

**LIST OF PURCHASE OF ELECTRO-MEDICAL EQUIPMENT
(ADP SCHEME 2019-20)**

Equipment Detail	Payment Mode	Total Estimated Price	Quantity
<p>(a) Anesthesia Machine (Qty 03)</p> <ul style="list-style-type: none"> ▪ Anesthesia machine to administer anesthetic agents in precise control and flow manner for Adult, pediatric and Neonates. ▪ Mobile 3-gases O2/N2O/AIR. <p>It must comprise of the following components:</p> <ul style="list-style-type: none"> ▪ Non-interchangeable pipeline inlets. ▪ Pipeline & cylinder gauges for O2, N2O and Air. ▪ Central gas/ electronically driven unit. ▪ Pin index cylinder yokes for Oxygen & N2O (One each), as backup. ▪ Pin index type Cylinders will be provided (2xO2 and 2xN2O: BS standard). ▪ Gas outlet and O2 flush control. ▪ 1 auxiliary O2 outlet. ▪ Two Lockable castors. ▪ Stainless steel/fiber work surface. ▪ Absorber bag support arm. ▪ Three gas flow meters for precise control and monitoring of gases. ▪ Drawer unit 4-6" high. ▪ Scavenging system Passive / Active type. <p>ANESTHESIA VENTILATOR:</p> <ul style="list-style-type: none"> ▪ Anesthesia Ventilator with minimum 6" or more color LCD/TFT Screen. ▪ The ventilator shall be capable of ventilating adult and pediatric patients. The ventilator shall have following features as a minimum requirement: ▪ Volume Preset Time Cycled Ventilator (IPPV Mode) ▪ Pressure Controlled and pressure support Modes ▪ Breathing Mode Selection (Standby / 	CIF	20.00 M	3

- Volume / Spontaneous and Pressure)
 - Built in Oxygen Monitor
 - Inverse I:E ratio Capability
 - Gas Specific Input Connectors (Air or Oxygen ISO or ANSI Standards)
 - Tidal Volume from 5ml to 1400 ml
 - Rate or Frequency 4 to 60 bpm
 - PEEP (4 to 20 cm H2O)
 - Inspiratory Pressure Limit
 - Power Supply 220 VAC, 50 Hz
 - Battery Backup (60 Minutes or more)
 - Low / High FiO2 Alarm Incorrect Rate or Ratio alarm
 - Mains Failure alarm
 - Low battery alarm advance indication
 - Hypoxic device guard.
 - Pressure and Volume (Spirometry) Loops / curves .
 - High / Low pressure alarm.
 - The ventilator shall be supplied with complete drive hose and power cable.

Note: Annual maintenance kits (needs to replace annually) will be included in the warranty period as per manufacturer's guidelines.

The warranty of equipment will be including batteries, oxygen sensor and flow sensor.

Anesthesia Accessories

- Power outlet with 3/4 socket outlets to connect the auxiliary equipment.
- CO2 absorber 800 – 1,500 gm or better complete with valve for bag/ventilator
- Manometer
- Breathing bags
- Re-usable Silicon Autoclave able breathing circuit (Adult, Peads 01 each)
- Mounts and Y-piece.

Additional breathing hose and connector with 03 adult & 03 pediatric bellows.

Optional for Machine:

- Two pre calibrated Vaporizers of Isoflurane & Sevoflurane vaporizer, temperature and flow compensated.

Optional Monitoring:

- Vital sign monitor.
- Size of minimum 12" or more for display of vital sign parameters.

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- Measurement of ECG 5 leads.
- NIBP with re-usable single hose cuff for children and adults
- SpO2 with re-usable cable and sensors for children and adults size (Massimo Type/Equivalent motion tolerance technology).
- HR
- Temperature with nasal probe.
- Respiration
- EtCO2 (main or side stream)
- Dual Channel IBP
- 220V, 50 Hz operated.

Note: Vital sign Monitor must be supplied by the same manufacture and must be Compatible with the machine and Ventilator.

Monitor Accessories:

- 2 NIBP Cuff each 2 Spo2 probe
- 2 temperature probe
- IBP Leads
- 2 ECG Leads

(b) Anesthesia Workstations (qty 02)








- Anesthesia work station machine to administer anesthetic agents in precise control and flow manner.
- The machine will equip to monitor the vital sign parameters and anesthetic agents during operation.
- It should stay on the theatre mobile use housing
- 3-gases O2/N2O/AIR.
- Provision of communication port for sharing and transfer of data.
- Unit shall comprise of the following components:
 - Electronically/digitally control, mixing and monitoring of anesthetic gases (O2, AIR, and N2O) both by digits as well as virtual tubes.
 - Built-in illumination system.
 - Non-interchangeable pipeline inlets
 - Pipeline & cylinder gauges for O2, N2O and AIR
 - Central gas/ electronically driven unit.
 - Pin index cylinder yokes for Oxygen & N2O (One each), as backup.

