List of Equipment and Technical Specification

SL No	Item	Qty
1	Medical Suction Machine complete plastic	4
2	Color LCD Ventilator Machine Portable	2
3	Cardiac Monitor - 7 parameters Vital Signs	4
4	Littman Stethoscope Classic 3	1
5	Adjustable Medical Examination Bed	4
6	Digital Blood Pressure monitor for Adult Arm	4
7	Medical Lab Dressing Table	4
8	Braun ThermoScan 7 IRT 6520	4
9	Medical Autoclave steam sterilizer	1
10	Advanced Comprehensive Dressing Surgery set kit	4
11	Medical regridgerator - Mini	1

Item 01: Suction Machine, Single Jar, Portable, Electrical

1. Mobile suction unit for use during surgical procedures for all types of aspirates
2. It shall be used to remove/evacuate soft tissue and fluids from various parts of the Body.
3. The suction unit shall possess (or exceed) the following technical specifications:
    - Single rotary pump type
    - Free air flow: up to 30 LPM or better
    - Vacuum pressure from 0 to 1 bar at least, with an easy to read negative pressure gauge indicating actual pressure.
    - Low noise operation (≤ 45 dB @ 1 meter)
    - Incorporated bacteria filter (specify type) with 10 numbers.
    - Suction jar should be autoclavable/serializable.
4. Standard accessories should be listed in details with part number and quantities.

Power Supply

- Power input to be 220-240VAC, 50Hz fitted 13Amp plug.

Standards, Safety and Documentation

- Should be FDA/CE marked
- User/Technical/Maintenance manuals to be supplied in English.
- List of important spare parts and accessories with their part number and costing.

Warranty: 12 months from date of installation and commissioning

Item 02: Ventilator, Universal, with Neonatal option

These units are intended for use in the ICU, NICU and other critical care areas as needed and should be mobile with locking mechanism. They should incorporate state-of-the-art advanced technology and highest available specs for their class at time of delivery. The below specifications and features shall be met or exceeded

General

1. Microprocessor controlled ventilator designed for use on critically ill patients ranging from Neonatal to adults.
2. The unit shall operate using central gas outlets for O2 and compressed air and provision for stand-alone type should also be included (with O2 from cylinders and inbuilt air compressor/Air Turbine)
3. Battery backup for at least 30 min, with automatic battery charging while unit is plugged into AC supply (whether the unit is in operation or stand by)
4. Color coded hoses (3 m each) for central gas supplies (O2 and compressed air) as well as connectors shall be included with the system. Connector type to be as per electro- mechanical standard
5. The unit shall be capable of network communication with other critical care monitoring devices and the Hospital Information System, including report generation capabilities.
6. Ventilator should be accompanied with paramagnetic/Chemical O2 sensor (Paramagnetic sensor will give high priority)

System Specifications

1. The unit shall incorporate a color LCD TFT touch screen with clearly distinguished separation between displayed information. All ventilation settings with corresponding alarm settings as well as monitoring data (numerical values as well as breathing curves and loops) shall be displayed.
2. The unit shall record patient trends for up to 48 hours
3. The ventilator shall be capable of automatically calculating ventilation parameters and corresponding alarm limits based on the patient's ideal body weight and other demographic information, with capability to accept (confirm) or easily modify any or all settings.
4. An active heater shall be incorporated to prevent condensation within the breathing circuit.
5. The ventilator shall operate in Pressure and Volume controlled modes (Assist /Control and Synchronized Intermittent Mandatory Ventilation), pressure support spontaneous breathing, CPAP and Apnea (mandatory pressure or volume controlled) as well as combination mode
6. Non-invasive ventilation and nebulization capability
7. Ventilation parameters to be continuously adjustable within suitable ranges for the specified patient groups also within suitable ranges for the small pre- mature neonatal patients
8. Adjustment shall be possible while the unit is operational, following operator confirmation (to prevent accidental tampering).
9. Adjustable parameters shall include:
    - Tidal volume, 2 – 2,000 mL
    - Inspiratory flow: 0 - 180 mL/min
    - Inspiratory pressure: 0 - 80 cm H2O
    - Respiration rate: 0 – 150 BPM
    - Inspiratory time: 0 – 3 sec and pause
    - Expiratory time: 0.2 – 20 sec
    - I:E ratio: 1:4 to 4:1
    - Inspiratory plateau: 0 – 3 sec
    - FiO2: 21 - 100 %
    - PEEP/ CPAP: 0 - 45 cm H2O
    - Pressure support: 0 - 45 cm H2O
    - Flow, pressure triggering and both
    - Manual breath
    - Pressure slope/ramp adjustment
    - Bias/base flow range: 1 - 20 L/min

