.
	Dia 11 mm x 400 mm	1 no.
	Dia 11 mm x 420 mm	1 no.
	Dia 11 mm x 440 mm	1 no.
	Dia 12 mm x 360 mm	1 no.
	Dia 12 mm x 380 mm	1 no.
	Dia 12 mm x 400 mm	1 no.
	Dia 12 mm x 420 mm	1 no.
	Dia 12 mm x 440 mm	1 no.
	Tibia Nail	
	Dia 8 mm x 285 mm	1 no.
	Dia 8 mm x 300 mm	1 no.
	Dia 8 mm x 315 mm	1 no.
	Dia 8 mm x 330 mm	1 no.
	Dia 8 mm x 345 mm	1 no.
	Dia 8 mm x 360 mm	1 no.
	Dia 9 mm x 285 mm	1 no.
	Dia 9 mm x 300 mm	1 no.
	Dia 9 mm x 315 mm	1 no.
	Dia 9 mm x 330 mm	1 no.
	Dia 9 mm x 345 mm	1 no.
	Dia 9 mm x 360 mm	1 no.
	Dia 10 mm x 285 mm	1 no.
	Dia 10 mm x 300 mm	1 no.

	Dia 10 mm x 315 mm	1 no.
	Dia 10 mm x 330 mm	1 no.
	Dia 10 mm x 345 mm	1 no.
	Dia 10 mm x 360 mm	1 no.
	Dia 11 mm x 285 mm	1 no.
	Dia 11 mm x 300 mm	1 no.
	Dia 11 mm x 315 mm	1 no.
	Dia 11 mm x 330 mm	1 no.
	Dia 11 mm x 345 mm	1 no.
	Dia 11 mm x 360 mm	1 no.
	Interlocking Screws	
	Screw 4.9mm SS	
	length 30 mm	5 no.
	length 32 mm	5 no.
	length 34 mm	5 no.
	length 36 mm	5 no.
	length 38 mm	5 no.
	length 40 mm	5 no.
	length 42 mm	5 no.
	length 44 mm	5 no.
	length 46 mm	5 no.
	length 48 mm	5 no.
	length 50 mm	5 no.
	Length 52 mm	5 no.
	Length 54 mm	5 no.
	Length 56 mm	5 no.
	Length 58 mm	5 no.
	Length 60 mm	5 no.
	Length 65 mm	5 no.
	Length 70 mm	5 no.
	Length 75 mm	5 no.
	Length 80 mm	5 no.
	Length 85 mm	5 no.
	Length 90 mm	5 no.
		5 no.
	Screw 3.9mm SS	
	length 30 mm	
	length 32 mm	5 no.
	length 34 mm	5 no.
	length 36 mm	5 no.
	length 38 mm	5 no.

	length 40 mm	5 no.
	length 42 mm	5 no.
	length 44 mm	5 no.
	length 46 mm	5 no.
	length 48 mm	5 no.
	length 50 mm	5 no.
	Length 52 mm	5 no.
	Length 54 mm	5 no.
	Length 56 mm	5 no.
	Length 58 mm	5 no.
	Length 60 mm	5 no.
	Length 62 mm	5 no.
	Length 64 mm	5 no.
	Length 66 mm	5 no.
	Length 68 mm	5 no.
	Length 70 mm	5 no.
		5 no.
	Cap screw for Locking Nail Femur (SS)	
	Cap screw for Locking Nail Tibia (SS)	10 no.
		10 no.
	Screw Container for 4.9 and 3.9 dia screws	
	container for locking femur nail	1 no.
	container for locking Tibia nail	1 no.
	Instrument Set for Supra Condylar Nail	
	Bided Guide wire 2.5 mm	
	Guide Wire.	
	Tissue Protector	1 Nos.
	Medullary tube Polyamide L 430 mm	1 Nos.
	Impactor.	1 Nos.
	Impactor head.	1 Nos.
	Extension sleeve.	1 Nos.
	Extractor rod.	1 Nos.
	Extractor hammer.	1 Nos.
	Extractor rod handle.	1 Nos.

	Nut for coupling bolt.	1 Nos.
	Combination Wrench 13 mm	1 Nos.
	Sleeve (11mm x 8mm.)	1 Nos.
	Trocar 8 mm.	1 Nos.
	Drill sleeve 8mm	1 Nos.
	Extra long drill bit 3.5 mm	1 Nos.
	Depth gauge.	1 Nos.
	Hexagonal screw driver 3.5 mm across flat	1 Nos.
	drill Sleeve 8 x 3 mm	1 Nos.
	3mm extra long drill bit	1 Nos.
	Jig for Supra Condylar Nail	1 Nos.
	Proximal Arm for Jig	1 Nos.
	Coupling bolt for Supra Condylar Nails	1 Nos.
	Sterilization Tray for Supracondylar Instruments Set	1 Nos.
	Sterilization Tray for Supracondylar Nails	1 Nos.
	Implants :	
	Supracondylar Nails	
	11mm / 12mm / 13mm X 150mm to 250mm (Diff of 50mm Length) (2 each)	18 Nos.
	Self Tapping Screw	
	4.5mm X 30 mm to 90 mm (Diff of 5mm) (5 each)	65 Nos.
	Cap screw for Supracondylar	18 Nos.
	Instrument Set for Proximal Femoral Nail	
	Sleeve 18 x 15 mm	1 Nos.
	Sleeve 15 x 2.5 mm	1 Nos.
	Trocar 2.5 mm for 18 x 15 sleve	1 Nos.

	Guide Wire	2 Nos.
	Reamer 15 mm	1 Nos.
	T Quick coupling for 15 mm Reamer	1 Nos.
	PFD Jig	1 Nos.
	Coupling Bolt	1 Nos.
	T Spanner	1 Nos.
	Ram Rod	1 Nos.
	Ram	1 Nos.
	Ram Sleeve	1 Nos.
	Combination Wrench	1 Nos.
	Sleeve 9 x 7 mm	1 Nos.
	Sleeve 7 x 2.5 mm	1 Nos.
	Trocar 2.5 mm for 9/7 mm Sleeve	1 Nos.
	Sleeve 12 x 10 mm	1 Nos.
	Sleeve 10 x 2.5 mm	1 Nos.
	Trocar 2.5 mm	1 Nos.
	Measuring Device	1 Nos.
	Step reamer 6.0 mm	1 Nos.
	Drill 9 mm	1 Nos.
	Cannulated Screw Driver 4 mm across flat	1 Nos.
	Wrench for Hip Bolt	1 Nos.
	Sleeve 10 x 8 mm	1 Nos.
	Sleeve 8 x 4 mm	1 Nos.
	Trocar 4 mm	1 Nos.

	Drill 4 mm	1 Nos.
	Depth Gauge	1 Nos.
	3.5 mm Across flat Solid Screw driver	1 Nos.
	Sterilization Tray for PFN Instruments set	
	Sterilization Tray for Proximal Femoral Nails	
	Implants :	
	Proximal Femoral Nails	
	Dia 9mm / 10mm / 11mm (2 each) Length 250 mm	6 Nos.
	Hip Bolts / Pins	
	9mm X 70mm to 115mm (2 each)	20 Nos.
	6mm X 55mm to 100mm (2 each)	20 Nos.
	Self Tapping Screw	
	4.5mm X 30mm to 65mm (Diff of 5mm) (5 each)	40 Nos.
	Cap Screw for PFN Nails	10 Nos.
	Elastic Nail Instrument set	
	Awl	1 no.
	Detachable Slide Hammer	1 no.
	Locking Pliers	2 no.
	F-Tool	1 no.
	Beveled Tamp	1 no.
	Spanner Wrench	1 no.
	Standard Tamp	1 no.
	Insertor With Universal Chuck	1 no.
	Double Drill sleeve 4.5/3.2	1 no.
	Drill Bit 3.2*125 mm	1 no.
	Drill Bit 4.5*125 mm	1 no.
	Drill bit 2.8*150 mm	1 no.
	Container for Elastic Nail implant & Instrument set	1 no.
	Elastic Nail dia 2* 440 mm	4 no.
	Elastic Nail dia 2.5* 440 mm	4 no.
	Elastic Nail dia 3* 440 mm	4 no.
	Elastic Nail dia 3.5* 440 mm	4 no.
	Elastic Nail dia 4* 440 mm	4 no.

	Instrument Set for Humerus Nail system	
	Humerus Jig	1 no.
	Protection sleeve	1 no.
	Awl for Humerus	1 no.
	Insertion / Extractor bolt Solid	1 no.
	Awl for distal locking	1 no.
	Reamer	1 no.
	SS drill bit 2.5mm x 100mm	1 no.
	SS drill bit 3.2mm x 100mm	1 no.
	SS drill bit 3.5mm x 100mm	1 no.
	SS drill bit 4mm x 100mm	1 no.
	SS drill bit 2.5mm x 200mm	1 no.
	SS drill bit 3.2mm x 200mm	1 no.
	SS drill bit 4mm x 200mm	1 no.
	Distal guide bar	1 no.
	Attachment plate	1 no.
	Attachment bolt	1 no.
	Drill sleeve 2.5mm	1 no.
	Drill sleeve 3.2mm	1 no.
	Drill sleeve 2.5mm for Distal	1 no.
	Drill sleeve 3.2mm for Distal	1 no.
	Pointer sleeve	1 no.
	Hex screw driver 3.5mm	1 no.
	10mm socket wrench	1 no.
	Head for introducer	1 no.
	Depth guage	1 no.
	Extractor Rod	1 no.
	Handle for Extractor	1 no.
	Round Hammer	1 no.
	Tommy Bar	1 no.
	Container	1 no.
	Interlocking Nail for Humerous Dia 6 x 190 mm	1 no.
	Interlocking Nail for Humerous Dia 6 x 200 mm	1 no.
	Interlocking Nail for Humerous Dia 6 x 210 mm	1 no.
	Interlocking Nail for Humerous Dia 6 x 220 mm	1 no.
	Interlocking Nail for Humerous Dia 6 x 230 mm	1 no.
	Interlocking Nail for Humerous Dia 6 x 240 mm	1 no.
	Interlocking Nail for Humerous Dia 6 x 250 mm	1 no.
	Interlocking Nail for Humerous Dia 6 x 260 mm	1 no.
	Interlocking Nail for Humerous Dia 6 x 280 mm	1 no.

	Interlocking Nail for Humerous Dia 6 x 300 mm	1 no.
	Interlocking Nail for Humerous Dia 7 x 200 mm	1 no.
	Interlocking Nail for Humerous Dia 7 x 210 mm	1 no.
	Interlocking Nail for Humerous Dia 7 x 220 mm	1 no.
	Interlocking Nail for Humerous Dia 7 x 230 mm	1 no.
	Interlocking Nail for Humerous Dia 7 x 240 mm	1 no.
	Interlocking Nail for Humerous Dia 7 x 250 mm	1 no.
	Interlocking Nail for Humerous Dia 7 x 260 mm	1 no.
	Interlocking Nail for Humerous Dia 7 x 270 mm	1 no.
	Interlocking Nail for Humerous Dia 7 x 280 mm	1 no.
	Interlocking Nail for Humerous Dia 8 x 210 mm	1 no.
	Interlocking Nail for Humerous Dia 8 x 220 mm	1 no.
	Interlocking Nail for Humerous Dia 8 x 230 mm	1 no.
	Interlocking Nail for Humerous Dia 8 x 240 mm	1 no.
	Interlocking Nail for Humerous Dia 8 x 250 mm	1 no.
	Interlocking Nail for Humerous Dia 8 x 260 mm	1 no.
	Interlocking Nail for Humerous Dia 8 x 270 mm	1 no.
	Interlocking Nail for Humerous Dia 8 x 280 mm	1 no.
	Interlocking Nail for Humerous Dia 8 x 290 mm	1 no.
	Interlocking Nail for Humerous Dia 8 x 300 mm	1 no.
	Interlocking Nail for Humerous Dia 8 x 310 mm	1 no.
	Locking Screw for Humerus Nail 3.4 x 34 mm	1 no.
	Locking Screw for Humerus Nail 3.4 x 38 mm	1 no.
	Locking Screw for Humerus Nail 3.4 x 40 mm	1 no.
	Locking Screw for Humerus Nail 3.4 x 42 mm	1 no.
	Locking Screw for Humerus Nail 3.4 x 44 mm	1 no.
	Locking Screw for Humerus Nail 3.4 x 46 mm	1 no.
	Locking Screw for Humerus Nail 3.4 x 48 mm	1 no.
	Locking Screw for Humerus Nail 3.4 x 50 mm	1 no.
	Locking screw dia 3.3 x 34 mm	4 no.
	Locking screw dia 3.3 x 36 mm	4 no.
	Locking screw dia 3.3 x 38 mm	4 no.
	Locking screw dia 3.3 x 40 mm	4 no.
	Locking screw dia 3.3 x 42 mm	4 no.
	Locking screw dia 3.3 x 44 mm	4 no.
	Locking screw dia 3.3 x 46 mm	4 no.
	Locking screw dia 3.3 x 48 mm	4 no.
	Locking screw dia 3.3 x 50mm	4 no.