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- Pin index type cylinders will be provided with the unit (2xO2 and 2xN2O: BS standard)
- Gas outlet and O2 flush control
- 1 auxiliary O2 outlet (preferably electronics).
- Two Lockable castors
- Stainless steel/fiber work surface
- Absorber bag support arm
- Integrated heated breathing system.
- Three gas electronic digital flow meters for precise control and monitoring of gases.
- Drawer unit 5-6" high.
- Power outlet with 3/4 socket outlets to connect the auxiliary equipment.
- CO2 absorber 800 – 1,500 gm or better with changeable during the surgery.
- Complete with valve for bag/ventilator, manometer, 0.5, 1.0, 1.5, 2 & 3 L breathing bags,
- Breathing tube (adult and paed).
- Mounts and Y-piece.
- Additional breathing hose and connector (adult and paed).
- Scavenging system passive / active type.
- Suction system.

ANESTHESIA VENTILATOR:

- Anesthesia Ventilator with minimum 12" or more LCD /TFT Screen.
- The ventilator shall be capable of ventilating Neonates /pediatric patients/Adult Patients) The ventilator shall have following features as a minimum requirement:
 - Volume Preset Time Cycled Ventilator (IPPV Mode)
 - Manual, spontaneous; Volume Mode (IPPV) / CMV
 - Pressure Mode (PCV)
 - Pressure Support (PS)
 - Pressure Control (PC)
 - Pressure Controlled and pressure support Modes
 - Synchronized volume controlled ventilation (SIMV) with PS
 - PS with apnea back up
 - Breathing Mode Selection (Standby / Volume / Spontaneous and Pressure)
 - Built in Oxygen Monitor
 - Inverse I:E ratio Capability
 - Gas Specific Input Connectors (Air or Oxygen

<p>ISO or ANSI Standards)</p> <ul style="list-style-type: none"> ▪ Tidal Volume from 5ml to 1400ml. ▪ Rate or Frequency 4 to 60 bpm ▪ PEEP 3 to 20 cm of H2O. ▪ Inspiratory Pressure Limit ▪ Pressure and Volume (Spirometry) Loops / Curve. ▪ Oxygen / Electronically Driven ▪ Power Supply 220 VAC , 50 Hz ▪ Battery Backup (60 Minutes or more) ▪ Low / High FiO2 Alarm ▪ Incorrect Rate or Ratio alarm ▪ Mains Failure alarm ▪ Low battery alarm. ▪ Oxygen Sensor: Paramagnetic / Galvanic /Equivalent ▪ Hypoxic Device. ▪ The ventilator shall be supplied with complete drive hose and power cable. <p>Note: Annual maintenance kits (needs to replace annually) will be included in the warranty period as per manufacturer's guidelines.</p> <p>Optional: (mandatory to quote)</p> <p>MONITORING :</p> <ul style="list-style-type: none"> ▪ Modular Vital sign monitor. ▪ Size of minimum 17" touch screen or more for display of vital sign parameters of neonates, infants and adults. ▪ Measurement of ECG ▪ NIBP with re-usable single hose cuff for neonates, child and small adults ▪ SpO2 (Massimo Technology / Equivalent motion tolerant technology) with re-usable cable and sensors for neonates, infant, adult and small adults sizes (three for each). ▪ HR ▪ Temperature with nasal probe Respiration ▪ Four Channel IBP ▪ Anesthetic Agent monitoring (with monitor or with in the anesthesia machine) ▪ EtCO2 main / side stream (/Complete with all sensors probes, reusable). ▪ Provision of communication port for sharing and transfer of data. ▪ 220V, 50 Hz operated. ▪ Battery backup of at least 60 minutes ▪ Online UPS with backup of 30 minutes for 			
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complete unit.

Note: Monitors must be supplied by the same manufacturer and must be compatible with the machine and ventilator.

The warranty of equipment will be including batteries, oxygen sensor, all kinds of filters and flow sensor.

ACCESSORIES:

- 2 NIBP Cuff each,
- 2 SpO2 probe,
- 2 temperature probe
- Skin Probe
- 2 ECG Leads
- Four Channel IBP leads.

