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**BENAZIR INSTITUTE OF UROLOGY & TRANSPLANTATION (BIUT) SHAHEED BENAZIRABAD**

**TENDER FOR PURCHASE OF MACHINERY, EQUIPMENT AND MISCELLANEOUS TO BE INSTALLED AT BENAZIR INSTITUTE OF UROLOGY & TRANSPLANTATION (BIUT)**

**AT DISTRICT SHAHEED BENAZIRABAD**

**HEALTH DEPARTMENT,**

**GOVERNMENT OF SINDH**

### PHONE:021-99213372 FAX: 021-99222837

### TENDER NO. HD(P&E)3-8(33)/2017 DUE ON: 23-01-2018

**INVITATION FOR BIDS**

1. Sealed bids are invited from eligible bidders for Supply of Machinery, Equipment and Miscellaneous items against funds provided in the year 2017-2018.
2. Bidding will be conducted under **SPP Rule 2010 clause 46(2)** single stage two envelope bidding procedures of Sindh Public Procurement Rule 2010 (Amended 2013) specified in this document is open to all interested bidders.
3. Interested bidders may obtain further information from the office of the PM&I Wing, Health Department, 3rd Floor, Tuglaq House, Sindh Secretariat Building No. 2, Kamal Atta Turk Road, Karachi, during the office hours.
4. A complete set of bidding documents may be purchased by interested bidders on the submission of a written application from Office of the Section Officer (PM&I), Health Department, 3rd Floor, Tuglaq House, Sindh Secretariat Building No. 2, Kamal Atta Turk Road, Karachi, against the tender fee of Rs.3,000/- in shape of Pay Order / Demand Draft in the name of Project Director, Benazir Institute of Urology & Transplantation (BIUT) at District Shaheed Benazirabad.
5. The bidders are required to submit their sealed tender documents / bids (technical & financial) in separate envelope on or before 23-01-2018 at 3:30 p.m. at the office of Additional Secretary (PM&I), Health Department, 3rd Floor, Tuglaq House, Sindh Secretariat Building No. 2, Kamal Atta Turk Road, Karachi. Bids will be opened in the presence of bidders authorized representatives who choose to attend at 4:00 p.m.

Chairman Purchase Committee

Benazir Institute of Urology &

Shaheed Benazirabad,

District Health Office Sakrand Road,

Nawabshah

**INSTRUCTIONS TO BIDDERS**

Tenders are required to comply all the clauses mentioned in the terms and conditions of the tender and any deviation/breach will forbid them from competing in the tender.

1. Bids shall remain valid for 90 days from the date of opening. A bid valid for a shorter period shall be rejected as being non-responsive.
2. Prices should be quoted on C.I.F and D.D.P basis.
3. Price should be quoted in Figures & words both, failing which the offer will be ignored.
4. The Bidder shall prepare bid comprise one single envelope containing separately financial proposal and technical proposal in original. The Envelop shall be marked as “Financial Proposal” and “Technical Proposal” in bold and legible letter to avoid confusion.

In Technical Proposal the bidder must provide the original Data sheet and Technical brochure, Income Tax certificate, Sales Tax certificate, Sole Agency certificate and other documents; otherwise the bid will be ignored. A photocopy of the earnest money in shape of pay order should be attached with Technical Proposal but its value must not be disclosed and this can be achieved by placing a piece of paper on the place where amount is mentioned.