	K-Nail Instrument Set	
	K. Awl.	1 no.
	K Nail reamer 6 mm.	1 no.
	K Nail reamer 7 mm.	1 no.
	K Nail reamer 8 mm.	1 no.
	K Nail reamer 9 mm.	1 no.
	K Nail reamer 10 mm.	1 no.
	K Nail reamer 11 mm.	1 no.
	K Nail reamer 12 mm.	1 no.
	K Nail reamer 13 mm.	1 no.
	Guide wire for K.Nail	1 no.
	<u>Nail gauge.</u>	1 no.
	K.Nail Impactor (Pointed)	1 no.
	K.Nail Impactor (Driver)	1 no.
	K Nail extractor	1 no.
	Hook for K Nail extractor.	2 no.
	V Nail bender.	1 no.
	KUNSTSCHER'S CLOVERLEAF NAIL	
	FOR FEMURE	
	8mm dia. with 30cms length.	1 no.
	8mm dia. with 32cms length.	1 no.
	8mm dia. with 34cms length.	1 no.
	8mm dia. with 36cms length.	1 no.
	8mm dia. with 38cms length.	1 no.
	8mm dia. with 40cms length.	1 no.
	8mm dia. with 42cms length.	1 no.
	8mm dia. with 44cms length.	1 no.
	8mm dia. with 46cms length.	1 no.
	8mm dia. with 48cms length.	1 no.
	9mm dia. with 30cms length.	1 no.
	9mm dia. with 32cms length.	1 no.
	9mm dia. with 34cms length.	1 no.
	9mm dia. with 36cms length.	1 no.
	9mm dia. with 38cms length.	1 no.
	9mm dia. with 40cms length.	1 no.
	9mm dia. with 42cms length.	1 no.
	9mm dia. with 44cms length.	1 no.
	9mm dia. with 46cms length.	1 no.
	9mm dia. with 48cms length.	1 no.

	10mm dia. with 30cms length.	1 no.
	10mm dia. with 32cms length.	1 no.
	10mm dia. with 34cms length.	1 no.
	10mm dia. with 36cms length.	1 no.
	10mm dia. with 38cms length.	1 no.
	10mm dia. with 40cms length.	1 no.
	10mm dia. with 42cms length.	1 no.
	10mm dia. with 44cms length.	1 no.
	10mm dia. with 46cms length.	1 no.
	10mm dia. with 48cms length.	1 no.
	11mm dia. with 30cms length.	1 no.
	11mm dia. with 32cms length.	1 no.
	11mm dia. with 34cms length.	1 no.
	11mm dia. with 36cms length.	1 no.
	11mm dia. with 38cms length.	1 no.
	11mm dia. with 40cms length.	1 no.
	11mm dia. with 42cms length.	1 no.
	11mm dia. with 44cms length.	1 no.
	11mm dia. with 46cms length.	1 no.
	11mm dia. with 48cms length.	1 no.
	12mm dia. with 30cms length.	1 no.
	12mm dia. with 32cms length.	1 no.
	12mm dia. with 34cms length.	1 no.
	12mm dia. with 36cms length.	1 no.
	12mm dia. with 38cms length.	1 no.
	12mm dia. with 40cms length.	1 no.
	12mm dia. with 42cms length.	1 no.
	12mm dia. with 44cms length.	1 no.
	12mm dia. with 46cms length.	1 no.
	12mm dia. with 48cms length.	1 no.
	13mm dia. with 30cms length.	1 no.
	13mm dia. with 32cms length.	1 no.
	13mm dia. with 34cms length.	1 no.
	13mm dia. with 36cms length.	1 no.
	13mm dia. with 38cms length.	1 no.
	13mm dia. with 40cms length.	1 no.
	13mm dia. with 42cms length.	1 no.
	13mm dia. with 44cms length.	1 no.
	13mm dia. with 46cms length.	1 no.
	13mm dia. with 48cms length.	1 no.
	HIP FIX SYSTEM KEYLESS (DHS)	

	Guide Pins	10 no.
	Angle Guide for 95 deg.	1 no.
	Direct Measuring Device	1 no.
	T-handle	1 no.
	Reamer 25mm for DCS	1 no.
	Reamer 38mm for Hipfix System	1 no.
	Centering Sleeve for Tap	1 no.
	Tap Without Centering Sleeve	1 no.
	Sleeve for coupling screw	1 no.
	Centering Sleeve for Wrench	1 no.
	Impactor	1 no.
	Coupling screw AO type	1 no.
	Variable angle guide	1 no.
	Wrench AO type	1 no.
	Coupling screw removal AO type	1 no.
	Container:	
	Container for Instruments DHS type	1 no.
	Container for DHS Implants	1 no.
	DHS (Short Barrel.)	
	Size : 130 deg. 3 Holes.	1 no.
	Size : 130 deg. 4 Holes.	1 no.
	Size : 130 deg. 5 Holes.	1 no.
	Size : 130 deg. 6 Holes.	1 no.
	Size : 130 deg. 7 Holes.	1 no.
	Size : 130 deg. 8 Holes.	1 no.
	Size : 130 deg. 9 Holes.	1 no.
	Size : 130 deg. 10 Holes.	1 no.
	Size : 130 deg. 11 Holes.	1 no.
	Size : 130 deg. 12 Holes.	1 no.
	Size : 135 deg. 3 Holes.	1 no.
	Size : 135 deg. 4 Holes.	1 no.
	Size : 135 deg. 5 Holes.	1 no.
	Size : 135 deg. 6 Holes.	1 no.
	Size : 135 deg. 7 Holes.	1 no.
	Size : 135 deg. 8 Holes.	1 no.
	Size : 135 deg. 9 Holes.	1 no.
	Size : 135 deg. 10 Holes.	1 no.

	Size : 135 deg. 11 Holes.	1 no.
	Size : 135 deg. 12 Holes.	1 no.
	DHS (long Barrel)	
		1 no.
	Size : 130 deg. 3 Holes.	1 no.
	Size : 130 deg. 4 Holes.	1 no.
	Size : 130 deg. 5 Holes.	1 no.
	Size : 130 deg. 6 Holes.	1 no.
	Size : 130 deg. 7 Holes.	1 no.
	Size : 130 deg. 8 Holes.	1 no.
	Size : 130 deg. 9 Holes.	1 no.
	Size : 130 deg. 10 Holes.	1 no.
	Size : 130 deg. 11 Holes.	1 no.
	Size : 130 deg. 12 Holes.	1 no.
	Size : 135 deg. 3 Holes.	1 no.
	Size : 135 deg. 4 Holes.	1 no.
	Size : 135 deg. 5 Holes.	1 no.
	Size : 135 deg. 6 Holes.	1 no.
	Size : 135 deg. 7 Holes.	1 no.
	Size : 135 deg. 8 Holes.	1 no.
	Size : 135 deg. 9 Holes.	1 no.
	Size : 135 deg. 10 Holes.	1 no.
	Size : 135 deg. 11 Holes.	1 no.
	Size : 135 deg. 12 Holes.	1 no.
	DHS Screws	
	Size : 40mm.	2 no.
	Size : 45mm.	2 no.
	Size : 50mm.	2 no.
	Size : 55mm.	2 no.
	Size : 60mm.	2 no.
	Size : 65mm.	2 no.
	Size : 70mm.	2 no.
	Size : 75mm.	2 no.
	Size : 80mm.	2 no.
	Size : 85mm.	2 no.
	Size : 90mm.	2 no.
	Size : 95mm.	2 no.
	Size : 100mm.	2 no.
	Size : 105mm.	2 no.

	Size : 110mm.	2 no.
	Dynamic Condylar Screw Plate 95* DCS	
	With Self Compression Holes	
	Size : 5 holes.	1 no.
	Size : 6 holes.	1 no.
	Size : 7 holes.	1 no.
	Size : 8 holes.	1 no.
	Size : 9 holes.	1 no.
	Size : 10 holes.	1 no.
	Size : 12 holes.	1 no.
	Size : 13 holes.	1 no.
	Size : 14 holes	1 no.
	Size : 15 holes	1 no.
	Size : 16 holes.	1 no.
	AUSTIN MOORE SET	
	INSTRUMENTS	
	Head extractor	1 no.
	Set of gauges	1 no.
	Murphy skid	1 no.
	Rasp with tommy Bar	1 no.
	Head Impactor-Al Judet type	1 no.
	Head impactor-Nylon Face	1 no.
	IMPLANTS	
	AUSTIN MOORE PROSTHESIS (STERILE)	
	Size 37, 39 mm	2 each
	Size 41, 43 mm	2 each
	Size 45, 47 mm	2 each
	Size 49, 51 mm	2 each
	Size 53 mm	2 each
	BIPOLAR SET	
	INSTRUMENTS	
	Head extractor	1 no.
	Head gauge	1 no.
	Murphy skid	1 no.
	Rasp with tommy Bar	1 no.

	Head Impactor-Al Judet type	1 no.
	Head impactor-Nylon Face	1 no.
	IMPLANTS	
	Bipolar dia 39 mm Ball -Fenestrated	1 No.
	Bipolar dia 40 mm Ball -Fenestrated	1 No.
	Bipolar dia 41 mm Ball -Fenestrated	1 No.
	Bipolar dia 42 mm Ball -Fenestrated	1 No.
	Bipolar dia 43 mm Ball -Fenestrated	1 No.
	Bipolar dia 44 mm Ball -Fenestrated	1 No.
	Bipolar dia 45 mm Ball -Fenestrated	1 No.
	Bipolar dia 46 mm Ball -Fenestrated	1 No.
	Bipolar dia 47 mm Ball -Fenestrated	1 No.
	Bipolar dia 48 mm Ball -Fenestrated	1 No.
	Bipolar dia 49 mm Ball -Fenestrated	1 No.
	Bipolar dia 50 mm Ball -Fenestrated	1 No.
	Bipolar dia 51 mm Ball -Fenestrated	1 No.
	Bipolar dia 52 mm Ball -Fenestrated	1 No.
	Bipolar dia 53 mm Ball -Fenestrated	1 No.
	Bipolar dia 39 mm Ball -Non Fenestrated	1 No.
	Bipolar dia 40 mm Ball -Non Fenestrated	1 No.
	Bipolar dia 41 mm Ball -Non Fenestrated	1 No.
	Bipolar dia 42 mm Ball -Non Fenestrated	1 No.
	Bipolar dia 43 mm Ball -Non Fenestrated	1 No.
	Bipolar dia 44 mm Ball -Non Fenestrated	1 No.
	Bipolar dia 45 mm Ball -Non Fenestrated	1 No.