Optional Accessories for Anesthesia Machines:

Two pre calibrated Vaporizers of Isoflurane & Sevoflurane vaporizer temperature and flow compensated.

Cardiac bypass mode / HLM / Spontaneous Mode in machine .

Note:

The bidders are allowed to participate in tender for above machines and only separate financial offer will be accepted, further the procuring agency may increase or decrease the quantity of above mentioned machines according to availability of budget.

Heart Lung Machine with Online Arterial & Venous Line Monitoring

CIF

50.00 M

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- 05 Pump Complete Modular Pumps console with all Modular Parameter
- 04 Single roller pump+1 Twin Pump or Two Small roller Pump
- Dia. Pressure module
- Temperature module
- Monitor interface module
- Power supply module
- battery backup minimum 90min.
- Level sensor
- Ultrasonic Bubble detector
- Flexible Led Lamp
- Mechanical /Electronic Gas blender
- Cardioplegia Monitoring Unit
- System Control Panel
- Venous occluding clamp.

05- Pump Console:

- Heart Lung machine should have modular system.
- The Console should have 05 pump attachments.
- Smooth stainless steel, painted metal and aluminum.
- Entire system should operate on battery system for a minimum of 90 Minutes For arterial pump battery backup should be 180 minute or more.
- Switch over from main power to battery backup should be automatic and immediate.
- Battery Unit should be built in to the pump base.
- It should recharge automatically when the system is operating with main power supply.
- Pump-console should have single cable connection from external power supply.
- Provision for a connection to PC.
- 24Volt operated socket for all pumps to avoid risk.
- Should have hand crank facility as a safety feature with each pump
- All the pump should have facility of pulsatile mode

System Control Monitor: Should display follow below components.

- Pulsatile operation display.
- Pressure monitoring display.
- Temperature monitoring display.
- Timer system display.
- Battery voltage display.
- Safety buttons
- Alarm for shut down for any pump

Cardioplegia monitoring unit:

- It should display Volume ratio, timer, temperature, and pressure of full control of independent cardioplegia line.
- Master follower function and pump to stop

Single Roller Pump:

- The unit should have 5-pump compactly arranged with Universal connection
- Monitoring flow rates in LPM & RPM should be digitally display on the pump or equivalent
- Modules pump should have easy

access connection for interchanging the pump with console.

- Pump should be peristaltic for durability and convince of handling.
- Roller pump should have a self-diagnostic circuit with provision to detect and display critical alarm conditions
- Each individual roller pump should be capable of running independently.
- Each Pump should operate onto 24 Volt.
- Roller Pump Range: 0-250 RPM
- Display of all pump condition on pump.
- Calibrations preset for ¼, 3/8 & ½ tubing.
- It should have Reverse flow capability.

PRESSURE MONITOR: (Four pressure module)

- Facility to monitor pressures.
- Along with necessary pressure transducers Kit, cables and domes reusable, with accurate digital display and alarm facilities audio and visual.
- It should have trend indicator and trend readout.
- Pole mounts for transducer Kit.

TEMPERATURE MONITOR:

- 04 temperature displays on Control panel for patient monitoring and for cardioplegia monitoring with digital display in Celsius.
- It should have trend indicator and trend readout.

Air Emboli Module Level Sensor:

- With alarm settings. Should be able to provide both alert alarm for audible and visual alarms or low blood level alarm
- Level sensor pads 100 pcs

Air Bubble Detector:

It should be ultrasonic in nature.

Micro -bubble detection: Yes

Bar Leds, sensor fault, override facility.

Sensor should be compatible with all tubing sizes.

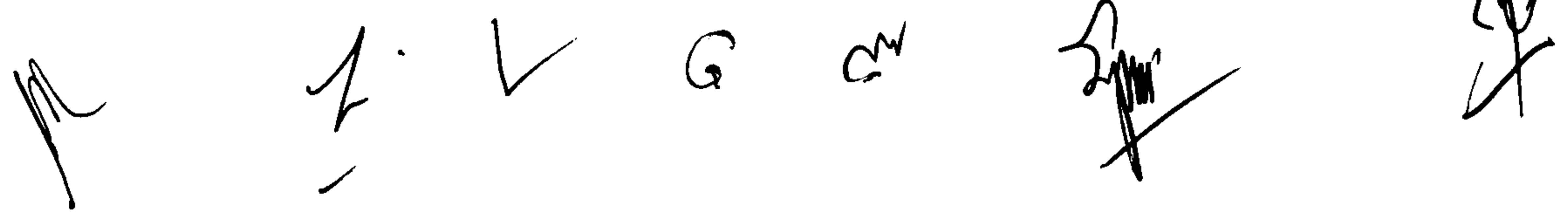
TIME MONITOR:

Minimum 3 time displays.


