

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

Sr / No	Equipment Detail	Payment Mode	Total Estimated Price	Quantity
1	<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: 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:</p> <ul style="list-style-type: none"> ▪ Volume Preset Time Cycled Ventilator (IPPV Mode) ▪ Pressure Controlled and pressure support Modes ▪ Breathing Mode Selection (Standby / 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) 	CIF	20.00 M	3

Handwritten signature

Handwritten signature

Handwritten signature

Handwritten checkmark

Handwritten signature

Handwritten signature

- 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.
- 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).

[Handwritten signatures and initials in blue ink]

- 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.
 - 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

02

R

L

QW

V

2/11/2

[Handwritten signature]

- 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).s).
- Mounts and Y-piece.
- Additional breathing hose and connector (adult and paed).s).
- 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 ISO or ANSI Standards)
- 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 /

M

A.

Qm

L

[Signature]

[Signature]

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.

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

Optional: (mandatory to quote)

MONITORING :

- 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 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

	<p>batteries, oxygen sensor, all kinds of filters and flow sensor.</p> <p>ACCESSORIES:</p> <ul style="list-style-type: none"> ▪ 2 NIBP Cuff each, ▪ 2 Spo2 probe, ▪ 2 temperature probe ▪ Skin Probe ▪ 2 ECG Leads ▪ Four Channel IBP leads. <p>Optional Accessories for Anesthesia Machines:</p> <p>Two pre calibrated Vaporizers of Isoflurane & Sevoflurane vaporizer temperature and flow compensated.</p> <p>Cardiac bypass mode / HLM / Spontaneous Mode in machine.</p> <p>Note:</p> <p>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. Country of manufacturer should be USA or Europe or Japan</p>			
02	<p>Heart Lung Machine with Online Arterial & Venous Line Monitoring</p> <ul style="list-style-type: none"> • 05 Pump Complete Modular Pumps console with all Modular Parameter • 04 Single roller pump+1 Twin Pump or Two Small roller Pump • Dual 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. <p>05- Pump Console:</p> <ul style="list-style-type: none"> • Heart Lung machine should have modular system. • The Console should have 05 pump attachments. 	CIF	50.00 M	2

- 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

MR

h. Dm

✓

[Handwritten signature]

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

Optional:

Online Arterial & Venous Line Monitoring

	<p>LCD display of 10" or better touch screen monitor</p> <p>Monitoring of Arterial Line: 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: 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</p> <ul style="list-style-type: none"> • USB Connection for Printer <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>Note: The bidder will provide a comprehensive warranty of five years from the manufacturer exclusively for Faisalabad Institute of Cardiology, Faisalabad. Country of manufacturer should be USA or Europe or Japan</p>			
03	<p><u>Cardiac Monitor</u></p> <p>(a) Modular Monitor (Qty 30) Modular bedside monitor for Adult / Peads. The monitor should take different modules for display of vital sign monitor of Adult & Peads,</p> <p>Operating Features and Characteristics: Non fade TFT, LCD color display Electro-surgical interference suppression/protection, Defibrillator protection, Freeze and cascade facility, Waveform traces speed; 25 & 50mm/sec. Screen size: min. 17" TFT, LCD color display. Capability to interface with LAN/WLAN for data transfer, Following Parameters should be in module form</p> <p>ECG: Numeric: heart rate. Waveform : Six Wave forms minimum, real time and freeze ECG trace</p> <p>NON INVASIVE BLOOD PRESSURE (NIBP): Method: Oscillometric principle Numeric: systolic, diastolic and mean pressure, Selectable auto inflate interval settings, Rising cuff/continuous pressure display</p> <p>TEMPERATURE:</p>	CIF	60.00 M	Quantity as mentioned in Specifications.