1. The technical bid submitted by the Bidder shall comprise the following documents:
   1. The original tender purchase receipt.
   2. Bid security (Photocopy of the earnest money without amount).
   3. Bidders shall purchase separate tender document and furnish purchase receipts for alternate offer, in case they want to submit alternate offer. Any item’s bid with alternate offers without separate purchase receipt (Original) is supposed to be rejected.
   4. A detail data sheet having description of the essential technical and performance characteristics of the offered equipment.
   5. The original catalogue must accompany with offer and the equipment should comply/certified at CE/FDA approved.
   6. Only sole agent/distributor should submit their bid. No sublets are allowed.
   7. Sole agency certificate of the quoted item from the Manufacturer must be attached by the bidder. The sole agency certificate should be valid for at least three years from the date of issuance. Authorization certificate from Manufacturer only for this tender will not be accepted.
   8. Bidder should have at least two – three years business history with the Manufacturer.
   9. Bidder should submit documentary proof of their past import of quoted model from the same Manufacturer.
   10. A certificate from the manufacturer that they are the original Manufacturer of the quoted machines must be attached with the bidding documents. It should be confirmed by Manufacturer that the offered machine / equipment is designed and manufactured in their own factory. Address of the factory should be mentioned in the certificate.
   11. The bidder shall furnish minimum three years’ experience in similar field with documentary proof i.e. copy of previous purchase order, installation certificate, service/maintenance certificate.
   12. The bidding firm must have been registered with Income tax, Sale Tax, Professional Tax and Sindh Service Revenue Board.
   13. The bidding firm must be registered with PNRA department for minimum past three years (for x-ray items only).
   14. The bidder shall furnish copy of valid PNRA registration certificate (for X-ray items only).
   15. Copy of valid Professional Tax (Excise & Taxation) Certificate, Income Tax Certificate, GST Registration Certificate should be attached with the technical bid.
   16. The bidder shall furnish three years Income Tax Return Certificate.
   17. The bidder shall furnish copy of ATL (Active Tax Payer List certificate).
   18. The bidder shall furnish a valid registration certificate with Karachi Chamber of Commerce & Industries.
   19. The Bidder must enclose list of Hospitals/Institutes where they have supplied the quoted equipment in Sindh and all over Pakistan. It is mandatory to attach documentary evidence that the bidder participating in this tender imported, supplied and installed the equipment at hospitals’ site.
   20. Bidder must submit details regarding the after sale service, availability of workshop in Sindh, trained and qualified engineers on their pay role stationed in Sindh, engineer’s training from Manufactures etc.
   21. The service manual with circuit diagram must be provided (for equipment) along with equipment.
   22. The bidder must confirm free Installation / Demonstration at consignee’s end as specified, three years free Service from the date of installation and availability of spare parts for 10 years.
   23. The supplier will be bound to supply the price list of spare parts and consumable at the time of tender which should be valid for three years after warranty.
   24. The supplier will be bound to provide free service during warranty period and to supply spare parts accessories of the supplied equipment on demand.
   25. Tenderers shall submit an undertaking on judicial stamp paper of Rs. 100/- confirming that if a purchase order is placed then the equipment to be supplied (equipment/machinery) will be original , brand new product / latest model and none of the part is refurbished, replace or old.
2. The financial bid submitted by the Bidder shall comprise the following documents:
3. The Bidder shall furnish a bid security @ 2.5% of the quoted value in the form of a pay

order.

1. The quoted prices must be mentioned in the price schedules (tender documents) and on letter head with the complete details as offered in the technical bid.
2. Price should be quoted in figure as well as in words.
3. The prices quoted by the Bidder shall be fixed during the performance of the contract and not subject to variation on any account. A bid submitted with an adjustable price or conditional will be treated as non-responsive and rejected.
4. Prices of imported items should be quoted in both C.I.F & D.D.P basis.
5. In case if the purchase order is placed on C.I.F, the bidder will establish Letter of credit on behalf of Project Director, Benazir Institute of Urology & Transplantation Nawabshah, District Shaheed Benzairabad, Sindh and will bear L/C charges, clearance charges and Transportation to consignee end. Necessary certificate will be issued by the consignee, that the import has been made for the Hospital/health facility, so as to avail exemption of duties/taxes as per Government Rules.
6. In case of Purchase order issued on C.I.F basis, the suppliers / contractor will be entitled / eligible to claim 80% of the purchase order amount from office of the District Account Office, on submission of the copy of L/C showing import of goods for Consignee/Hospital. Balance 20% amount can be claimed after delivery of goods at consignee site by submission of original delivery challan.
7. All the (applicable) Government taxes (Income Tax / Stamp Duty) of the value of the contract amount will be deducted from the bills of the Contractors / Suppliers.
8. The purchaser will open only the envelopes marked “Technical Proposal” in the presence of Bidders or their representatives who chose to be present at the time of bid opening date, time and place specified in the tender documents. The Bidder or their representative who are present shall sign the attendance sheet.
9. Initially the bids will be scrutinized on basis of required documents mentioned in instructions to bidder and general terms and conditions of the tender. Only those bids will be further evaluated on the basis of technical specification that are qualified in the initial scrutiny.
10. The envelope marked “Financial Proposal” shall be retained in the custody of purchaser without being opened till the completion of the Technical Evaluation.
11. Initially the bid evaluation will be performed after that Technical Specification will be evaluated by Technical Committee on the basis of the data sheet and the literature provided / submitted by the firm. Financial bids of only technical qualified firms will be opened.
12. The equipment offered must be of latest version / generation and in case an old model is offered, it will not be considered, even though it is as per the tender specifications.