	Bipolar dia 46 mm Ball -Non Fenestrated	1 No.
	Bipolar dia 47 mm Ball -Non Fenestrated	1 No.
	Bipolar dia 48 mm Ball -Non Fenestrated	1 No.
	Bipolar dia 49 mm Ball -Non Fenestrated	1 No.
	Bipolar dia 50 mm Ball -Non Fenestrated	1 No.
	Bipolar dia 51 mm Ball -Non Fenestrated	1 No.
	Bipolar dia 52 mm Ball -Non Fenestrated	1 No.
	Bipolar dia 53 mm Ball -Non Fenestrated	1 No.
	Instrument Set For Large Bone Locking Plate	
	Combination wrench A/F 10 mm	1 no.
	Drill bit 4.2mmx200mm	1 no.
	Locking sleeve-	6 no.
	Supporting Sleeve –	3 no.
	Torque Wrench for locking screw dia 5 mm	1 no.
	Tension device muller type	1 no.
	Depth Gauge	1 no.
	Screw driver A/F 3.5 mm	1 no.
	K- wire 200 MM X 2 MM	3 no.
	Container for Locking Head screws and instruments	1 no.
	Titanium Locking plate for distal femur right 5holes	1 no
	Titanium Locking plate for distal femur right 7holes	1 no
	Titanium Locking plate for distal femur right 9holes	1 no
	Titanium Locking plate for distal femur right 11holes	1 no
	Titanium Locking plate for distal femur right 13holes	1 no
	Titanium Locking plate for distal femur left 5holes	1 no
	Titanium Locking plate for distal femur left 7holes	1 no
	Titanium Locking plate for distal femur left 9holes	1 no
	Titanium Locking plate for distal femur left 11holes	1 no
	Titanium Locking plate for distal femur left 13holes	1 no
	Titanium Lock plate for proximal tibia right 5 hole	1 no
	Titanium Lock plate for proximal tibia right 7 hole	1 no
	Titanium Lock plate for proximal tibia right 9 hole	1 no
	Titanium Lock plate for proximal tibia right 11hole	1 no

	Titanium Lock plate for proximal tibia right 13hole	1 no
	Titanium Lock plate for proximal tibia Left 5 hole	1 no
	Titanium Lock plate for proximal tibia Left 7 hole	1 no
	Titanium Lock plate for proximal tibia Left 9 hole	1 no
	Titanium Lock plate for proximal tibia Left 11hole	1 no
	Titanium Lock plate for proximal tibia Left 13hole	1 no
	Titanium Locking compression plate Narrow 4 hole	1 no
	Titanium Locking compression plate Narrow 5 hole	1 no
	Titanium Locking compression plate Narrow 6 hole	1 no
	Titanium Locking compression plate Narrow 7 hole	1 no
	Titanium Locking compression plate Narrow 8 hole	1 no
	Titanium Locking compression plate Narrow 9 hole	1 no
	Titanium Locking compression plate Narrow 10 hole	1 no
	Titanium Locking compression plate Narrow 11 hole	1 no
	Titanium Locking compression plate Narrow 12 hole	1 no
	Titanium Locking compression plate Narrow 14 hole	1 no
	Titanium Locking Compression plate Broad - 6 hole	1 no
	Titanium Locking compression plate Broad - 7 hole	1 no
	Titanium Locking compression plate Broad - 8 hole	1 no
	Titanium Locking Compression plate Broad - 9 hole	1 no
	Titanium Locking compression plate Broad - 10 hole	1 no
	Titanium Locking compression plate Broad - 12 hole	1 no
	Container for Locking plates	1 no.
	Titanium Locking head screw 5 mm x14mm	5 no
	Titanium Locking head screw 5 mm x16mm	5 no
	Titanium Locking head screw 5 mm x18mm	5 no
	Titanium Locking head screw 5 mm x20mm	5 no
	Titanium Locking head screw 5 mm x22mm	5 no
	Titanium Locking head screw 5 mm x24mm	5 no
	Titanium Locking head screw 5 mm x26mm	5 no
	Titanium Locking head screw 5 mm x28mm	5 no
	Titanium Locking head screw 5 mm x30mm	5 no
	Titanium Locking head screw 5 mm x32mm	5 no
	Titanium Locking head screw 5 mm x34mm	5 no
	Titanium Locking head screw 5 mm x36mm	5 no
	Titanium Locking head screw 5 mm x38mm	5 no
	Titanium Locking head screw 5 mm x40mm	5 no
	Titanium Locking head screw 5 mm x42mm	5 no

	Titanium Lockinghead screw 5 mm x44mm	5 no
	Titanium Lockinghead screw 5 mm x46mm	5 no
	Titanium Lockinghead screw 5 mm x 48mm	5 no
	Titanium Lockinghead screw 5 mm x 50mm	5 no
	Titanium Lockinghead screw 5 mm x 52mm	5 no
	Titanium Lockinghead screw 5 mm x 54mm	5 no
	Titanium Lockinghead screw 5 mm x 56mm	5 no
	Titanium Lockinghead screw 5 mm x 58mm	5 no
	Titanium Lockinghead screw 5 mm x 60mm	5 no
	Titanium Lockinghead screw 5 mm x 65mm	5 no
	Titanium Lockinghead screw 5 mm x 70mm	5 no
	Titanium Lockinghead screw 5 mm x 75mm	5 no
	Titanium Lockinghead screw 5 mm x 80mm	5 no
	Titanium Lockinghead screw 5 mm x 85mm	5 no
	Titanium Lockinghead screw 5 mm x 90mm	5 no
	Titanium Lockinghead screw 5 mm x 95mm	5 no
	Titanium Lockinghead screw 5 mm x 100mm	5 no
	Titanium Lockinghead screw 5 mm x 105mm	5 no
	Titanium Lockinghead screw 5 mm x 110mm	5 no
	Instrument Set For Locking Plates Small Bones	
	Combination wrench A/F 10 mm	1 no.
	Screw driver A/F 2.5 x 200 mm length	1 no.
	Depth gauge for 2.7 to 4 mm screw	1 no.
	Drill bit 2.8 x 150 mm	1 no.
	Locking sleeve for small bone plates-	6 no.
	Torque Wrench for locking screw dia 3.5 mm	1 no.
	Tension device muller type	1 no.
	K wire 1.6 x 150 mm	3 no.
	Container for small bone plates instruments and screws	1 no.
	Container for Small Bone locking plate implants and Instruments	1 no.
	Titanium Locking T plate 3 hole(3 head Hole)	1 no.
	Titanium Locking T plate 4 hole(4 head Hole)	1 no.
	Titanium Locking T plate 5 hole(3 head Hole)	1 no.
	Titanium Locking T plate 6 hole(4 head Hole)	1 no.
	Titanium Locking proximal humerus plate 3 holes	1 no.
	Titanium Locking proximal humerus plate 5 hole	1 no.
	Titanium Locking proximal humerus plate 7 hole	1 no.
	Titanium Locking proximal humerus plate 9 hole	1 no.

	Titanium Locking Reconstruction plate 3.5 mm 3 hole	1 no.
	Titanium Locking Reconstruction plate 3.5mm 4 holes	1 no.
	Titanium Locking Reconstruction plate 3.5mm 5 holes	1 no.
	Titanium Locking Reconstruction plate 3.5mm 6 holes	1 no.
	Titanium Locking reconstruction plate 3.5mm 7 holes	1 no.
	Titanium Locking reconstruction plate 3.5mm 8 holes	1 no.
	Titanium Locking Reconstruction plate 3.5mm 9 holes	1 no.
	Titanium Locking Reconstruction plate 3.5mm 10 holes	1 no.
	Titanium Locking Reconstruction plate 3.5mm 11 holes	1 no.
	Titanium Locking Reconstruction plate 3.5mm 12 hole	1 no.
	Titanium Locking compression hole plate small 3 hole	1 no.
	Titanium Locking compression hole plate small 4 hole	1 no.
	Titanium Locking compression hole plate small 5 hole	1 no.
	Titanium Locking compression hole plate small 6 hole	1 no.
	Titanium Locking compression hole plate small 7 hole	1 no.
	Titanium Locking compression hole plate small 8 hole	1 no.
	Titanium Locking compression hole plate small 9 hole	1 no.
	Titanium Locking compression hole plate small 10 hole	1 no.
	Titanium Locking compression hole plate small 12 hole	1 no.
	Titanium Locking compression hole plate small 14 hole	1 no.
	Titanium Distal Tibia Locking plate Right 4 hole	1 no.
	Titanium Distal Tibia Locking plate Right 6 hole	1 no.
	Titanium Distal Tibia Locking plate Right 8 hole	1 no.
	Titanium Distal Tibia Locking plate Right 10 hole	1 no.
	Titanium Distal Tibia Locking plate Left 4 hole	1 no.
	Titanium Distal Tibia Locking plate Left 6 hole	1 no.
	Titanium Distal Tibia Locking plate Left 8 hole	1 no.
	Titanium Distal Tibia Locking plate Left 10 hole	1 no.
	Titanium LockingHead Screw 3.5 x 10 mm	5 no.
	Titanium LockingHead Screw 3.5 x 12 mm	5 no.
	Titanium LockingHead Screw 3.5 x 14 mm	5 no.
	Titanium LockingHead Screw 3.5 x 16 mm	5 no.
	Titanium LockingHead Screw 3.5 x 18 mm	5 no.
	Titanium LockingHead Screw 3.5 x 20 mm	5 no.
	Titanium LockingHead Screw 3.5 x 22 mm	5 no.
		5 no.
	Titanium LockingHead Screw 3.5 x 26 mm	5 no.
	Titanium LockingHead Screw 3.5 x 28 mm	5 no.
	Titanium LockingHead Screw 3.5 x 30 mm	5 no.

	Titanium LockingHead Screw 3.5 x 35 mm	5 no.
	Titanium LockingHead Screw 3.5 x 40 mm	5 no.
	Titanium LockingHead Screw 3.5 x 45 mm	5 no.
	Titanium LockingHead Screw 3.5 x 50 mm	5 no.
	Titanium LockingHead Screw 3.5 x 55 mm	5 no.
	Titanium LockingHead Screw 3.5 x 60 mm	5 no.
	Titanium LockingHead Screw 3.5 x 65 mm	5 no.
	Titanium LockingHead Screw 3.5 x 70 mm	5 no.
	Titanium LockingHead Screw 3.5 x 75 mm	5 no.
	Titanium LockingHead Screw 3.5 x 80 mm	5 no.
	Instrument Set For 7mm Cannulated Cancellous Screws	
	Tap Cannulated for 7 mm Cannulated screws	1 no.
	Drill bit 4.5/2.1mm dia,cannulated	1 no.
	Screw driver hexagonal cannulated for 7 mm	1 no.
	Guide wire with threaded tip 2.00mm-	3 no.
	Double drill sleeve4.5/3.2	1 no.
	Parallel drill guide 4.5 mm	1 no.
	Drill sleeve 4.5/2.0	1 no.
	Drill sleeve 8.0/4.5	1 no.
	Protecion sleeve 11.0/8.0	1 no.
	Trocar	1 no.
	Measuring device	1 no.
	Parallel wire guide for guide wire 2 mm dia	3 no.
	Container for 7 mm cannulated Instrument set	1 no.
	Implants:--	
	7mm Cannulated Cancellous Screws ,16mm Thread Length.	
	Length : 35 mm.	3 no.
	Length : 40 mm.	3 no.
	Length : 45 mm.	3 no.
	Length : 50 mm.	3 no.
	Length : 55 mm.	3 no.
	Length : 60 mm.	3 no.
	Length : 65 mm.	3 no.
	Length : 70 mm.	3 no.
	Length : 75 mm.	3 no.
	Length : 80 mm.	3 no.
	Length : 85 mm.	3 no.
	Length : 90 mm.	3 no.
	Length : 95 mm.	3 no.
	Length : 100 mm.	3 no.

	Length : 105 mm.	3 no.
	7mm Cannulated Cancellous Screws ,32mm Thread Length.	
	Length : 40 mm.	3 no.
	Length : 45 mm.	3 no.
	Length : 50 mm.	3 no.
	Length : 55 mm.	3 no.
	Length : 60 mm.	3 no.
	Length : 65 mm.	3 no.
	Length : 70 mm.	3 no.
	Length : 75 mm.	3 no.
	Length : 80 mm.	3 no.
	Length : 85 mm.	3 no.
	Length : 90 mm.	3 no.
	Length : 95 mm.	3 no.
	Length : 100 mm.	3 no.
	Length : 105 mm.	3 no.
	7mm.Cannulated Cancellous Screws,Fully Threaded Length	
	Length : 35 mm.	3 no.
	Length : 40 mm.	3 no.
	Length : 45 mm.	3 no.
	Length : 50 mm.	3 no.
	Length : 55 mm.	3 no.
	Length : 60 mm.	3 no.
	Length : 65 mm.	3 no.
	Length : 70 mm.	3 no.
	Length : 75 mm.	3 no.
	Length : 80 mm.	3 no.
	Length : 85 mm.	3 no.
	Length : 90 mm.	3 no.
	Length : 95 mm.	3 no.
	Length : 100 mm.	3 no.
	Length : 105 mm.	3 no.
	Washer for 7mm cannulated Cancellous Screw.	10 no.
	Instrument Set For 4mm Cannulated Cancellous Screws	
	Cannulated Tap 4 mm	1 no.
	2.5 A/F canulated screw driver	1 no.
	Guide wires 1.25 mm.-	3 no.