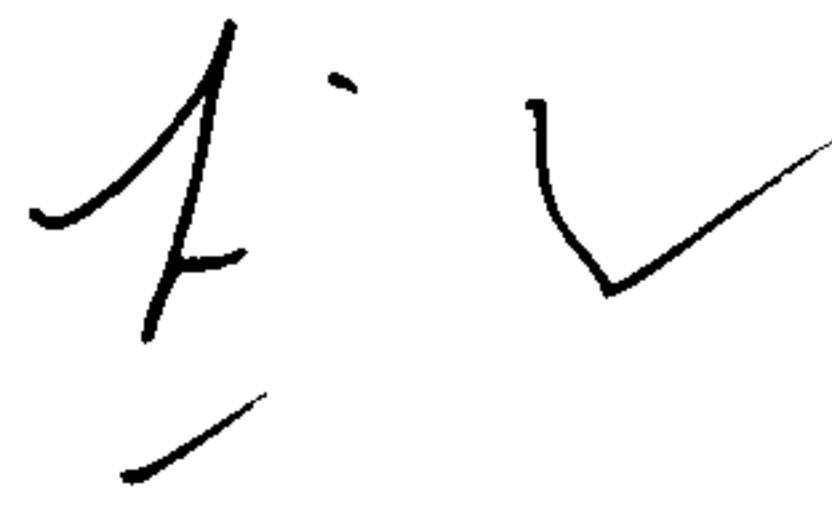




With stop, reset and start function

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<p>Online Arterial & Venous Line Monitoring</p> <p>LCD display of 10" or better touch screen monitor</p> <p>Monitoring of Arterial Line:</p> <p>Measurement method for partial oxygen Measurement method for temperature Measurement of Hemoglobin, Arterial partial pressure of oxygen, Arterial temperature. PaO₂,</p> <p>Monitoring venous line:</p> <p>Measurement method for partial oxygen Measurement method for temperature Measurement of Venous line, Hemoglobin, hematocrit, SvO₂</p> <p>Interface for PC Connection Rs-232 Input/output USB Connection for Printer</p> <p>Accessories:</p> <ul style="list-style-type: none"> • Venous probe • Arterial probe • Venous temperature sensor • Arterial Temperature sensor <p>System should be complete with all accessories</p> <p>The bidder will provide a comprehensive warranty of five years from the manufacturer exclusively for Faisalabad Institute of Cardiology, Faisalabad.</p>			
<p><u>Hypo Hyper Thermia Unit</u></p> <p>The Hyper hypothermia unit designed to supply temperature controlled water to oxygenator heat exchangers and cooling blankets.</p> <p>The feed water temperature selected on a temperature controller in the range 5-40 °C</p> <p>One/ Two external circuits can be connected each with its own flow control</p> <p>The flow is maintained by a built in pump</p> <p>The temperature control is obtained by a three way motor valve Selecting water from a cooling or a heating vessel as required,</p> <p>In the cooling vessel a temperature of +2 °C is constantly maintained by a refrigeration system</p>	CIF	12.00 M	2