18. All pages of the bid, except for un- amended printed literature, shall be initialed by the person or persons signing the bid.

19. The bid shall contain no alterations, omissions, or additions, unless such corrections are initialed by the person or persons signing the bid.

20. Bids shall be submitted by sole agent only. No sublet or authorization from local firm will be accepted.

21. Arithmetical errors will be rectified on the following basis. If there is a discrepancy between the unit price and the total price, which is obtained by multiplying the unit price and quantity, or between subtotals and the total price, the unit or subtotal price shall prevail, and the total price shall be corrected. If there is a discrepancy between words and figures, the amount in words will prevail. If the Bidder does not accept the correction of errors, its bid will be rejected.

22. The Purchaser reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to award of contract under the relevant provisions of SPP Rules 2010 (Amended 2017), without thereby incurring any liability to the affected Bidder or bidders or any obligation to inform the affected Bidder or bidders of the grounds for the Purchaser’s action.

23. The Purchasers reserves the rights to increase or decrease the quantity as per SPP Rule-2010 (Amended 2017).

24. Prior to the expiration of the period of bid validity, the Purchaser will notify the successful Bidder through Advance acceptance. This will constitute the formation of the contract. Within seven (07) days after receipt of the Advance acceptance, the successful Bidder shall furnish the performance security @ 5% in shape of Pay order/Bank Draft/Bank Guarantee of the contracted amount and will sign the contract agreement.

25. Bid validity can be extended as per SPP Rule 2010 (Amended 2017).

26. The warranty period will commence from the date of commissioning of the unit as per report of the end user/technical person.

27. The system will have the minimum uptime 95% in case of down time beyond this period the following penalty will be applied:

* + 1. 95% to 100% No penalty.
    2. 90% to 95% the warranty period will be extended by the number of days system in down.
    3. 85% to 90% warranty period will be extended 1.5 time the down time period.
    4. 80% to 85% warranty period will be extended two time for the down time period and supplier is supposed to give justification of delay.
    5. Uptime less than 80% hospital will complain to the Principal to take action against the supplier and warranty will be the three time for the down time period.
    6. However, PPM (Periodic Preventive Maintenance) will not consider in the down time and PPM of the system will be done as per manufacturer recommendation.

General & Special Conditions of Contract

1. The Contract shall be governed by and interpreted in accordance with laws of the Islamic Republic of Pakistan.
2. Store is required immediately. The bidder may however give their short guaranteed delivery period for imported items by which the supply will be completed.
3. Except as otherwise specifically provided in the Contract, the Contractor shall bear and pay all taxes, duties, levies and charges assessed on the Contractor.
4. The Contract Price shall be made to the Contractor as specified in the Contract Agreement, subject to the general principle / procedure of the Government of Sindh.
5. The Contract shall be executed in accordance with the Contract Documents and procedures.
6. The Purchaser or its representative shall inspect the Machinery / Equipment to confirm their conformity to the Contract specification. The inspection will be conducted at the premises of consignee after receipt of supply.
7. The Contractor warrants that the supplied equipment or any part thereof shall be free from defects in the design, engineering, materials etc. In case of defect in any part at the time of supply of installation it shall be replaced with new one instead of repair.
8. The purchaser, without prejudice to any other remedy for breach of contract by written notice of default sent to the supplier, may terminate this contract in whole or in part:
9. if the supplier fails to deliver any or all of the contracted items within the period(s) specified in the Contract, or within any extension thereof granted by the Purchaser.
10. If the Supplier fails to perform any other obligation(s) under the Contract.
11. If the supplier, in the judgment of the Purchaser has engaged in corrupt or fraudulent practices in competing for or in executing the Contract.
12. The bidder shall confirm the refund of cost difference if the same goods is/was supplied at lower rates to any other Govt./Semi Government institution or Armed Forces in the Province or outside in the same fiscal year.
13. The Purchaser reserves the right to increase/decrease or delete the quantities of goods etc. at the time of award of contract and also reserves the right to increase/ decrease the quantity of goods and services originally specified in the contract without any change in unit price or other terms and conditions of goods at any time during the contract period.
14. Service charges @ current prevailing charges of the value of the Contract will realized/charged by the A.G. Sindh, while making payment to the contractors for award of each contract.