	Drill Bit 2.7 /1.35 mm Cannulated	1 no.
	Countersink shaft Cannulated	1 no.
	Double drill sleeve 2.7/1.25	1 no.
	Measuring device	1 no.
	Container for 4 mm Cannulated Instrument Set	1 no.
	Implants	
	Cannulated Cancellous Screws 4mm.	
	Length : 20 mm	3 no.
	Length : 22 mm	3 no.
	Length : 24 mm	3 no.
	Length : 26 mm	3 no.
	Length : 28 mm	3 no.
	Length : 30 mm	3 no.
	Length : 32 mm	3 no.
	Length : 34 mm	3 no.
	Length : 36 mm	3 no.
	Length : 38 mm	3 no.
	Length : 40 mm	3 no.
	Length : 42 mm	3 no.
	Length : 44 mm	3 no.
	Length : 46 mm	3 no.
	Length : 48 mm	3 no.
	Length : 50 mm	3 no.
	Length : 55 mm	3 no.
	Length : 60 mm	3 no.
	Length : 65 mm	3 no.
	Length : 70 mm	3 no.
	Wire Instrument Set	
	Drill guide & drill Sleeve 2.0 mm	2 no.
	Reduction forceps with point 130 mm	2 no.
	Reduction forceps with point 180 mm	2 no.
	Wire bending plier	2 no.
	Heath mallet 250 gm	1 no.
	AO type wire tightener	1 no.
	Wire passer	1 no.
	Wire cutter / plier 6"	1 no.
	Wire cutter / plier 8"	1 no.
	container for Wire instrument set	1 no.
	General Instruments For Spine	
	Bone Cutter Horsley	1 no.
	Bone Cutter Tuderd -Edward	1 no.

	Rounger Right Angle	1 no.
	Sargent Rounger Straight	1 no.
	Sargent Rounger Curved	1 no.
	Bone Cutter Liston Double Action : Straight	1 no.
	Bone Cutter Liston Double Action : Curved	1 no.
	Bone Nibbler Double Action - Straight	1 no.
	Bone Nibbler Double Action - Curved	1 no.
	Rounger Kiliner	1 no.
	Olecrona Rounger	1 no.
	Lacksell Rounger	1 no.
	Bone Nibbler Single Action – Straight	1 no.
	Bone Nibbler Single Action - Curved	1 no.
	Bone Cutter Liston Single Action : Straight	1 no.
	Bone Cutter Liston Single action : Curved	1 no.
	Kerrison Punch Upward	1 no.
	Kerrison Punch Downward	1 no.
	Kerrison Punch Angled Upward	1 no.
	Kerrison Punch Angled Downward	1 no.
	Rib Rasperactory : Left	1 no.
	Rib Rasperactory : Right	1 no.
	Hijack Punch Upward	1 no.
	Hijack Punch Downward	1 no.
	Hijack Punch Angled	1 no.
	Self Retaining Retractor with follow up blades 250 mm	1 no.
	Mastroid Retractor 150 mm	1 no.
	Mastroid Retractor 200 mm	1 no.
	Mastroid Retractor 250 mm	1 no.
	Self Retaining Retractor with follow up blades 300 mm	1 no.
	Disc Punch Upward	1 no.
	Disc Punch Downward	1 no.
	Disc Punch Straight	1 no.
	Instrument Set For Pelvic Reconstruction	
	Oblique Pelvic Reduction Forceps-2 Pointed Ball Tips – 190mm	1 no.
	Pelvic Reduction Forceps-2 Pointed Ball Tips – 200mm	1 no.
	Straight Pelvic Reduction Forceps-2 Pointed Ball Tips – 250mm	1 no.
	Bending Plier for 3.5mm Reconstruction Plates	2 no.
	Reduction Forcep with point length 212mm	2 no.
	Pelvic Reduction Forceps with Ratchet -250mm Small	2 no.
	Bending Plier for 4.5mm Reconstruction Plates	2 no.
	Bone Hook Large	1 no.
	Bone Hook Small	1 no.

	Reduction Forceps for Screw Small	2 no.
	Spiked Disc	1 no.
	Self locking screw driver 3.5mm screw	1 no.
	Self locking screw driver 4.5mm screw	1 no.
	Bending template straight	2 no.
	Bending template Curved	2 no.
	Retractor small	1 no.
	Retractor large	1 no.
	Ball Spike	1 no.
	Howmans retractor	2 no.
	Drill bit 2.7mm x 200 mm	1no.
	Drill bit 3.5mm x 200 mm	1 no.
	K-wire 2mm- 3 nos	3 no.
	Container for pelvic instruments	1 no.
	Instrument Set For Orthopaedics General	
	Reduction forcep with point 130 mm	2 no.
	Retractor short narrow tip small width 8 mm	2 no.
	Retractor short narrow tip width 18 mm	2 no.
	Retractor long narrow tip (for hip surgery) width 8 mm	2 no.
	Retractor long wide tip (for hip surgery) width 8 mm	2 no.
	Periosteal Elevator Farabeuf type curved	1 no.
	Periosteal Elevator Farabeuf type straight	1 no.
	Health Mallet 500 gms	1 no.
	Kochar's Bone hook small	1 no.
	Kochar's Bone hook Medium	1 no.
	Chisel With Detachable Handle Straight 10 mm	1 no.
	Chisel With Detachable Handle Straight 15 mm	1 no.
	Chisel With Detachable Handle Straight 20 mm	1 no.
	Chisel With Detachable Handle Straight 25 mm	1 no.
	Gouge with fiber handle 10 mm	1 no.
	Container forGeneral instrument set	1 no.
	Technical Detail For Instruments	
	1. The manufacturing Company should be ISO-9001-2000 certified.	
	2. Products have to CE marked, the corresponding CE certificate should be attached.	
	Technical Detail For Implants	
	1. The raw material use for all these implants is SS 316 L confirming to ISO - 5832 - I or	
	ASTM - F138 - 97 in terms of chemical composition, microstructure & cleanliness of the material.	
	2. The manufacturing Company should be ISO-9001-2000 certified.	
	3. Products have to CE marked, the corresponding CE certificate should be attached.	

4. Product Should be FDA Approved.	
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Dual Cuff Tourniquet Specifications:

Dual cuffs: Dual port, colour coded

Dual displays with integrated time recording

Should use ambient air

Microprocessor controlled

Self-check calibration

Audible and Visual Alarms in case of power failure

Internal Pump for Fast Inflation Time

Positive locking connectors

Should alert the user of the cuff status when attempt is made to deflate the machine

Cuff Lockout Safety Feature

Cuff Pressure: Adjustable 100 to 450 mmHg

Preset Resolution: 10 mmHg

Clock Elapsed time: 0.000 – 3.000 hours

Display :

a. 3 digit- Pre- selected pressure

b. 3 digit Clock Elapsed time

c. **Green led for inflate & Red led for Deflate**

Alarms :

1. Cuff pressure is out of range for more than 30 sec. after initial start

2. Cuff pressure is out of range for more than 11 sec. during operation

3. After elapsed time of 30 min & every 30 min. thereafter

4. 3 beeps – 9 min, prior to set time

5. In Deflate mode – cuff pressure is higher than 20 mmHg for 15 sec after deflate mode is activated

Dual compressors to allow for independent control over cuffs “one” and cuff “two”

Dedicated pressure line and pressure measurement line for cuff “one” and cuff “two” which

should be designed to provide most accurate readings.

Utilization of two independent cuffs during one surgical procedure to allow bilateral knee

procedures

Battery backup of 2 hrs, so that it can be used during patient transport and to be used during

a power failure. No interruption in the procedure while the cuff is inflated – Automatically

transfers power to the battery

Mounted on stand with castor wheels

Seven Sizes of cuffs from 8” to 42” of cylindrical cuffs should meet individual requirements of

thin and fat patient for arm and thigh cuffs

Cuffs should be autoclavable

Instrument should be CE certified

Single Cuff Tourniquet Specifications:

Single Cuff: Single port

Control: Micro Computerized cuff pressure control

Should use ambient air

Microprocessor Controlled

Inflation Air Source: Internal air compressor

Self-check calibration

Internal Pump for Fast Inflation Time

Positive locking connectors

Should alert the user of the cuff status when attempt is made to deflate the machine

Cuff Lockout Safety Feature

Cuff Pressure: Adjustable 100 to 450 mmHg

Preset Resolution: 10 mmHg

Clock Elapsed time: 0.000 – 3.000 hours

Display : a. 3 digit- Pre- selected pressure

b. 3 digit Clock Elapsed time

c. Large Alphanumeric LCD Display

Alarms : 1. Cuff pressure is out of range for more than 30 sec. after initial start

2. Cuff pressure is out of range for more than 11 sec. during operation

3. After elapsed time of 30 min & every 30 min. thereafter

4. In Deflate mode – cuff pressure does not show 20 min Hg or less after 15 sec

5. 3 beeps – 9 min, prior to set time & at set time

6. General control system failure

Cuffs should be Autoclavable

a) Single Cuff for Child 5x30 (WxL)

b) Single Cuff for Standard Arm 7x35 (WxL)

c) Single Cuff for Standard Leg 10x61 (WxL)

d) Single Cuff for Long Arm 7x46 (WxL)

e) Single Cuff for Long Leg 10x76 (WxL)

Instrument should be CE certified

Specifications For Battery Operated Drill, Reamer & Saw System.

1. Power Drive have Modular Hand – Piece that can connect to various attachments

2. Power Drive is a robust system to sustain all the orthopedic procedures

3. All attachment fit to modular Hand-piece by means of quick change mechanism

4. Modular Hand - Piece & Attachments must sustain autoclave

5. Power Drive, a single hand- piece for DRILLING / REAMING

6. Modular Hand – Piece should be incorporate BLDC motor to deliver desired torque & reduce wear & tear

7. Modular Hand-Piece to incorporate the latest dual – rotor- mechanism for effective torque for all procedures
8. Modular Hand -Piece should have Forward / Reverse & SAFE mode
9. The following attachments of specifications mentioned should work as standard rotary attachments-
 - Cannulated Drill Device (with cannulated of 4.1mm & diameter to accommodate between 0.8 to 6.35 mm designed to work at a speed of 0-700 rpm with facility of instant reverse)
 - Reaming Device (with cannulated of 4.1mm, accommodates reamers designed to work at a speed of 0-250 rpm with facility of instant reverse)
 - Quick coupling drilling attachment with a speed of 0-700rpm with instant reverse
10. System should have a Fixed Saw Device - to operate at a speed 0 -14500 cpm , excursion 3.5 °
11. The Battery operated Saw Hand - Piece should work on BLDC Motor for maximum torque
12. The Saw Hand - Piece should be autoclavable
13. It should have safe mode for changing of saw blades
14. Batteries should be Lithium ion for maximum charge
15. Dual port battery charger indicating the battery status
16. For Battery Operated system : Supply through rechargeable batteries, should have option to accept both aseptic & sterilizable batteries and accommodate two batteries for charging simultaneously
17. Instrument should have International Standard Safety requirement - CE mark
18. Company should be ISO Certified
19. Wire Driver attachment from 0 to 2.0 mm
20. Hadson Adoptor
21. It should have a radiolucent drive attachment.
22. Saw blades – 5 nos all sizes each
23. Reciprocating Hand piece - 0 – 10000 CPM. Stroke length 3.7 mm (minimum)

74. Small fragement & Large fragement

Each Set should be Consist of

Descirption	Qty
1 . Small Fragment Dynamic Plating Instrumentation- 2 sets	
Drill Bits S.S.	
Drill Bit - S.S. - Quick Coupling End Dia. 2.0mm X 100mm Long	3
Drill Bit - S.S. - Quick Coupling End Dia. 2.5mm X 115mm Long	3
Drill Bit - S.S. - Quick Coupling End Dia. 3.5mm X 130mm Long	3
Counter Sink With T - Handle - 6.0mm Head (For 2.7, 3.5 & 4.0 Screws)	3
Quick Coupling Handle T-Type	1

Bone Tap With T - Handle Dia. 3.5mm Thread Length 50mm, Total Length 125mm	1
Bone Tap With T - Handle Dia. 3.5mm - Cancellous, Thread Length 50mm, Total Length 125mm	1
Bone Tap With T - Handle Dia. 3.5mm - Cancellous, Thread Length 50mm, Total Length 125mm	1
Drill & Tap Sleeve Combined - 2.5/3.5mm	1
Drill & Tap Sleeve Combined - 2.5/3.5mm	1
Insert Drill Sleeve 2.5mm	1
Insert Drill Sleeve 2.5mm	1
Hexagonal Screw Driver With Self Holding Sleeve 2.5mm Tip	1
Screw Driver Shaft, Q.C. End 2.5mm Tip	1
Small Depth Gauge	1
Sharp Hook	1
Spanner - 11mm	1
Small Neutral & Loaded Drill Guide	1
Universal Guide 3.5mm For Minimal Contact D.C Plate	1
Templates	
87mm	1
114mm	1
Instrument Box With Two Trays Length 300mm	1
2. Basic Dynamic Compression Plating Instrumentation- 2 set	
Drill Bit - S.S. - Quick Coupling End Dia. 3.2mm X 130mm Long	3
Drill Bit - S.S. - Quick Coupling End Dia. 4.5mm X 130mm Long	2
Counter Sink With T - Handle - 8.0mm Head (For 4.5, & 6.5mm Screws)	1
Quick Coupling Handle T-Type	1
Drill Taps	
Bone Tap With T - Handle Dia. 4.5mm Thread Length 70mm, Total Length 125mm	1
Bone Tap With T - Handle Dia. 6.5mm - Cancellous, Thread Length 32mm, Total Length 200mm	1
Drill Sleeves	
Drill & Tap Sleeve Combined - 3.2/4.5mm	1
Drill & Tap Sleeve Combined - 3.2/6.5mm	1
Insert Drill Sleeve 3.2mm	1
Hexagonal Screw Driver With Self Holding Sleeve 3.5mm Tip	1
Screw Driver Shaft, Q.C. End 3.5mm Tip	1
Large Depth Gauge	1