1. Ventilation parameters and alarm limits shall be retained when switching between ventilation modes
2. Monitoring unit shall display all information related to ventilation settings, alarms, graphs and loops. Such information shall include:
    - Pressure and flow
    - PEEP, plateau pressure
    - Loops P/V, V/F, F/P
    - FiO2: 21 – 100%
    - Breath type (control, assist or spontaneous) and delivered breath phase (inspiration or exhalation)
    - Delivered O2 concentration and total respiratory rate
    - End expiratory / inspiratory pressures
    - Exhaled tidal and minute volumes, spontaneous minute volume and I:E ratio
    - Maximum and mean circuit pressures, compliance and resistance (on demand)
    - Simultaneous display of one or two waveforms shall be possible. The waveforms shall include: pressure-time curve, flow-time curve and volume-time curve as well as display of pressure/ volume loop with automatic inspiratory area calculation. Freezing of all waveforms shall be possible.
    - Metabolic monitoring shall be offered as option if available
    - Self-diagnosis (valve leak, sensor failure, etc.)
    - Digital values of: Mve, VTe, MVi, VTi, RR, Ppeak, Pmean, RR/VT (RSB), (MVi-MVe)/MVi (leak index), Tl/Ttot, Cstat, Rstat, FiO2, Insp. Peak flow, Resp. Peak flow, etc.
3. User adjustable alarm settings and multilevel audio-visual alarm indicators, with alarm volume control and suspension (regenerate after 2 minutes if condition persists), alarm log for quick review.
4. Alarming conditions shall include:
    - Clinical alarms: FiO2, Low minute volume, Low inspiratory pressure, High pressure, Loss of PEEP, Apnea, High continuous pressure/occlusion, Inverse IE, High respiratory rate, High minute volume, High PEEP, etc.
    - System / equipment alarms: Breathing circuit disconnect, Gas supply failure, Power failure, Ventilator inoperative, Low battery, Self-diagnostics, etc

Safety

1. The system shall incorporate extensive safety features such as:
    - System self-test for electronic and pneumatic components on startup (including fully automated compliance and leak tests as well as automatic calibration of all sensors), O2 and compressed air fail alarm, power fail and low battery alarms (battery operation), etc.
    - Dynamic compliance correction and auto compliance checking after replacement of patient hoses
2. Interface to central station alarm or nurse call system shall be offered

Accessories list to be supplied:

- Reusable adult breathing circuit with heater wire: Qty 4
- Reusable pediatric breathing circuit with heater wire: Qty 4
- Single use adult breathing circuit: Qty 20
- Single use pediatric breathing circuit: Qty 20
- Single use Neonatal breathing circuit: Qty 30
- Bacterial Filter: Qty 50
- HME Filter: Qty 30
- Flow sensor reusable (if Available, Heat Sterilizable): Qty 2
- Flow sensor single use: Qty 20
- Test Lung: Adult and Neonatal
- Heated humidifiers (Fisher and Paykel latest model or similar) shall be included. The offer shall include all accessories and parts necessary for the installation, mounting and full functioning of the humidifiers for all ranges of patients.

All necessary accessories and consumables for the start and functioning of the equipment has to be supplied.

Power Supply

- Power input to be 220-240VAC, 50Hz fitted 13Amp BT Type plug.