**EVALUATION CRITERIA**

**Bids will be evaluated in following Steps:**

**Evaluation step no. 1**

**Initial scrutiny of documents:**

i. Copy of Earnest money in shape of pay order without amount.

ii. Original tender purchase receipt/receipts for alternate offers.

iii. Compliance of terms and conditions duly signed and stamped by the bid signing

authority.

iv. Submission of required documents in instructions to bidder (clause no. 5) and general terms and conditions of tender.

**Evaluation step no. 2**

**Technical Evaluation**

Only those bids will be evaluated technically that are qualified in initial scrutiny of documents i.e. Step no. 1.

**Evaluation step no. 3**

**Financial Evaluation**

Financial offers of only those bidders will be opened that are qualified in technical evaluation.

i. Original pay order of Earnest money.

ii. Amount of bid security at the rate of 2.5% of total bid amount in the shape of pay order.

iii. Quoted price on CIF and DDP basis for imported items.

iv. Quoted price on DDP basis for local items.

**UNDERTAKING**

|  |  |
| --- | --- |
| a) | That I/we agree whether our tender accepted for total, partial or enhanced quantity for all or any single item. I/We also agreed to supply and accept the said item at the rates for the supply of contracted quantity with in the stipulated period shown in the contract. |
| b) | I/We undertake that, if any of the information submitted in accordance to this tender Enquiry found incorrect, our contract may be cancelled at any stage on our cost and risk. |

CERTIFICATE

We guarantee to supply the stores exactly in accordance with the requirement specified in the invitation to this tender.

Signature of Tenderer : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name & Designation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Address: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Detail of Machinery, Equipment & Miscellaneous items**