Sharp Hook	1
Drill Guides	
Large Neutral & Loaded Drill Guide	1
Universal Guide 4.5 For Minimal Contact D.C Plate	1
Drill Guide 4.5for Minimal Contact D.Cplate	1
Templets	
120mm	1
155mm	1
210mm	1
Alluminium Storage & Sterlization Case	
Instrument Box With Two Trays Length 300mm	1
3. Dynamic Compression System Instrument- 2 set	
Drill Bit - H.S.S. - Plain Shank, Dia. 2.5mm X 115mm Long	2
Drill Bit - H.S.S. - Plain Shank, Dia. 3.2mm X 130mm Long	3
Drill Bit - H.S.S. - Plain Shank, Dia. 4.5mm X 130mm Long	2
Eccentric Drill Guide	
Small Neutral & Loaded Drill Guide	1
Large Neutral & Loaded Drill Guide	1
Drill Taps (Imported Steel)	
Bone Taps - Q.C. End A.O. Type Cancellous 3.5mm X 110mm Length	1
Bone Taps - Q.C. End A.O. Type Cortical 3.5mm X 110mm Length (Made In Germany)	1
Bone Taps - Q.C. End A.O. Type Cortical 4.5mm X 130mm Length (Made In Germany)	1
Bone Tap - Quick Coupling End Dia. 6.5mm, - Cacellous, Thread Length 32mm, Total Length 195mm	1
Screw Holding Forceps	1
Depth Gauge With Milimeter Marking	
Small Depth Gauge	1
Large Depth Gauge	1
Scale With Dril Gauge 6" Steel	1
Hexagonalscrew Driver(Imported Steel)	
Screw Driver - 2.5mm Tip - A.O. Type	1
Screw Driver - 3.5mm Tip - A.O. Type	1
Instrument Box With Two Trays Length 300mm	1

75. External Fixator

Each Set should Contains:

S
r
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DESCRIPTION

QT
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n
o
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STENMINPIN INTRODUCER with Chuck & Key 4

PINS

1	Front Theraded pin (Shanz Screw) Dia.4.5mm Length 200mm,Thread 32mm	50
2	Front Theraded pin (Shanz Screw) Dia.4.5mm Length 125mm,Thread 32mm	50
3	Front Threaded Pin Dia. 1.5mm X 75mm	50
4	Front Threaded Pin Dia. 2.0mm X 75mm	50
5	Front Threaded Pin Dia. 2.5mm X 150mm	50
6	Front Theraded Pin Dia.3.5mm,Shaft 4.0mm, Length 125mm, Thread Length 14mm	50
7	Cancellous Front Threaded Pin 6.5mm Dia., Thread Length 16mm, Total Length 225mm	25
8	Cancellous Front Threaded Pin 6.5mm Dia., Thread Length 32mm, Total Length 225mm	50

EXTERNAL FIXATOR

9	Single Pin Clamp	50
1	Transverse Clamp	20
0		
1	Tube to Tube Clamp	20
1		
1	Spanner - 11mm	5
2		
1	Tubular Rods: 150mm (6")	10
3		
1	Tubular Rods: 200mm (8")	10
4		
1	Tubular Rods: 250mm (10")	10
5		
1	Tubular Rods: 300mm (12")	10
6		
1	Tubular Rods: 350mm (14")	10
7		
1	Tubular Rods: 400mm (16")	10
8		
1	Tubular Rods: 450mm (18")	10
9		
2	Small Single Pin Clamp 4.0 X 2.5mm	25
0		
2	Small Connection Clamp 4.0 X 4.0mm	25
1		
2	Connecting Rod 4.0mm Dia. Length 150mm- S.S.	10
2		
2	Connecting Rod 4.0mm Dia. Length 200mm- S.S.	10
3		
2	Connecting Rod 4.0mm Dia. Length 250mm- S.S.	10
4		
2	Spanner - 7mm	
5		

76. Portable X-ray

Specifications for Portable 100mA mobile X Ray Unit

State of Art High frequency microprocessor controlled Portable X Ray having following features:

- Compact, lightweight, easily transportable mobile X Ray unit suitable for bedside x-rays, trauma, Intensive care units, Operations theatres and also in the Radiology department.
- The unit should be fully counterbalanced and can be positioned to suit different bed heights. The unit should have facility of vertical swing and horizontal rotation of the tube head to ensure X Ray of any anatomy even within limited space.
- The unit must have an effective braking system for parking and transport.
- The tube stand must be fully counterbalanced with rotation in all directions.
- The exposure release switch should be detachable with a cord of sufficient length (atleast 3 m)
- The unit should have integrated cassette box of size 542 mm (W) x 420 mm(H)
- The Generator:
 - a. Microprocessor controlled high frequency / inverter type of high frequency (40 KHz or more) for constant output.
 - b. It should have power rating of 4 kW or more
 - c. It should have a digital display of mAs and kV.
 - d. KV range : 40 kv to 100kV or more
 - e. mA range: 10 mA to 100 mA or more
 - f. KV selection: 40 kV to 100 kv, selectable in 1 kV steps
 - g. mAS selection: 0.1 to 250 mAS
 - h. Exposure time of 10 ms to 5 s or less
 - i. It should have over loading protection.
- X-Ray Tube and Collimator:
 - a. Stationary anode and focal spot size should be less than 2mm or less (IEC 60336).
 - b. Output of tube should match with that of generator.
 - c. Light Beam diaphragm Collimator of multi leaf type with auto cut off switch. The light intensity shall be at least 160 lux at 1 mtr distance from focal spot.
- The unit should operate on single phase power supply and should have plug in facility to any standard wall outlet with automatic adaptation to line voltage 200 to 240 volts, 15 Amp plug.
- The weight of unit should be less than 100 kg
- The Systems should be fully safe with respect to
 - a. Over current
 - b. Over Voltage
 - c. Maximum loading of tube
- Power input to be 220-240VAC, 50Hz fitted with Indian plug.
- Manufacturer / supplier should have ISO / CE / USFDA approved certification.
- Should be an AERB approved product.
- User/Technical/Maintenance manuals to be supplied in English.

- Essential Accessories: The following essential accessories to be provided with the unit.
 - a. Where applicable, Voltage stabilizer of required capacity, the capacity and make of the voltage stabilizer should be specified.
 - b. Lateral cassette holder – One.
 - c. Cassettes - one each of size 10” X 12” (25X30cm) and 14” X 17” (35X43cm)
- Should comply with AERB or BIS or ICRP Guidelines for radiation leakage and X-Ray equipments.
- The System should be field upgradable to Computed Radiography system having following features:
 - a. High resolution CR system field upgradable to be completely integrated with the main mobile X Ray unit.
 - b. CR to be mounted on the main Mobile X-Ray unit Should have imaging plates fixed to rigid back panel and nothing touching the active area of phosphor plate to ensure superior image quality and durability of the system.
 - c. Should have comprehensive software with facility of smart search, sort, filter options, full set of annotations, measurement tools and user preferred settings.
 - d. Grayscale resolution: 16 bits/Pixel source file or more, 65536 shades of Grey
 - e. Data acquisition process should be True Flat Scan Path
 - f. Image access time: 35 seconds or less
 - g. The system should be DICOM & PACS compatible
 - h. Provision to attach laptop
 - i. CR compatible Cassettes - one each of size 10” X 12” (25X30cm) and 14” X 17” (35X43cm)

Please quote as optional, Dry Laser (photothermographic) Printer with 100 Micron printing with Automatic density correction.

77. Plaster room equipments with plaster table

S.NO	DESCRIPTION	QTY
	Consist of	
1	PLASTER ROOM TABLE with Mackentos Sheet	4
2	PLASTER SAW HEAVY HANDLE	4
3	PLASTER SAW ENGEL	4
4	PLASTER SAW BERGMAN	4
5	PLASTER SPREADER	4
6	PLASTER SHEAR - BOHLER'S	4
7	PLASTER SHEAR - STILLE'S	4
8	PLASTER SHEAR - GAY'S	4
9	BANDAGE CUTTING SCISSOR	4
10	PLASTER BENDER	4
11	PLASTER OPENER - DAW'S	4
12	Big Bowel /Bacin S.S with Stand for Plaster	4

78. Snellen Chart/Snellen drum with or without remote

79. Perimeter

Instrument Features:

- Peripheral Range 90°
- Static Perimetry, DS, NS
- Fixation Control & Pupil Measure
- Head position recognition
- Ethernet connection
- Stimulus Sizes 111, V
- Stimulus Sizes 1 –V
- Expert Opinion (Easterman test)
- Kinetic Disability test
- Automated Lens Holder
- Lens Distance Control
- EyeSuite Perimetry Lite
- EyeSuite Perimetry Advanced
- EyeSuite Perimetry Pro
- TOP Fast Strategy (2:30 min test)
- Custom Test
- Automated Eye Tracking (AET)
- Flicker Perimetry
- Blue Yellow Perimetry (SWAP)
- Red Stimulus (color perimetry)
- Manual Goldmann Kinetic
- Automated Goldmann Kinetic

Electrical & Mechanical Specifications

Power Requirements	:	100-120VAC/220-240VAC 50/60 Hz
Operating Temperature	:	+ 15° C ... + 40° C
Light Source life span	:	>20'000 hrs for stimulus, background and fixation
Conformity	:	CE:93/42/EEC, 89/336/EEC, conformity module A CSA C &US
Measures (W x L x H)	:	648mm x 519mm x 796mm
Weight	:	25 Kg

80. Ophthalmoscope

Technical Specification

- 11) Should have separation of illumination and observation beam by means of the aspherical optical system avoids corneal and iris reflex.
- 12) Should have bright, white light.
- 13) Should have avoids stray light.
- 14) Should have maintenance-free.
- 15) Should have durable, precise.

- 16) Should have instruments fits the orbita comfortably in any position.
- 17) Should have protects the users' glasses and steadies the instrument.
- 18) Should have suitable for large or small pupils. Incorporates slit aperture, fixation star, cobalt blue filter and red-free filter for improved contrast.
- 19) Should have given good results even with high refractive errors.
- 20) Should have CE approved.

81. Retinoscope

Specification

1. Should have precise, easy selection of a parallel beam.
2. Should have maintenance-free.
3. Should have comfortable operation.
4. Should have eliminates stray light and internal reflexes.
5. Should have simply by changing the bulb.
6. Should have bright, white light. Bright funds reflex, easy recognition of neutralisation point.
7. Should have long-lasting quality instrument.
8. Should have reduces patient dazzle without affecting the fundus reflex.
9. Should have protects the examiner's orbita from stay light.
10. Should have dynamic retinoscopy.
11. Should have increased comfort.
12. Should have CE approved.