Standards, Safety and Training

- Should be FDA approved and/or CE marked

- Application training must be provided to the users.
- Manufacturer standard and Certified biomedical technical must be given to Biomedical Engineers within 6 Months of installation.

Documentation

- User/Technical/Maintenance manuals to be supplied in English.
- List of important spare parts and accessories with their part number and costing.

Warranty:

- **12 months from date of installation and commissioning**

Item 03: Patient Monitor, Capnography, Wall Mount

1. Easy to use, light weight unit suitable for adult and pediatric patients
2. Monitor should work on mains and built-in rechargeable internal batteries upto 4-5 hrs of monitoring.
3. Audible and visual alarms for;
    - Excessive cuff pressure
    - Cuff leakage
    - High/low pulse rate
    - Sensor off
    - Lead off
    - Sensor disconnected
    - Operational Alarms like low battery, etc
    - High/Low Systolic, Diastolic and Mean pressure
    - High/Low- Temperature, Saturation, Hr. cO2, AwRR and Respiration
    - Low battery, etc
4. Large (atleast 10" Diagonal) LCD display-Graphical display of ECG, Pulse NIBP and SpO2 trends with 4 simultaneous traces.
5. Alphanumeric display of heart rate, SpO2 and pulse rate
6. User friendly touch screen to enter patient data and selecting operational functions.
7. Incorporated with advanced signal processing algorithms for reliable operation even low perfusion, signal interference and during patient motion.

8. Built in thermal printer
9. Parameters: - **ECG (12 lead)**
    - Monitor shall simultaneously display one or two channels of ECG at any given time at user's option.
    - Frequency range 05 to 120Hz or better
    - Heart Rate: 15 to 300BPM or better
    - Shall have facility for producing a respiration channel
    - Shall have pacing detection and defibrillator discharging protection.

    :- Temperature
    - Range -1 to +45 degree C shall be provided
    - Accuracy +/- 1 Degree C
    - Shall be able to monitor both Core and surface temperature.

    :- NIBP
    - Measuring Mode: Manual and Automatic @ selected intervels
    - Pressure range: 30-270mmHg or Better
    - Accuracy: +/-4mmHg

    :-SPO2
    - Shall provide oxygen saturation percentage level,pleth waveform and pulse rate in beats per minute.
    - Measuring range: +/-3%
    - Incorporated with advanced signal processing algorithms for reliable operation even during low perfusion,signal interference and during patient motion.

    :-Capnography (Main Stream)
    - Measuring method- mainstream stream using infrared method
    - Measuring range -4 to 150mmHg
    - Accuracy: +/- 3mmHg
    - Should display ETCO2 and AwRR

    :- IBP
    - Display range: 0-300 mmHg (Mean, Systolic, Diastolic)
    - Accuracy: +/- 1%
    - Monitor shall provide user selectable label capability to distinguish each pressure channel of ABP,PAP,CVP Etc.

10. Accessories: 12 Lead ECG cable,Starter pack of disposable ECG electrodes, Cuff 4 Sizes (Adult-Pead). Adult and Pead Spo2 probes, Temperature Probes (Core or Skin), Mainstream capno transducer with reusable airway adaptors (Adult and Pead), Starter pack of single channel disposable IBP kits with adaptor cable.
11. Spare adult and pediatric cuffs (4 sizes), reusable SpO2 probes (adult and pead), ECG cable with electrodes, temperature probes must be supplied.
12. Printer paper 10 rolls to be supplied
13. Manufacture's product catalogues and technical data sheets substantiating the above information should be submitted.
14. Mounting:
    - The unit should be with mounting arm
    - The mounting arms shall be attached to wall,
    - Unit should be provided with all required adapters, interfaces...etc for the bracket.

All necessary accessories and consumables for the start and functioning of the equipment has to be supplied.

Power Supply

- Power input to be 220-240VAC, 50Hz fitted 13Amp BT Type plug.

Standards, Safety and Training

- Should be FDA approved and CE marked
- Application training must be provided to the users.
- Manufacturer standard certified biomedical technical must be given to Biomedical Engineers within 6 months of installation.