**Benazir Institute of Urology & Transplantation, Nawabshah, (BIUT)**

**at District Shaheed Benzairabad, Sindh.**

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| --- | --- | --- | --- | --- | --- | --- |
| **S.No.** | **Name of Item** | **Qty** | **CIF PRICE** | | **DDP PRICE** | |
| **Unit Price** | **Total Price** | **Unit Price** | **Total Price** |
| 1 | **Multiparameter Patient Monitor**  15” or more LCD display with wall stand  ECG /NIBP/SpO2/TEMP/Resp  Non fade colored touch display monitor up to 15” or more.  Adult, Neonatal & pediatric modes of operation, detection and alarms for all parameters  Waveform display 7 or more.  Wave form trace speed : 25 and 50mm/sec  ECG  Leads selection: I, II, III, aVR, aVF, aVL, V, V1-V6, TEST  Selectable neonatal & pediatric operation  Ability to detect neonatal & pediatric heart rate range, qrs widths and amplitudes.  Numeric heart rate  Real time wave form  Variable gain: 0.5,1,2&4  Heart beat indication  NIBP  Pressure ,oscillometric principal.  Systolic , diastolic and mean pressure  Rising cuff/continuous pressure display  Temperature:  Numeric temperature selectable  Temperature with probe (external and rectal)  Ability to measure neonate and pediatric temperature range  Pulse Oximeter  Number oxygen saturation measurement  Range: 0-100%  Sensor for neonate/infant and pediatrics  Respiration impedance method using ECG leads for sensing.  Breathing rate range, sweep speed  Selectable apnea alarm  Built-in battery with charger for at least 2 hours or more  The system must be complete with all sensors, probes and cables and accessories required for measuring all above selected parameters for adults/peads and neonatal.  Compatible with HL -7  Monitors should have facility to be connected with central station.  OPTIONAL:   1. **ETCO2**   Mainstream ETCO2  Adult and Neonate  Measurement Range: 0 ~ 99mmHg  Sampling Rate: 50 ml/min  Respiration Rate: 0 ~ 150 breaths/min   1. **2 channel IBP**   Measurement Range: -50 ~ 300mmHg  Impedance Range: 300 ~ 3000Ω  Alarm: -10 ~ 300mmHg  Pressure Transducer: sensitivity, 5μV/V/mmHg  Transducer Sites: ART, PA,CVP, RAP, LAP, ICP  Or Equivalent  USA/UK/EEC/Japan | 44 |  |  |  |  |
| 2 | **ICU Ventilator**  Adult/Peads, Unit complete with humidifier and patient circuits and built in air compressor turbine technology.  ICU Ventilator for peads and neonate.  Invasive and non-invasive techniques.  12” or more Touch screen display with internal compressor. Battery back up support for 2 hours or more.  Modes of ventilation: Assisted Control Mandatory Ventilation (CMV).  Synchronized Intermittent Mandatory Ventilation (SIMV).  Spontaneous Ventilation.  Volume-controlled.  Pressure-controlled.  Volume Targeted Pressure. controlled  Apnea Backup Ventilation  Active Exhalation Valve  Automatic Leak Compensation  Tidal volume 20 - 2000 ml or better  Respiratory rate 0 - 150 bpm.  Pressure control : 20~60 cm H2O or better  Pressure support : 0~60 cm H2O or better  Peak flow 1-120lpm or better .  Inspiratory time: 0.1 ~ 8sec or better  Oxygen concentration: 21-100%  Display parameter : Delivered oxygen concentration 21-100%  Trend data up to 72 hours or more.,  More than 35 parameter display.  Real time graphic, volume vs time, flow vs time, pressure vs time, flow volume loop, pressure volume loop.  Comprehensive alarm for patient disconnection, low tidal volume, battery failure, breath rate, low pressure, etc.  Graphics Display  Apnea Back-up  Humidification Selection (HME, Humidifier, and None)  User Defined Custom Default Settings  Complete with humidifier, patient circuit.  Or Equivalent  USA/UK/EEC/Japan | 7 |  |  |  |  |
| 3 | **Syringe Pump**  Syringe pump for use in ICU, CCU, NICU or Operation room for the infusion of chemical such as vasopressor drugs, anti cancer drugs, oxytocic, nutrituin, drug for chemotherapy medication and blood transfusion. Use of 100ml syringe.  Anti bolus and anti siphon function.  3 sensors .  Lockable keypad.  Flow rate rang : 0.1-99.9ml/h, 100-155ml/h, Volume infused: 0.1-99999ml, Volume to be infused: 0.1-99999ml  Compatible syringe: 10,20,30,50/60, 100ml or more  Audio-Visual Alarms  Low battery, Very low battery, Occulusion, X min pre-alam, (KVO) XX ml/h, End of infusion  Syringe empty, Illegal syringe ,Plunger not fitted, Clamp opened, Internal error  Nurse call system  Built – in battery with 8 hours back up  Or Equivalent  USA/UK/EEC/Japan | 14 |  |  |  |  |
| 4 | **Infusion Pumps**  Volumetric peristaltic infusion pump.  Flow rate 0.1 to 99.9 ml/h.  Unit compatible with most IV set.  Memory function incase of power failure to retain the most recent flow rate & total volume.  Comprehensive alarm for Air in line, occlusion, door open, low battery, infusion complete, empty container.  Built in battery with battery charger.  Unit complete with 10 nos. IV sets.  Or Equivalent  USA/UK/EEC/Japan | 22 |  |  |  |  |