82. Slit Lamp

MICROSCOPE	
Type	Galileo Convergence
Magnification Selection	3 Steps By Rotation Drum
Magnification	10x, 16x, 25x
Eyepiece	12.5x
Diopter Adjustment	-5d~+3d
Total Magnification	10x (\varnothing 22.5mm) 15.98x (\varnothing 14.1mm), 25.53x (\varnothing 8.8mm)
Illumination	
Slit Width	Continuous From 0 To 14mm
Slit Length	Continuous From 0 To 14mm
Aperture	Continuous From 0 To 14mm
Slit Angle	0° To 180°
Filter	Blue, Redfree
Light Source	Led
Power	

Power Consumption	40VA
Input (Primary)	Ac 100-240v, 50-60hz
Dimensions And Weight	
Standard (With Table Top And Chinrest)	550mm(W), 399mm(D), 520mm(H), 15.2kg

83. Applanation tonometer:-

Measuring Force Generated	By Leverage Weight
Installation	- OP-1H type is mountable on 2 Supporting - Pivot Top of the binocular microscope - OP-1S type can be mounted on a plate on the microscope arm
Measuring Range	0 – 80 mm Hg in 2mm increments + 0,5 mm.Hg
Dimension	The pneumatic face 3,06 mm
Measurement Uncertainty Of the force	Standard Divergence
Impingement on the measuring	0.49m N < 3s < 1.5% of rated value Element
Measurement	47 mm wide x 33 mm deep x 90 mm height
Net weight	725 g (without accessories)

84. Operating microscope with TV unit with camera

Main Microscope	
Binocular Tube	Parallel 45° inclined binocular tube
Objective Lens	F = 200mm
Eyepieces	12.5x
Magnification Change type	Drum type with 5 changes
Total magnification	3.4x, 5.3x, 8.5x, 13.6x, 21.2x

Field of view	ø66.3, ø42.3, ø26.3, ø17.1, ø10.3mm
X-Y Translator (Option)	Range : ±25mm
Illumination	
Light Source	12V 100W halogen lamp (light guided system) One-touch changeable two lamps
Filter	Built -in: Heat-absorbing and UV cut filters Flip-in/out: Yellow filter
ARM (counter-balanced)	
Length	1 st arm : 400mm, 2 nd arm:560mm
Rotational angle	1 st arm:360°, 2 nd arm:300°
Column Base	
Base dimension	ø740mm (30")
Power Unit	
Primary voltage	AC100~120V or AC220~240V
Power Frequency	50/60 Hz
Maximum power consumption	280VA
Weight	
Weight	97Kg
OPTIONAL ACCESSORIES	
XY Translator	Yes
Camera Attachment (TV Relay Lens TL-5A and Sony 1CCD Video Camera)	Yes
Assistant's microscope with Adaptor	Yes

85. ENT Examination Chair

86. Puretone audiometer

- Should have Two Channel facility.
- Should have output air conduction/ Bone conduction/free field /speech testing
- Should have pure tone, pulse tone, warble tone, narrow band ,white and speech noise
- USB PC interface, NOAH compatible
- Should have ability to store audiogram results in USB stick as pdf format
- Should have 5.7" TFT display for see audiogram format & status format.
- Should have mixing capabilities.
- Should have following frequency, Intensity range:-
Air conduction:- 125 to 20,000 Hz, - 10dB HL to 120 dB HL

Bone conduction:- 250 to 8,000 Hz, - 10 dB HL to 80 dB HL

Level Step: 5 dB, 2 dB, or 1 dB

- Should have following special test capabilities:-SISI, ALT, Tone Decay,
- Should have facility Narrow Band Noise , White Noise , Speech Noise or CD / Tape masking
- Should have following standards: IEC601-1, IEC645-1, IEC645-2, CE 0123.
- Should be supplied with standard accessories:
Head Phone DD45, High Frequency headphone HDA200, Bone vibrator, Subject response hand switch, Test Microphone, Talk back microphone, Power cords, Instruction manual

87. Impedence audiometer

1. **Test Type** : Tympanometry, Acoustic Reflex, Reflex Decay, Eustachian Tube
2. : Function, Acoustic Reflex Latency Test
3. **Impedance Measurement** :
4. Probe Frequency : 226,678 ,1000 HZ
5. Level : 85 dB SPL +/- 3.0 dB SPL
6. **Pressure Ranges:**
7. **Tympanometry** : Normal = + 200 to – 400 daPa
8. Wide= + 400 to –600 daPa
9. **Compliance Ranges** :

10. Tympanogram	:	Minimum -1.0 to + 7.0
11. Reflex Mode	:	Minimum - 0.15 to + 0.8
12.		+ 0.15 to - 0.80
13. Reflex stimulus	:	250,500,1K, 2K, 4K
14.		50 to 120 dB HL
15. Display	:	Internal Monitor
16. Printer	:	Internal Printer
17. Interface compatibility	:	USB,
18. Voltage Supply	:	100 to 240 V ,3.2 A
19. Standard Accessories	:	Probe assembly (including ipsi& contra)
Eartips(1 pkg,each		
20.		standard),printer paper(2 rolls thermal),
Calibration test cavity,		
21.		Cleaning kit, Dust Cover, Probe Mount Kit.

88. Colonoscope

Should have following specifications :

- Lighter and possess HD resolution image quality.
- Fully immersible in disinfectant solution.
- Three or more no. of remote control switches on control body.
- Compatible with leakage testing device with its air flow and pressure regulation through light source's air pump.
- Should have capability of Band Imaging (NBI/FICE/I-scan)

Field of view	:	140 degree or more
Direction of view	:	0 degree, forward viewing
Depth of field	:	2 to 100 mm or better
Distal end outer diameter	:	12.8 mm or less
Insertion tube outer diameter	:	12.8 mm or less
Tip Bending rage	:	Up 180 deg, Down 180 deg, Right 160 deg, Left 160 deg
Working length	:	1680 mm or more
Channel inner diameter	:	3.7 mm or more
Minimum Visible distance of instrument used thru channel	:	5 mm or closer from distal end.

Video Processor :

- Should be compatible with Analog, HD-SDI and DVI output & 16:9 & 16:10 output for a HDTV monitor should be available.
- should contain the long-life LED light source / 300 xenon light source.
- Equipped with high resolution HDTV Imaging capacity.
- Compact, light weight (10-11 kg) and ergonomically designed
- **Narrow Band Imaging capacity for compatibility with NBI Videoscopes.**
- equipped with one touch connection of scopes.
- Portable Memory & USB Slot for image recording
- Automatic IRIS control & automatic white balance
- Equipped with memory back up for settings & Lithium battery.
- Should have pre freeze function for image stabilization

Standard accessories

White cap holder	1 No.
Foot Holder	1 No.
Scope cable holder	1 No.
SDI cable 2.5M	1 No.
Keyboard	1 No.
Portable memory (2GB)	1 No.
Keyboard cover	1 No.
Water Container	1 No.
Operation Manual	1 No.
White balance cap	1 No.

Trolley suitable for Endoscope System .
Monitor- Medical Grade 21 inch.

89. NST Machine/CTG/Fetal Monitor

- Should have 12” foldable color TFT-LCD Touch Screen display
- Should be suitable for continuous monitoring of fetal heart rate (Dual) and Uterine Activity, Maternal NIBP, MEGG & MSpo2.
- Should display at least 6 waveforms.
- Should have manual as well as touch function for all parameters.
- Should have minimum 12Crystal water proof transducer for clear FHR
- Should have dual channel FHR for twin monitoring facility along with separate traces for each fetus.
- Should have signal overlap verification facility for calculation FHR and distinguish between FHR of twin fetus automatically.
- Should be able to store data continuously for 24 hours
- Should have inbuilt rechargeable lithium –ion battery with battery back up upto 4 hours in continuous mode.
- Should have integrated probe rack for various probes.
- Should have inbuilt real time thermal printer and should use Z-fold thermal paper with speed of 1, 2 & 3 cm per min.
- Should have handle for easy carrying and provision for wall mount.
- Should have audio –visual alarm setting for all parameters.
- Option for review stored data and facility of print out.
- Should have an connectivity with central nursing station with wireless network
- Should Have option of IUP and DECG Function (Quoting company shall perform Demonstration of up gradation parameters during demonstration especially IUP)
- Fetal monitor must have US FDA Quality certification.
- Machine should give complete analysis report.
- Should supplied complete with
 1. FHR Probe 2No
 2. TOCO Probe 1No

3. Event Marker	1No	
4. NIBP Cuff Adult	1No	
5. Spo2 Probe		1No
6. ECG 3 Lead	1No	
7. Belt		3No
8. Thermal paper (150mm)		2 Rolls
9. Manual	1 No	

90. Portable Ultrasound Machine

Technical specification For Portable Colour Doppler System

A state of art fully digital, compact portable Colour Doppler Ultrasound machine (weight <5 kg) is required with following technical features

1. Unit should be able to give very high image quality with advance technologies like compound imaging with at least 5 sights of lines for better cardiac contrast resolution, tissue differentiation and edge detection, equivalent to high end cart based systems. Please specify the technology.
2. System should be able to support speckle reduction imaging for better tissue differentiation and edge enhancement please specify the technology.
3. System should have both online (Read) as well as offline(Write) zoom facility
4. Imaging modes of Real time 2D, Colour Doppler, Power Doppler , Pulsed wave Doppler, Continuous wave Doppler(on all cardiac transducers) must be available.
5. System must have fast start up to scanning in less than 30 seconds from off condition, for use in critical and emergency situations.
6. System should support transducer technologies like phased array, convex, linear, TEE etc.
7. The system should have a broadband architecture with an operating frequency of at least 1 to 15 MHz.
8. Cine memory on all modes.
9. The system shall process a dynamic range that is at least 165db. The system must display at a maximum depth of 35 cm.
10. The system shall support ECG
11. The system must have a dedicated cardiac calculation packages with PISA, TDI calculation packages, vascular calculations package.
12. The system shall provide Tissue Doppler Pulsed Wave Doppler(TDI PW) Mode as standard .
13. Flat LCD/ TFT monitor of at least 12 inches with flicker free image.
14. Alphanumeric soft keys backlit and splash resistant keypad with easy access scans controls, facility to sanitize the system keyboard to avoid cross contamination.
15. The system must have the ability to function by AC/DC or battery power with the same degree of functionality, the battery life (run time) shall be al least 2 (Two) hours, this need to demonstrate.
16. The system must have archive capability for storage and retrieval of images and clips.
17. Unit must be sturdy, resistant to breakage & damage on fall/ hit against the wall or hard surface.
18. PW TDI (Tissue Doppler Imaging) should be standard in system
19. Needle Visulization software to supplied as standard with system.
20. System should be supplied with facility to attach three transducers simultaneously.

21. System should have both European CE and US FDA quality certification.

Transducers to be supplied as standard:

1. 1-5 MHz multifrequency Phased Array transducer for adult Echocardiography with PW & CW facility
2. 5-10 MHz 38 mm broadband Linear array transducer for vascular access, small parts, vascular, musculoskeletal applications
3. Trolley

Optional Transducers/software/Items:

1. 4-8 MHz broadband Phased array transducer for Pediatric cardiology imaging.
2. B/W Thermal printer

WARRANTY: Main unit and transducers should be covered with comprehensive onsite warranty for five years commencing from the date of issue of installation certificate.

91. Electrocautery

- 1) The ESU should be microcontroller based & should deliver optimal clinical effects in all operational modes through continuous synchronization of current & voltage.
- 2) The system should have advance digital signal processing to sample current & voltages more than 1000 times per second and adjust the output accordingly to deliver consistent tissue effect.
- 3) The system should have Automatic contact quality return electrode monitoring system. It should have status indicator bar graph to display the relative quality of the dual dispersive electrode application
- 4) The system should have advance speciality modes for General, Under Water & laparoscopy procedure.
- 5) The system should have minimum 5 programmable memories to store setting speciality wise.
- 6) The system should have pure cut mode with max power of 300W.
- 7) The System should have minimum 3 blend modes with 200 W max powers.
- 2) The system should have endoscopy cut mode for sphincterotomy & polypectomy application.
- 8) The System should have Remote Power control facility to change the power setting from the sterile field.
- 9) The System should have Readiplug Universal Accessory portal, allowing a variety of accessories to be plugged into the footswitch portal without having to use adaptor.
- 10) Illuminated portals for access & visibility.
- 11) The system should have bipolar current meter for providing feedback on desiccations level via audible/visual indicators.
- 12) A Serial interface port for communicating with robotic surgical systems or O.R integration systems.
- 13) The System should have following Monopolar coagulation modes like Pinpoint, Standard, Spray & pulsed.
- 14) The System should have minimum 4 independent output portals for connecting active accessories.
- 15) Simultaneous activation in non-contact monopolar coagulation modes.
- 16) The system should comply with Medical Electrical Equipment Standards like (UL2601-1: 2000, IEC60601-1: 1995,etc

- 17) Type of protection against electric shock: IEC Class 1.
- 18) The system should be US FDA approved.
- 19) Degree of protection against electric shock: Type CF, Defibrillator Proof, Non-Ionizing Radiation.
- 20) The System should have micro & macro bipolar modes.
- 21) Warranty for 5 years.
- 22) The system should come with following standard accessories
- 23) Dual Disposable Patient Plate-100 nos.
- 24) Monopolar footswitch-1no.
- 25) Bipolar footswitch-1no.
- 26) Reusable Hand switching pencil- 5 nos
- 27) Reusable patient plate with cable for Adult & Paediatric application -1 nos each.
- 28) Bayonet bipolar forceps-1no.
- 29) Reusable Autoclavable Forceps cord-1nos.