Documentation

- User/Technical/Maintenance manuals to be supplied in English.
- List of important spare parts and accessories with their part number and costing.

Warranty:

- **12 months from date of installation and commissioning**

Item 04: Stethoscope, Adult

1) **Characteristics**

1. Chest piece: Dual head no chill rim & diaphragm
2. Diaphragm: Tunable diaphragm
3. Binaural: Dual-leaf spring encased at 15° angle
4. Operating temperature range: 0° C ~ 40° C
5. Operating humidity: Less than 95% RH

2) **Trainings and Warranty:**

1. The unit and the accessories must be supplied with one year of warranty
2. Shall be CE marked and/or FDA approved.

Item 05: Examination Bed, Electrical

1. Must be at least 2 section table with independently adjustable back and height via electric control
2. Sturdy structure in S.S, epoxy powder coated and must be scratch and chip resistant
3. Backrest & height adjustable by handset and foot pedal controlled
4. Must contain Cushion padded foam mattress over 50mm thick
5. Must be antibacterial, antistatic, resistant to corrosion of water, detergent soap
6. The bed should be mobile on 4 swivel castors with at least 2 brakes
7. Must have lifting capacity of at least 150 Kg
8. Approximate dimensions (mm): 2000(L) x 600(W) x 530 - 940(H)

Power Supply

- Power input to be 220-240VAC, 50Hz fitted 13Amp BT type plug

Standards, Safety and Training

- Should be FDA approved /CE marked

Warranty:

- At least 12 months from date of hand over or installation and commissioning

Item 06: Digital NIBP Apparatus

1. Specification

1. Fast and accurate readings with LCD display
2. Measure the NIBP from Pead to Adult range.
3. Inbuilt rechargeable battery/AA Alkaline Battery with minimum 4 Hrs. operation time.
4. User friendly, mobile and shock resistant.
    3. NIBP
        a. Adult / pediatric measurement range:
            a. Systolic 30-255 mmHg
            b. Diastolic 15-220 mmHg
            c. Mean 20-235 mmHg
        b. BP accuracy: +/- 3 mmHg
5. Should include 3 sizes of NIBP cuffs; Adult (L&XL) and pediatric
6. Standard accessories shall be included

2.Power Supply

1. Power input to be 220-240VAC, 50Hz fitted 13Amp BT Type plug.

3.Standards, Safety and Training

1. Should be FDA approved/CE marked
2. Application training must be provided to the users.

3. Documentation

1. User/Technical/Maintenance manuals to be supplied in English.
2. List of important spare parts and accessories with their part number and costing.

4. Warranty:

1. At least 12 months from date of installation and commissioning

Item 07: Dressing Trolley

1. The approx. dimensions of the table should be approx. W500 x L700 x H800
2. It shall be made completely of stainless steel, with high quality finish to assure durability
3. It shall be corrosion resistant, disinfectant proof and easy to clean.
4. The cart should have two S.S shelves with four side railings on top shelf
5. The cart should include bowl and basket and should have provision for holding them
6. It shall be mounted on 4 castors with the following features:
    a. Wear resistant.
    b. Approximate Diameter: 75 mm.
    c. Swivel.
    d. Non-discoloring to floors and other materials.
    e. Breaks

Standards, Safety and Training

- Should be FDA approved /CE marked

Warranty:

- At least 12 months from date of hand over or installation and commissioning

Item 08: Digital IR Thermometer

1. Specification:

1. Thermometer should non-contact, measure both ear and forehead temperature with rapid measuring time.
2. Clinical Measuring Range at least of 35-45 °C
3. Accuracy +/- 1°C / °F or better
4. Measuring time, no greater than 10sec.
5. Battery operated (AA or AAA batteries).
6. Memory capacity of at least 3 readings
7. Battery life at least of 1000 takes
8. Auto shut-off.
9. Water and disinfectant 'resistant.
10. Standard accessories shall be included
11. Shall be CE marked and/or FDA approved.