<p>Heating vessel contains an electrical heater which is automatically switched, as and when required. Hermetically sealed compressor ½ HP. Temperature accuracy: +/-0.5 deg/ C. Initial cooling capacity 2100 kj/h (500 Kcal/h), Continuous cooling cap 2800 kj/h (670 Kcal/h), Circulating system: Pump, Flow capacity (Total) 10-16 liters/min,</p> <p>Accessories: System should be complete with all standard accessories Optional: Blanket</p>			
<p><u>Sternum Saw (Electric)</u> Operated by a rechargeable battery, Light weight and handy. Keyless saw blade coupling, May have even weight distribution for ideal balance, Electronic parts may be integrated into battery pack, The system should not require sterilization of the battery. Battery should capable for multiple surgeries, The Saw must be easily sterilizable by autoclaving and plasma sterilization, It should have Battery charger for changing indications the batteries, Sterilization Basket, 200 x Sternum Saw Blades</p> <p>Accessories: Complete with all standard accessories</p> <p>Optional: rechargeable battery</p>	CIF	7.5 M	3
<p><u>Intra Aortic Balloon Pump</u> Self contained Fiber optic based intra aortic balloon pump having mobile console with ECG, Amplifier with possible selection 5 leads arterial blood pressure amplifier, Discriminative Triggering circuit to command balloon actions on patient's ECG arterial blood pressure curve or internal simulator 80 BPM. Color graphic displays at least of 10" for display of arterial and pressure heart rate balloon volume used and alarm conditions with trouble shooting procedures. Wave form displays for ECG, arterial pressure and balloon pressure on three channel memory type oscilloscope. Fail safe system. V Pacing switch. Progressive viewing sequence. Integrated battery power supply to take patient to catheterization labs, operating theatre or other hospital: 60 minute autonomy. CO2 / helium tank wrench. 5 lead ECG cable, male connector pressure, transducer, adapter, chart recorder. Automatic in vivo calibration, Automatic helium refilling, Control of deflation point in automatic mode 220 V, 50 Hz, Ac. System should be complete to display all the parameters.</p> <p>Accessories: Complete with standard accessories, One spare set of patient cable, Reusable sensors qty 05 The bidder will provide a comprehensive warranty of five years from the manufacturer exclusively for Faisalabad Institute of Cardiology, Faisalabad.</p>	CIF	20.00 M	02

<p>CENTRAL STERILE SUPPLY DEPARTMENT</p> <p>WASHING /DISINFECTION / DRYING UNIT (Qty 01) Microprocessor controlled automatic powered vertical down sliding two glass doors type. Washing chamber, washing arms, preheating tanks and water filters made of high quality stainless steel AISI 316 L, Light inside of chamber, frame made of stainless steel AISI 304 Touch screen/panel display on loading and display on unloading side with integrated printer. External steam heated for Automatic rinsing, washing, disinfecting and drying including integrated electric element as backup heating. Capable of washing internal and external surface of items such as instruments, glassware, tubing, syringes, hollow wares etc. Stainless Steel construction. Floor model chamber size 15-18 DIN basket Capacity. 2 dosing pumps of chemical products complete with flow meters and sensor. 3-10 standard pre-set cycle programs, 5 service programs and Fast/short cycle disinfection program (around 30 min).</p> <p>The unit should be complete with baskets, trays, and stands for washing /disinfection of the items mentioned above. The unit should have complete exhaust air condenser for outgoing air with condensate drain. Operation 380-400V.</p> <p>ACCESSORIES</p> <ul style="list-style-type: none"> • MIS/Lap instruments cart • Instrument trays for OP Cart • Rack for 25 shoes • Wash cart for Instrument containers • Transfer trolleys for cart. (qty 02) <p>HEAVY DUTY STEAM STERILIZER (Qty 02) High pressure Steam Sterilizer each with external steam supply as primary source with integrated steam generator as backup. Fully automatic, programmable, microprocessor type. Touch screen colored display and integrated printer. Automatic motorized/pneumatic two doors pass through system. Time cycled, working pressure 32 psi. Safety interlock. Temperature & Pressure recorder. Chamber pressure indicator. Cycle indicator to determine the phase of sterilization cycle. Program/Cycle selection. Complete with standard accessories and removable shelves, capable of taking both packets and containers of all standard sizes. Chamber capacity 8 STU, rectangular shape. Chamber, jacket and doors made of AISI 316 L/Ti. The system complete with built-in water saving system, automatic heat exchanger and Air detector. One loading / unloading trolleys and two loading carts compatible with system.</p>	CIF	45.00 M	As mentioned in specifications
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UPS of suitable capacity with minimum 15 minutes for Controller cum display for monitoring and controlling of parameters during power shedding provided/ installed by the manufacturer.

MEDIUM STEAM STERILIZER (Qty 01)

High pressure Steam Sterilizer each with external steam supply as primary source with integrated steam generator as backup.

Fully automatic, programmable, microprocessor type Touch screen colored display and integrated printer. Automatic motorized/pneumatic two doors pass through system. Time cycled, working pressure 32 psi. Safety interlock. Temperature & Pressure recorder. Chamber pressure indicator. Cycle indicator to determine the phase of sterilization cycle. Program/Cycle selection.

Complete with standard accessories and removable shelves, capable of taking both packets and containers of all standard sizes. Chamber capacity 04 STU, rectangular shape. Chamber, jacket and doors made of AISI 316 L/Ti. The system complete with built-in water saving system, automatic heat exchanger and Air detector. One loading / unloading trolleys and one loading cart compatible with system.