92. Multi channel Monitor

1. The machine shall have a modular design to allow flexible configuration of the monitored parameters.
2. It should have inbuilt 17" TFT LCD Display with resolution 1280*1024 and maximum waveform should be 13 nos.
3. It should have following parameters as standard -
 - a. ECG(5 lead selectable, 12 lead optional)
 - b. Respiration
 - c. NIBP
 - d. SpO2
 - e. 2-Temperature
 - f. Etco2 (Sidestream)
4. The unit should be upgradable to the following parameters – Cardiac Output, Multi-gas, BIS , ICG and upto 8 Ch-IBP.
5. ECG should have ST analysis and Arrhythmia Analysis (16 types).
6. It should have following Interface --
 - VGA Output
 - Analog output
 - Defibrillator synchronization output
 - SD Card
 - USB
 - It should have option of Wired/Wireless central station and should support Nurse Call function.
7. It should have Trends review of all parameters for 150h and NIBP measurement storage of 1200 sets.
8. It should support – HL-7 compitability.
9. It should have a Li-ion rechargeable Battery (2 slots) with a backup of upto 6 hours for longer duration.
10. It must have a valid USFDA and CE certificates.

93. OT Light

DOUBLE COMBINATION OT CEILING Light WITH LED TECHNOLOGY AND CENTRALLY MOUNTED CAMERA SYSTEM

1. Should have the following Features:

- One major and one Satellite Dome/lighthouse of different dimensions
- Single Colour White LED,s
- Glass Reflector at bottom based LED Technology
- Arrangement of LED in such a way that Shadow Free / Deep cavity illumination is achieved
- Special design to maximize the field of illumination and optimized illumination depth
- Should have good laminar flow properties
- Efficient heat management system through heat sink and low power consp.(**alum.housing**)
- ESG safety glass for simple and fast disinfection process
- 360 deg rotation of domes/lighthouses / arms for unlimited positioning of light heads
- Control on the light heads

Technical Data of Light Heads:

	<u>Major</u>	<u>Satellite</u>
Intensity (Lux)	1,60,000	1,40,000
Life time of light source (h)		>40,000
CRI (Ra)		96
R9		96
Colour Temp(K)		4500
Light Head Power Consumption	less or equal to 65W at 24V DC	

2. Centrally Mounted Camera PAL to be mounted on satellite dome

- Camera Should be High Definition (H.D.)
- With Zoom Facility and Wall Control
- Focus Automatic,manual
- Iris: Automatic,manual
- White balance: Automatic,manual

3. Monitor flat screen

The Light should meet EN ISO 13485:2007 and European CE certified/ U.S.FDA CERTIFICATE.

94. OT Table

Specification for High End OT Table

34. Electro hydraulic Operated, Twelve function Remote control Table
 - Up & Down Min 29", Max 44"
 - Tendlenberg & Reverse Tendlenberg (30° either side)
 - Right Lateral & Left Lateral (21° on either side)
 - Back Rest (+ 90° to - 90°)
 - Power Brakes (for Braking & Unbraking the Table)
 - Longitudinal Sliding 400mm either side
35. The Table should be provided with an external charging circuit, which should have an indication for no charge, charging and full charge with colour LED indications.
36. The remote cord should come from the head end of the Table i.e. from the base to facilitate the anesthetist

37. The Table should have six polyurethane castors for longitudinal and lateral movements.
38. The power brakes should be located on the head side of the Table base for better stability.
39. The backrest should have electro hydraulic movement and should be detachable, to fix the other attachments.
40. The table should have an Override panel on the column of the table.
41. The Table should have a zero position. Trendlenburg, Lateral, Backrest all should have leveling sensors. The Zero position should be operated from the remote hand set as well as the Override panel.
42. The Table should have a provision to screen the patient from neck to toe at a single shot without any hindrance.
43. The Table should have a provision to memorise any two positions. It should be erasable and reprogrammable. The provision should be available on both the remote handset and as well as the override panel.
44. The up & down movements should be jerk free and should have high precision glides to avoid wig-wag movement of the column.
45. The table should have an emergency stop, in case of any malfunction. The provision should be available on both the remote handset as well as the override panel.
46. The Table should have battery level indicators, both on the remote hand set and the override panel.
47. The Table should have a sealed bottom to prevent water and dust from entering inside.
48. The Table should have more leg space for the surgeons for lower end surgeries.
49. There should not be any cross bars throughout the length of the Table. The table should be able to stretch to 6 feet without any floor support.
50. Leg bed should be two pieces right and left end should be detachable and abductable and also should move up & down.
51. Trendlenburg and lateral mechanism should be concealed with bellows; column should be straight without any projection on right or left.
52. Table column size should be 280mm X 280mm.
53. Table should have provision to view spine AP and C – arm.
54. Polyurethane detachable cushion top should be provided on the Table top.
55. Base covers should be covered with impact, shock resistant, Fire resistant, and disinfectant free material. Base should be broader in the head end.
56. The column casing, table top frame, traction bars and all accessories made of non-corrosive stainless steel. The main column should be covered with non-corrosive stainless steel.
57. Inbuilt Battery backup should be provided.
58. The Table Top should be reversible, the head rest attachments, the head rest attachments should fix to the tail side and the tail side attachments should fix to the head side.
59. The Table should be capable of taking off centered load. The load carrying capacity should be 380 Kgs.

60. The entire vertebral column should be viewed without any hindrance.
61. Patient sitting position, with Trendelenburg maximum should be possible.
62. Minimum height 27" preferred.
63. The Table should be capable for all surgeries
64. The Table should be supplied with all Orthopaedics Surgery Attachments.
65. Should be CE, ISO-9001-2008, ISO-13485 approved.

The table should be provided following standard accessories

- h. Arm boards with pad & clamp – 2 nos
- i. Anesthesia screen frame & clamp -1 No
- j. Body strap – 1No
- k. Lithotomy knee crutch, padded with radial clamp – 2 Nos
- l. Orthopaedic extension device floor mounted type with accessories for DHS, femur nailing in supine & lateral, with sacral rest and perineal post, Lateral supports (back buttock – 2 nos& public- sacrum- sternum support 1 no) with height adjustment, flexible at 2 joints with additional longitudinal extension.- 1 set
- m. Hand operating table with telescopic support- 1 no
- n. Horse shoe head rest for cervical spine surgeries – 1 no
66. Wilson frame for lumbar spine surgeries – 1 no

MANUAL OVERRIDE FUNCTIONS FOR EMERGENCY

PART 2

- It should have a preselector for all the twelve functions
- Isolated manual override to be incorporated in ten function remote control Table
- A foot pedal should be used for pumping to achieve various position
- In case of electrical component failure using this mechanism the table should be operated mechanically
- The manual system should be capable of taking off centered load for screening from neck to toe
- In case of breakdown in the middle of the surgery, there should be a provision to operate manual functions instantly without any time lag

95. Infusion Pump

SPECIFICATION

- Microprocessor Controlled Syringe Infusion Pump
- Bottom loading syringe technique
- Delivery Range 0.1 ml/hr to 99.9 ml/hr
- Syringes Of Sizes 20 ml, 50 ml & 60 ml can be used
- Delivery Volume Pre selection 1 to 999.9 ml
- Delivery Precision +/- 2%
- BOLUS FUNCTION :-
On Line Bolus

One Touch Bolus

Bolus Delivery rate 800 ml/hr

Automatic bolus reduction system during occlusion

- Battery Type NiCd, rechargeable AA size
- Battery Operating Time approx. 20 hours during delivery rate < 10 ml/hr
- Alternatively 4x1.5V alkaline batteries and can work for >80 hrs at delivery < 10 ml/hr.
- VERTICALLY STACKABLE UPTO 3 PUMPS FOR EASY TRANSPORTATION & OPTIMUM SPACE MANAGEMENT
- ONLINE CHANGING OF DELIVERY RATE POSSIBLE
- VARIABLE OCCULSION PRESSURE
- STANDBY FUNCTION
- Pump can Retain Data When Disconnected From Patient in this mode
- ALARM SYSTEMS :
 - Occlusion Pressure Alarm
 - 3 min pre- alarm
 - Syringe empty alarm
 - Syringe incorrectly place
 - Volume Infused alarm
 - Battery Charge Low alarm (3 min pre-alarm)
 - Internal Function Alarm
 - Drive disengaged alarm
- Safety Classification :
 - Type CF – protected against defibrillation
 - Protection class II
 - (IP 22) Splash Proof
- Up gradable to Fluid management system

96. Conventional X-Ray

The high power general radiography system should have a High Frequency inverter type generator.

X-ray GENERATOR:

- High frequency X-ray Generator with inverter having frequency of 30 KHz or more should be provided.
- Power output of generator should be 40 KW or more.
- Radiographic KV Range should be 40 to 150 KV or more at 1 KV step.
- Radiographic mA Range (Rad.) : 300-600 mA.
- Exposure time (Rad.): 1ms to 3 sec.

Control:

A compact , Soft Touch control panel having following functions & indications should be provided. The panel can be supplied in Floor or Wall mount with Spill Proof design. Following features should be available on the control panel.

- Machine ON/OFF Switch.
- LED readout for parameter display
- KV & mAs increase and decrease switches.
- Tube focal spot selection Switch.
- Ready and x-ray on switch with indicators
- Bucky Selection switch.
- Self diagnostic Programmed with indicators for Earth fault error, KV error, filament error & Tube's Thermal Overload.
- Anatomical Programming Radiography : 200 programmes or more.
- It would be preferable to have an audio as well as visual indicators to display the system status during exposure to prevent any double exposure occurrences.

A dual action hand switch with retractable cord should be provided for Radiation Protection of operator.

X-RAY TUBE:

- One No. high speed Rotating Anode X-ray tube thermally protected having focal spot of 1.0 & 2.0 mm²
- Anode heat storage capacity of tube should be more than 150 KHU.
- One pair of 5-10 meter long H.V. Cable.
- One No. multi leaf Collimator with maximum field size of size 43 x 43 cm at 100 cm SID. With auto shut off facility should be provided.

TUBE STAND:

- Floor to Ceiling stand with counter Balances Tube Head (Rotatable \pm 180 degree), 360 Degree Rotatable; mounted on Floor Ceiling Rails for convenient movements should be provided.

TABLE

- Floatex table with 4-way movement of the table top. Longitudinal movement of tabletop should be more than 800 mm & transverse movement should be more than 200mm.
- The table should consists of motorized reciprocating bucky with automatic sensing of cassette size.
- The tabletop should be made of low radiation absorption, waterproof material.

VERTICAL BUCKY STAND:

- Vertical Bucky stand with oscillating Grid of Ratio 8:1, 85 lines should be provided.
- The Bucky should moves up & down & is equipped with a stainless steel cassette tray.

- The stand should be floor-mounted type & can accommodate cassettes up to 14" X 17". The Bucky should be tilted in 6 steps of 15 degree Angle each for various Radiographs.

POWER REQUIREMENT:

- The unit should be operable on 3 phase, 440 Volts AC 50 Hz with line resist less than 0.4 Ohms. Line Regulation \pm 10%.

OTHER REQUIREMENTS :

- The company should be ISO-9001:2008, ISO-13485:2003 company with CE Certified products.
- The Unit should be approved by AERB.
- The company should have a local service centre.
- The company should have proven track record in Govt. Sector.
- The machine should have at least 5 year of warranty and 5 year of CMC post warranty period.