2. Trainings and Warranty:

1. The unit and the accessories must be supplied with one year of warranty.

Item 09: Table Top Autoclave, Class B, 60L

1) **Electrical Characteristics:**
   - A 220-240VAC, 50Hz mono-phase electrical source.
   - Built in protections against over voltages and over current line conditions

2) **Operational Characteristics**
   - Sterilizer must be of class B
   - Temperature controlled sterilization process at 134°C & 121°C
   - Test programs must be incorporated (Bowie Dick and leak)
   - User customized programs shall be possible
   - SS interior (steam jacketed) and exterior panels
   - Door locking mechanism to prevent accidental door opening when chamber is pressurized or during cycle must be included.
   - Sterilizer chamber capacity: not less than 60 liters. Chamber dimensions must accommodate the drum size of at least 9"(dia) x 11"
   - Clearly visible parameter displays (temp, pressure, cycle status, etc.)
   - Connection to external water / drain supply should be unnecessary
   - Must include all the standard accessories

All necessary accessories and consumables for the start and functioning of the equipment has to be supplied.

3) **Standards/Cortication and Safety:**

   - Should be a CE / FDA Approved product and should have ISO standards.

4) **Warranty, training and others:**

   - The unit and the accessories must be supplied with one year of warranty starting from the date of installation.
   - Application training must be provided to the users.
   - Manufacturer standard biomedical technical must be given to Biomedical Engineers within one year of installation.
   - User, technical and maintenance manual must be supplied in English language.
   - List of important spares, accessories with their part numbers must be provided.
   - List of any consumable (such as filters and gaskets) with their part numbers must be provided and the standard frequency of replacement must be provided.
   - Contact details of both local supplier and manufacture for service and maintenance and must be provided.

7. The refrigerator should have an audible and visual alarm to alert staff to power loss and temperature deviation
8. The refrigerators shall have provision for contacts to interface with the Building Management System (BMS)
9. Approximate dimensions to be: (WxDxH) 600 X 600 X 850 mm.
10. The refrigerator shall have a magnetic door gasket for positive seal for Refrigeration System
11. Hermetically sealed, air-cooled compressor.
12. Non-CFC refrigerant.
13. Forced air circulation maintains chamber uniformity of +/-1°C and provides quick recovery.
14. Interior fans shut down when door is opened.
15. Automatic condensate evaporation system.
16. Rapid temperature recovery following door opening

Power Supply:

- A 220-240AC, 50Hz mono-phase electrical source with a 13amp, plug type G.

Standards/Cortication and Safety:

- Should be a CE / FDA Approved product and should have ISO standards.

Trainings and Warranty:

- The unit and the accessories must be supplied with two years of warranty.
- End users should be trained by the company application personnel.
- Service training must be given to HPSN Medical Team

Item 10: Advanced Comprehensive Dressing Surgery set kit

Item	Qty
Allies	2
Arteries	2
Bowl	1
BP handle NO 3	1
BP handle NO 4	1
Dissecting Forceps (Non toothed)	1
Dissecting Forceps (Toothed)	1
Eye towel	1
Gauze (cleaning)	4
Gauze pack	2
Medium Towel	1
Needle Holder	1
Scissor (Thread cut)	1
Sponge holder	1

Item 11: Medical Refrigerator.

Technical Specification

1. Under Counter medical refrigerator used for the storage of vaccines, drugs, etc.
2. Should be a double-door refrigerator
3. The refrigerator should have the following features:
    a. Adjustable stainless steel drawer
    b. Two or three adjustable shelves.
    c. Illuminated interior, incandescent lighting
    d. Automatic condensate evaporator
    e. Temperature should be set to operate at 2° C to 8° C
    f. Integrated temperature monitoring system
    g. Stainless steel interior
    h. Four heavy-duty swiveling casters, with brakes
    i. Dished bottom to contain spills
4. The monitor shall display chamber temperature to the tenth degree centigrade
5. Audible and LED alarm should have adjustable High/Low temperature and door open.
6. The refrigerator shall have a security locking system: Positive door latches with key lock security