| 5 | **Defibrillator with Monitor/Recorder Biphasic 200J**  Biphasic transthoracic (external) defibrillator with display of 5.5” screen or more.  Synchronized output with ECG  Manual and AED Mode.  Control of energy charges / delivering on main panel and apex paddle.  Charging indicators  The energy range should be adjustable for peads and adults up to 200J or more.  Charging time for full energy should be less than 7 sec.  Display of heart rate, ECG through paddles and lead I,II& III patient cables.  Built-in recorder for printing of full summery of standard 50mm paper.  Alarm for high and low heart rate, low battery warring.  Built in rechargeable battery with charges for more than 100 shocks  Auto test/self-check  External pediatric and adult paddles.  ECG cable  AC 220V/50Hz operated  Pace Maker:  Frequency 30 to 180 ppm or better  Current 0 to 150 mA  Rectangular constant type waveform.  Duration: 40 ms  Refractory period 340 ms from 30 to 80 ppm  240 ms from 85 to 180 ppm  Stimulation mode On Demand and Fixed with selectable frequency and current  Optional  SpO2  MASIMO SpO2  Range 1-100%  Perfusion index 0.02% to 20%  Accuracy during no motion conditions: 70% -100 % : ± 2 digits  Accuracy during motion conditions: 70% -100 % : ± 3 digits  Pulse Frequency Range 25 -240 ppm  Accuracy during no motion conditions : ± 2 ppm  Accuracy during motion conditions : ± 5 ppm  Or Equivalent  USA/UK/EEC/Japan | 10 |  |  |  |  |
| 6 | **Central Station for 14 Beds**  Must be compatible with item no 1 “ICU Monitor" and also from the same Manufacturer.  Multi-Channel 19” or more colored Central Monitor with recording facility on Laser Printer  High and low alarms on all parameters selected on bedside monitors.  should have facility for 2nd displays  Hard wire system with capabilities of Tele Monitoring as a future upgrade.  Capability to store 48-hours trend data  Capability to store and review data of 72-hours  full disclosure ECG as well as 5 other waveforms for each patient.  64 wave form, multi wave freez etc.  Or Equivalent  USA/UK/EEC/Japan | 01 |  |  |  |  |
| 7 | **Laryngoscope**  Fiberoptic laryngoscope  Local, export quality | 10 |  |  |  |  |
| 8 | **ECG Machine 6 Channel with Thermal Recorder**  Resting 6 Chanel ECG Machine with alphanumeric key board  LCD display of 5.5” or more.  Pace maker detection.  Indicators for loose leads  Auto and manual modes.  Printer Paper speed (cm/s) : 1, 2.5, 5.  Sensitivity (cm/mV): 0.25,0.5,1.2  Diagnostic analysis and interpretation as standard  Memory : 100 or more records, 10 sec long strip  Paper type: roll/A-4  Battery backup for 75 minutes for monitoring and 30 min for printing in both automatic and manual mode.  Complete with: Set of electrodes, patient cable, power cord, gel, paper roll 58mm / 25m and dust cover.  OR Equivalent  USA/UK/EEC/Japan | 14 |  |  |  |  |
| 9 | **Blood Gas Analyzer**  Measured Parameters: pCO2 , pO2 , K+ , Na+ , Li+ , Cl- , Ca++, pH, Glu, Lac, tHb, barometric pressure  Calculated Parameters: HCO3 -A, HCO3 -S, BE, BEecf (SBE), TCO2 , BB, O2 sat, O2 CT, P50, AaDO2 , Hct, H+ , AGAP, SHUNT, Acid-Base Status  Throughput: Up to 80 tests/hour depending on configuration  Sampling Method: Aspiration system adapted for both capillary and syringes, cleaned with Rinse Solution automatically  Sample Volume: 50-200 µl depending on measured parameters  Sample Types: Whole Blood, Arterial Blood, Urine, Serum, Plasma,Respiration Gas  Calibration: 2-Point calibration in standard and economy modes suited to your working hours.  Measurement Temperature of Electrodes and Sensors: Electrodes and Sensor temperature automatically adjusted to 37.0°C ± 0.2 during measurements.  Data Capacity: 2 GB SD Card, 32000 measurements and QC data sets  Display: 5.4'' LCD-display, illuminated, 15-lines, 30 characters  Or Equivalent  USA/UK/EEC/Japan | 01 |  |  |  |  |
| 10 | **Pulse Oximeter**  Portable 5-8” touch screen TFT display  2 trace waveform  SpO2% Range: 0 ~ 100%  Pulse Rate Range: 30-250 bpm  Alarm  Red light LED wavelength SpO2 Probe  Battery backup for three hours or more.  Complete with peads and infant accessories  Local trolley with basket.  Or Equivalent  USA/UK/EEC/Japan | 05 |  |  |  |  |
| 11 | **Floor Mounted Air Cleaner Unit**  Air flow :max. 600 m3/h  Standard fan speed  Step 1: 900 rpm  Step 2: 1,300 rpm  Step 3: 1,700 rpm  Step 4: 2,800 rpm approx.. Or Adjustable  Noise emissions  Fan stage 1, silence night level  Fan stage 2, daily basic level  Fan stage 3, daily high level  Fan stage 4, intensive level  Filter type :  Particulate filter  Designation : HEPA / ULPA  Filter monitoring with LED display  Material : Chromium steel 1,0 mm  Complete with : Stainless steel, polished Air purification unit  HEPA14 filter cartridge (consists of pre-filter F9 + activated carbon + HEPA14)  2 x brackets in steel for installation against the wall.  Or Equivalent  USA/UK/EEC/Japan | 01 |  |  |  |  |
| 12 | **Suction Machine Heavy Duty with 4 Liters Jars**  Noise less suction machine with a noise level of not more than 47db for smooth and calm operation.  Should have 4 extra strong wheels (1of them antistatic and 2 of them with brakes)  Should have suction capacity of 40l/min  Vacuum pressure 650 -700 mmhg  ON/OFF switch  Should have Knob for Suction Control  Should be piston type, oil free , maintenance free  Should have 2 Polycarbonate collection jar of 4 liters with safety valve to prevent overfilling  Should be Complete With  Suction tube of 3-4 m  2 No Collection jar of 4 liters each and 1 no. extra jar.  With foot switch  Power cord  Anti-Bacterial filter  Or Equivalent  USA/UK/EEC/Japan | 32 |  |  |  |  |
| 13 | **Heavy Duty Nebulizer**  Compressor: Piston.  Operating Pressure: 0.90 bar or better.  Air flow: 12~ 14 1/min.  Noise Level: 50db or better  Accessories: Adult face mask 01. Pediatric Face Mask . Faster jet Bulb. Mouthpiece. Nasal prong. Connection tubing.  Or Equivalent  USA/UK/EEC/Japan | 05 |  |  |  |  |