97. Mobile X-ray

Specifications for Portable 100mA mobile X Ray Unit

State of Art High frequency microprocessor controlled Portable X Ray having following features:

- Compact, lightweight, easily transportable mobile X Ray unit suitable for bedside x-rays, trauma, Intensive care units, Operations theatres and also in the Radiology department.
- The unit should be fully counterbalanced and can be positioned to suit different bed heights. The unit should have facility of vertical swing and horizontal rotation of the tube head to ensure X Ray of any anatomy even within limited space.
- The unit must have an effective braking system for parking and transport.
- The tube stand must be fully counterbalanced with rotation in all directions.
- The exposure release switch should be detachable with a cord of sufficient length (atleast 3 m)
- The unit should have integrated cassette box of size 542 mm (W) x 420 mm(H)
- The Generator:

- j. Microprocessor controlled high frequency / inverter type of high frequency (40 KHz or more) for constant output.
 - k. It should have power rating of 4 kW or more
 - l. It should have a digital display of mAs and kV.
 - m. KV range : 40 kv to 100kV or more
 - n. mA range: 10 mA to 100 mA or more
 - o. KV selection: 40 kV to 100 kv, selectable in 1 kV steps
 - p. mAS selection: 0.1 to 250 mAS
 - q. Exposure time of 10 ms to 5 s or less
 - r. It should have over loading protection.
- X-Ray Tube and Collimator:
 - d. Stationary anode and focal spot size should be less than 2mm or less (IEC 60336).
 - e. Output of tube should match with that of generator.
 - f. Light Beam diaphragm Collimator of multi leaf type with auto cut off switch. The light intensity shall be at least 160 lux at 1 mtr distance from focal spot.
- The unit should operate on single phase power supply and should have plug in facility to any standard wall outlet with automatic adaptation to line voltage 200 to 240 volts, 15 Amp plug.
- The weight of unit should be less than 100 kg
- The Systems should be fully safe with respect to
 - d. Over current
 - e. Over Voltage
 - f. Maximum loading of tube
- Power input to be 220-240VAC, 50Hz fitted with Indian plug.
- Manufacturer / supplier should have ISO / CE / USFDA approved certification.
- Should be an AERB approved product.
- User/Technical/Maintenance manuals to be supplied in English.
- Essential Accessories: The following essential accessories to be provided with the unit.
 - d. Where applicable, Voltage stabilizer of required capacity, the capacity and make of the voltage stabilizer should be specified.
 - e. Lateral cassette holder – One.
 - f. Cassettes - one each of size 10" X 12" (25X30cm) and 14" X 17" (35X43cm)
- Should comply with AERB or BIS or ICRP Guidelines for radiation leakage and X-Ray equipments.
- The System should be field upgradable to Computed Radiography system having following features:
 - j. High resolution CR system field upgradable to be completely integrated with the main mobile X Ray unit.
 - k. CR to be mounted on the main Mobile X-Ray unit Should have imaging plates fixed to rigid back panel and nothing touching the active area of phosphor plate to ensure superior image quality and durability of the system.
 - l. Should have comprehensive software with facility of smart search, sort, filter options, full set of annotations, measurement tools and user preferred settings.
 - m. Grayscale resolution: 16 bits/Pixel source file or more, 65536 shades of Grey
 - n. Data acquisition process should be True Flat Scan Path
 - o. Image access time: 35 seconds or less

- p. The system should be DICOM & PACS compatible
- q. Provision to attach laptop
- r. CR compatible Cassettes - one each of size 10" X 12" (25X30cm) and 14" X 17" (35X43cm)

Please quote as optional, Dry Laser (photothermographic) Printer with 100 Micron printing with Automatic density correction.

98. Hospital Furniture

1. Hospital beds with mattress

- Overall approx. size 21100-2150mm L x 980-1020mm W x 500-550mm H. bed frame 1950mmX850mm. The main frame should be made from 6cms x 3cms x 16 G ERW rectangular tubes. Two sections top should be made from 18 G C.R.C. sheets uniformly perforated and should be suitably fitted to the main frame. Back-rest should be maneuvered by the cardo structure gas spring assisted inbuilt crank mechanism with parking space in bed frame.
- M.S. Tube for linear movement in a approx. 38mm dia. x 16 G ERW M. S. cover tube which can be smoothly operated on thrust bearings. One integrated handle should be provided chrome plated/plastic molded. . The head and foot end to be plastic molded and to be lockable. Bed should be provided with lockable castors of 125 mm diameter. One IV rod and four or more positions in bed for I V rod provision. Suitable two section mattress covered with good quality washable rexine. All mild steel components should be thoroughly pre-treated chemically to remove rust and foreign matter like Grease, Oil etc. by dip tank process pre-treatment system. The treated Metal Surface should have coating of Epoxy Polyester Powder and oven baked at 180 degree to 200 degree Centigrade to avoid contamination of the clean metal surface from dust particles. Bed should have antimicrobial coating.Principle to be US FDA registered. Bed to be European CE and facility to be ISO 9001, 14001 and 13485 approved.

2. I.V Stand

- Heavy duty plastic base on five castors for stability (Non-rusting).
- Four Hooks provided for I.V. Fluids.
- Made of SS/MS
- Epoxy, powder coated finished.
- Base length with castors (Approx)
- Hook Length 60 cms(24")
- Hook Height Minimum 136 cms(53.5")
- Hook Height Maximum 216 cms (85")

3. Bed side Stool

- Made of Mild Steel Tubes with SS Top.
- Four Rubber Shoes
- Epoxy Powder Coated Finished.
- Square Top – L x W 30.5 cms X30.5 cms (12"X12")
- Square Base – L x W 38.5 cms X 38.5 cms (18.5" X 18.5")
- Height of Stool 47 cms (18.5")

-
- 4. **Crash cart**
 - Size – L – 93 cms (36.5") x W – 56 cms (22") x H – 159 cms (62")
 - Fully S.S. 304 grade.
 - Four Compartment Drawer.
 - Oxygen Cylinder Cage on one side.
 - Wooden Tray.
 - 5 Plastic Bins.
- 5. **Curtain Stand**
 - Made of M.S. Tubes in three folds.
 - Folds on six castors.
 - Fabric fixed on Stainless Steel Rods.
 - Fabric Removable for cleaning.
 - Epoxy Powder Coated finished.
 - Screen Height 180 cms (71")
 - Open Screen Length 243 cms (96")
 - Folded Screen Length 121 cms (47.5")
- 6. **Bed Side Locker**
 - Made of Stainless Steel Top.
 - One Magnetic Catch Door.
 - One Open Shelf.
 - Optional with or without castors.
 - Epoxy Powder Coated finished.
 - Overall Length 43 cms (13.5")
 - Overall Width 33 cms (13")
 - Overall Weight 78 cms (31")
 - Sleep Deck Area 196 cm X 64 cm (76" X 25")
 - Net Weight 11.0 kgs
- 7. **Sputum Bowl**
- 8. **Bench**
 - Without Castors
 - Epoxy, powder coated finished.
 - Overall length 198 cms (78")
 - Overall width 76.2 cms (30")
 - Height of sleep deck 45.7 cms (18")
 - Safe Working Load 180 kgs (400 lbs.)
- 9. **Table S. Steel top**
 - With Crank Mechanism with S.S. top.
 - Height

99. Office Furniture

S.NO.	ITEM NAME
1	Executive Table
	Size 1200 x 2400 x750 (4' x 8')
	Top made by 45mm thick Doubling PB with Postform FR-BS-LB-L.
	* Sides made by 25mm thick Prelam PB with BSL.

	<p>* Modesty Panel made by 18mm thick Prelam PB with BSL.with one * Independent type with leveler. With one Sliding Door Side Cabinet Size 1200 x565x690mm having 45 mm top& having centrall lock mobile pedestal having two equal size &one filing drawer movement through telescopic channel ,SS handle &45 mm top size 450 x620 x690mm</p>
2	<p>Executive Table Size ;900 x 1800 x750 top made by 25mm thick PB with Postform BN-BS-LB-L. * Understructure made by 18mm thick Prelam PB with BSL. having centrall lock mobile pedestal having two equal size &one filing drawer movement through telescopic channel ,SS handle &18mm top size 400 x 485 x 685mm & With one Sliding Door Side Cabinet Size 1050 x420x 690mm having 25 mm top * Independent type with leveler. * Including all necessary fixing hardware.* All exposed edges covered with PVC edge banding</p>
3	<p>Executive Table Size ;900 x 1500 x750 (3'x5') top made by 25mm thick PB with Postform BN-BS-LB-L. * Understructure made by 18mm thick Prelam PB with BSL. having centrall lock mobile pedestal having two equal size &one filing drawer movement through telescopic channel ,SS handle &18mm top size 400 x 485 x 685mm & With one Sliding Door Side Cabinet Size 1050 x420x 690mm having 25 mm top * Independent type with leveler. * Including all necessary fixing hardware.* All exposed edges covered with PVC edge banding</p>
4	<p>Table Size ;900 x 1500 x750 (3'x5') top made by 25mm thick PB with Postform BN-BS-LB-L. * Understructure made by 18mm thick Prelam PB with BSL. having centrall lock mobile pedestal having two equal size &one filing drawer movement through telescopic channel ,SS handle &18mm top size 400 x 485 x 685mm * Independent type with leveler. * Including all necessary fixing hardware.* All exposed edges covered with PVC edge banding</p>

5	<p>Table ;900 x 1800 x750 (3'x5')</p> <p>top made by 25mm thick PB with Postform BN-BS-LB-L.</p> <p>* Understructure made by 18mm thick Prelam PB with BSL. having centrall lock mobile pedestal having two equal size &one filing drawer movement through telescopic channel ,SS handle &18mm top size 400 x 485 x 685mm</p> <p>* Independent type with leveler.</p> <p>* Including all necessary fixing hardware.* All exposed edges covered with PVC edge banding</p>	Size
6	<p>Executive Chair (High Back)</p> <p>High Back Chair Hot pressed ply on seat &back wooden arms cladded on chrome plated torrison bar mechanism cushioned with upholstery cloth /Leatherite ,back bone supporter,five twin castor wheel wooden base cladded on steel,chair up& down through hydraulic system</p>	
5	<p>Executive Chair (Low Back)</p> <p>Low Back Chair Hot pressed ply on seat &back wooden arms cladded on chrome plated torrison bar mechanism cushioned with upholstery cloth /Leatherite ,back bone supporter,five twin castor wheel wooden base cladded on steel,chair up& down through hydraulic system</p>	
6	<p>Visitor chair</p> <p>Visitor chairFixed seat & back chair of Pu moulded cushion used in seat &back ,Pu arms rest mm single pipe Stype 14 gauge black round CRC pipe frame Upholstry fabric</p>	
7	<p>Office chair Chair</p> <p>Seat & back chair of Pu moulded cushion used in seat &back ,Pu arms rest mm single pipe Stype 14 gauge black round CRC pipe frame Upholstry fabric</p>	
8	<p>Sofa Set fully cushioned (3+1+1) with metal legs with arms duly cushioned with upholstery cloth /Leatherite</p>	
9	<p>Steel Almiraha made of steel sheet of 20 swg with 4 shelves Front two door opening with locking provision with five compartment duly Powder Coated Size 1980x 900 x 485mm</p>	
9	<p>Centre Table wooden teakwood structure having 12 mm glass on top Size 1200 x1200 x400mm(LxWxH)</p>	
10	<p>Student Table</p> <p>frame made of Ms pipe of 32 mm of 18 swg with with postformed top of 25 mm of half round Powder Coated frame Size : 900 x 600 x750 mm</p>	
11	<p>Student Chair</p> <p>Made of Steel tubular frame with 18 mm dia CRC pipe with 1.6 mm wall thickness 12mm wooden moulded seat without arms fixwd with ply nut Chrome Electroplated Plated frame</p>	

12	<p>Cot frame made of Ms pipe of 50x25mm & 25mm square of 18 swg pipe with 12 mm commercial ply powder coated frame size : 1800 x 900 x 450mm</p>
13	<p>Chair made of stainless steel tubular frame & chrome electroplated with wooden sheet with 16" outer dia</p>
14	<p>Dining Table Size 1500 x 900 mm (6'x10') Tubular frame made of 60mmx35mm & 32 mm round pipe powder coated with top 25mm thick PB with Postform BN//BFR-BS-LB-L.</p>
15	<p>Dining Table Size 1800 x 900 mm (6'x10') Tubular frame made of 60mmx35mm & 32 mm round pipe powder coated with top 25mm thick PB with Postform BN//BFR-BS-LB-L.</p>
16	<p>Dining Chair made of stainless steel tubular frame & chrome electroplated with wooden sheet with 16" outer dia</p>
17	<p>Multi Purpose Steel Locker Made of ms sheet made of SWG 20 & 22 with 8 lockers with separate door colour as per approval Size 1980 x 840 x 480 mm Powder Coated Size 1980 x 1200 x 485mm</p>
18	<p>Student Chair Made of Steel tubular frame with 18 mm dia CRC pipe with 1.6 mm wall thickness 12mm stitched cushion moulded seat without arms fixed with ply nut Chrome Electroplated Plated frame</p>
19	<p>Student Table frame made of Ms pipe of 32 mm of 18 swg with with postformed top of 25 mm top 25mm thick PB with Postform BN//BFR-BS-LB-L. Powder Coated frame Size : 900 x 600 x 750 mm</p>
20 a.	<p>Multiseater frame with arms with chrome plated frame with wooden seat & back perforated with wooden arms legs chrome plated</p>
b	<p>Multiseater frame with arms with chrome plated frame metal arms & legs with perforated metal seat & back powder coated & chrome plated</p>
c	<p>Multiseater frame with arms with chrome plated frame metal arms & legs with cushioned seat & back powder coated & chrome plated</p>