UPS of suitable capacity with minimum 15 minutes for Controller cum display for monitoring and controlling of parameters during power shedding provided/ installed by the manufacturer.

ELECTRONIC AUTOCLAVE (Qty 01)

Fully automatic, programmable, microprocessor type. Touch screen colored display and integrated printer. Automatic motorized/pneumatic single door system. Time cycled, working pressure 32 psi. Safety interlock. Temperature & Pressure recorder. Chamber pressure indicator. Cycle indicator to determine the phase of sterilization cycle. Program/Cycle selection. Complete with standard accessories and removable shelves, capable of taking both packets and containers of all standard sizes. Chamber capacity 01 STU, rectangular shape. Chamber, jacket and doors made of AISI 316 L/Ti. The system complete with built-in water saving system, automatic heat exchanger and Air detector.

one loading / unloading trolleys and one loading cart compatible with system.

UPS of suitable capacity with minimum 15 minutes for Controller cum display for monitoring and controlling of parameters during power shedding provided/ installed by the manufacturer.

REVERSE OSMOSIS SYSTEM (qty 01)

RO system should be compatible with the CSSD equipment requirement and in accordance with the quality of the local water where it is being installed. It

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should have imported parts that may be locally assembled.

PAPER SEALING MACHINE (Qty 01)

Microprocessor controlled automatic heat sealer for sterilization bags and pouches. Stainless Steel body with printing mechanism. Adjustable temperature up to 200 degree Centigrade, Speed approx. 10m/min.

CUTTING DEVICE (Qty 01)

For storage and preparation of paper/Plastic bags in rolls. The cutting knife is made of tempered stainless steel and is self-grinding, Size 700-1000mm.

TRANSPORT AND DISTRIBUTION TROLLEY (Qty 02)

Distribution trolley, 03 shelves made of stainless steel, size 700x500x800mm³. (W x D x H),

Terms & Conditions for CSSD Equipment:

- For CSSD installation; copper/ SS pipes will be used as per standards. The complete flooring of CSSD with PU anti-bacterial sheet, ceramic tiles on walls, dumpy false ceiling will be installed. The partitioning will be made with 2mm Aluminum sheet where required. Renovation of the CSSD department will be the responsibility of the successful bidder.
- Country of manufacturer & origin should be USA / Europe / Japan of complete CSSD equipment except RO system,
- The bidder will provide a comprehensive warranty of five years from the manufacturer exclusively for Faisalabad Institute of Cardiology, Faisalabad.
- The bidder will provide a declaration from the manufacturer exclusively for Faisalabad Institute of Cardiology, Faisalabad for the availability of spare parts for five years after warranty period.

Temporary Pace Maker

Temporary pacemaker for cardiac pacing
OPERATING FEATURES and CHARACTERIST
Asynchronous and demand mode operation
Sensing: light indication
Pacing: light indication
Calibrated rate, output and sensitivity control
Defibrillator protected

PARAMETERS:

Stimulation control of current output upto 2
Pulsing rate control adjustment upto 150 pp
Sensitivity control upto 8mV
Pulse width 1.5 m sec
Asynchronous and demand mode switch

INDICATORS:

Battery, status light indication

FOR

12.00 M

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<p>OTHER FEATURES:</p> <p>Portable</p> <p>Accessories including case and cables</p> <p>OPERATING REQUIREMENTS:</p> <p>Standard alkaline battery operation</p> <p>Backup operation during battery change.</p> <p>Accessories:</p> <p>Complete with standard accessories</p>			
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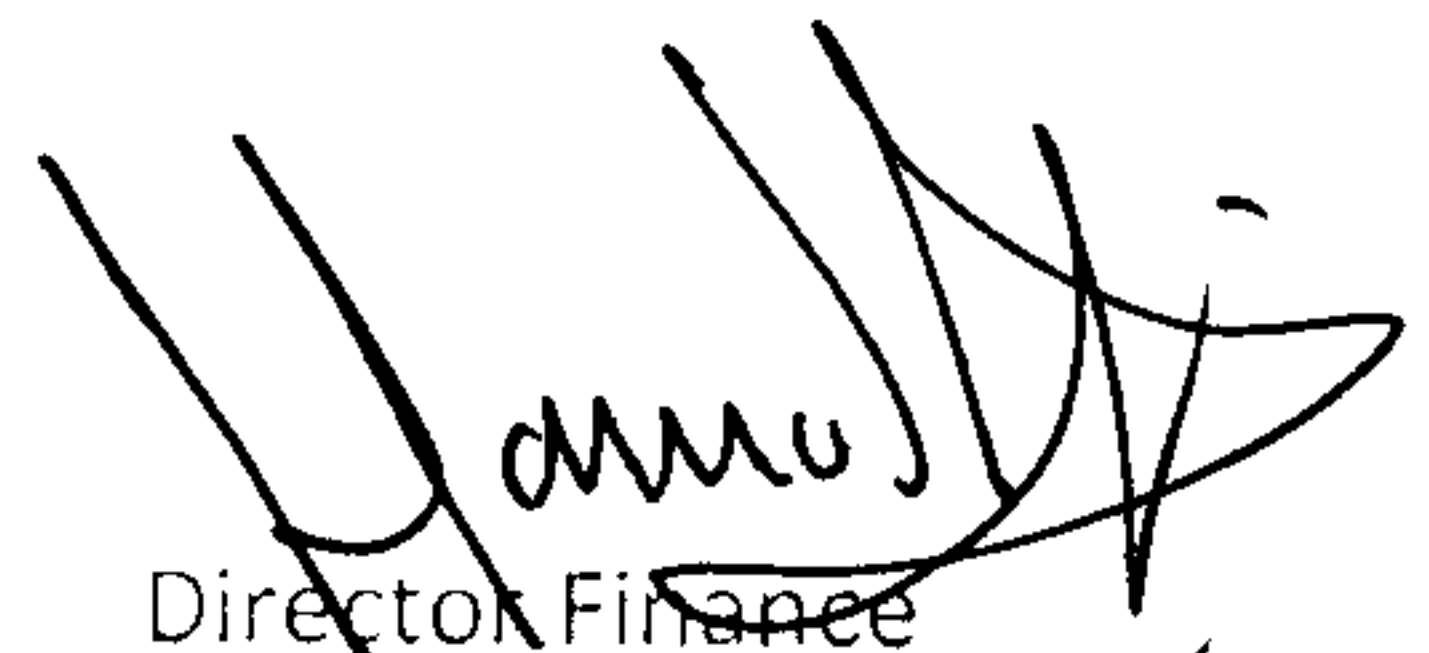
Electronic Equipment Care Taker
Faisalabad Institute of Cardiology
Faisalabad.



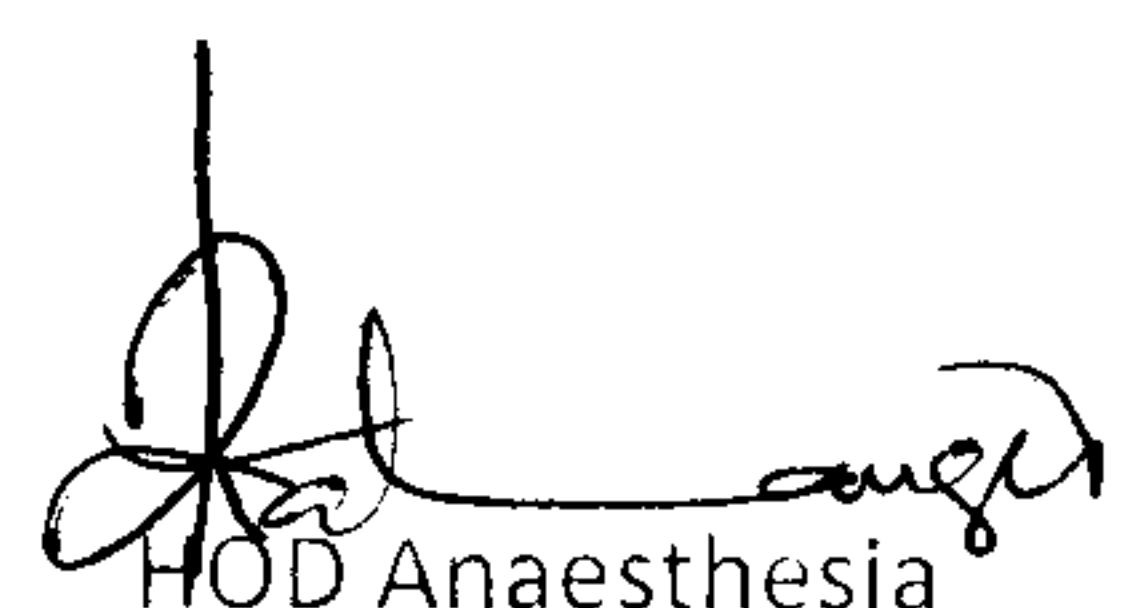
DMS (Purchase)
Faisalabad Institute of Cardiology
Faisalabad.



AMS (Purchase & Stores)
Faisalabad Institute of Cardiology
Faisalabad.



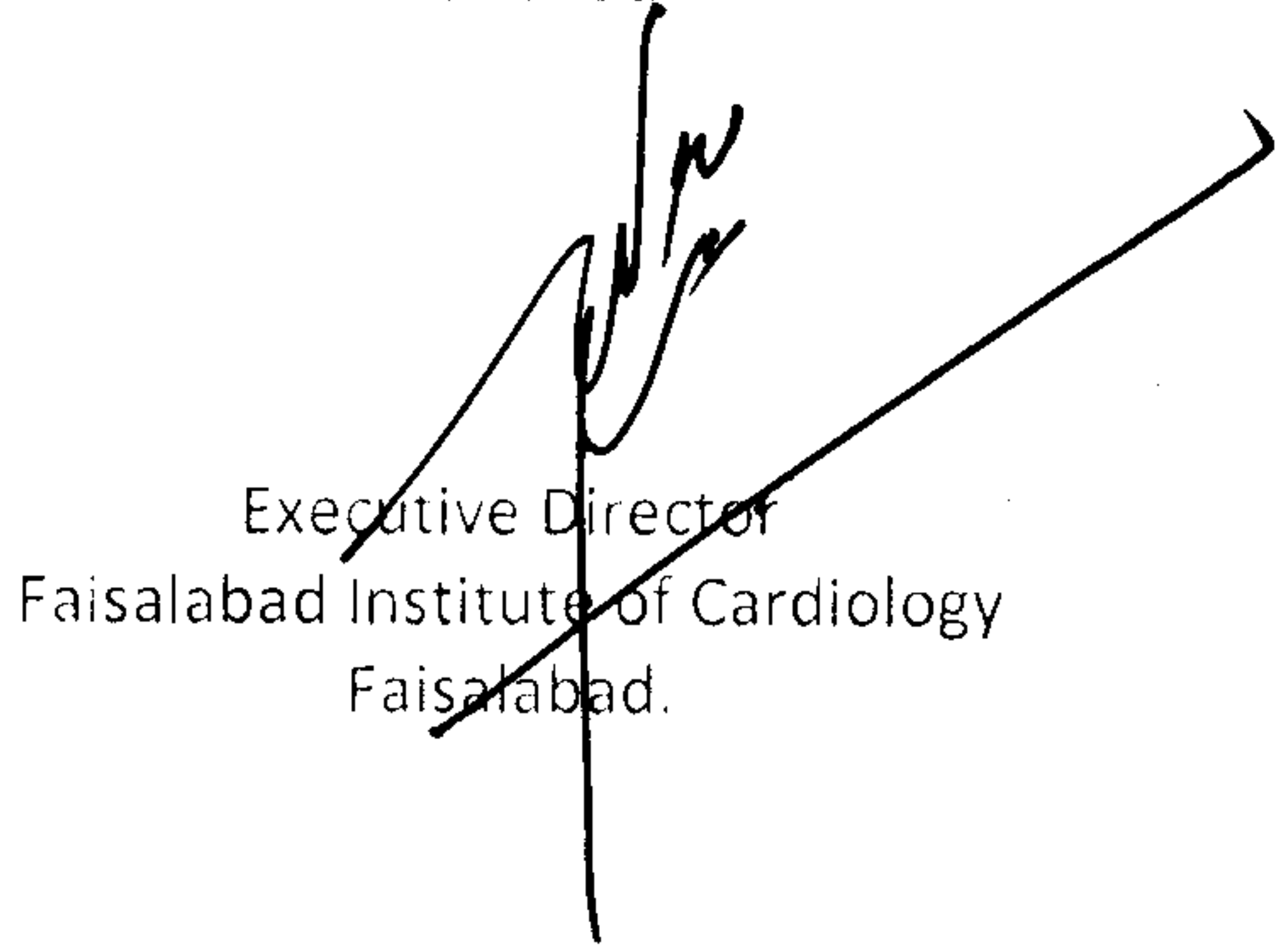
Director Finance
Faisalabad Institute of Cardiology
Faisalabad.



HOD Anaesthesia
Faisalabad Institute of Cardiology
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Medical Superintendent
Faisalabad Institute of Cardiology
Faisalabad.



Executive Director
Faisalabad Institute of Cardiology
Faisalabad.