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| 14 | **Therapeutic Ultrasound for Rehabilitation 1& 3 MHZ Frequency**  Therapy for treatment to increase blood flow in the tissues  Touch screen technology  Dual frequency ultrasound (1MHz and 3MHz)  Programmable memory  Treatment Protocols: Pressure Ulcers, Chronic Venous Ulcers, Trigger Point Low irritability, Tendon Injury/ Lesion, Chronic Osteoarthritis, Rheumatoid Arthritis, Tennis Elbow, Carpal Tunnel, Fibromyalgia, Soft Tissue Stretch, Impingement Syndrome, Calcific Tendonitis, Perineal Pain (Persistent), Perineal Pain (Partum)  Treatment Time 0-30 min  Treatment Programs 10 user-defined set-ups  Ultrasound Frequency 1MHz and 3MHz  Pulse Duration 2ms  Ultrasound unit complete with: Large treatment head and gel.  Or Equivalent  USA/UK/EEC/Japan | 01 |  |  |  |  |
| 15 | **Electro Therapy Unit**  Therapy for treatment to increase blood flow in the tissues  Combination unit, dual frequency ultrasound and stimulation therapy.  Touch screen display  Dual frequency ultrasound (1MHz and 3MHz)  Stimulation output (2 or 4 pole).Diadynamic, Galvanic, Russian & Microcurrent output.  Programmable memory  10 or more user program.  Complete with large treatment head 1 and 3 MHZ 1 no. 250 ml bottle of coupling , medium 2/4 pole patient lead , 4 x rubber electrodes , 4 x medium sponge covers, 4 x electrode connection cables and Trolley local made  Or Equivalent  USA/UK/EEC/Japan | 01 |  |  |  |  |

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| 16 | **Computer**  Core 5i  4.5 Ghz optical super combo  500 GB HDD  4 GB DDR 3 RAM  17” LCD Monitor  Key Board & Mouse  Laser Printer  (HP, Dell, Compaq or equivalent) | 49 |  |  |  |  | |
| 17 | **Air Conditioners 1.5 Ton**  Dawlance/Sharp/Haier/National or equivalent | 106 |  |  |  |  | |
| 18 | |  | | --- | | **EXTRACORPOREAL SHOCKWAVE LITHOTRIPOR SYSTEM** | | Fully integrated urology system for extracorporeal shock-wave lithotripsy (ESWL) | | stationary systemfor shock wave applications in urological stone therapy | | and for urology procedures. | | **A. SHOCKWAVE GENERATOR:** | | 1. Shockwave source, x-ray system and treatment table should be one single system (integrated). Systems with separate components will be excluded. | | 1. Shockwave system with integrated table should have the possibility to work with an integrated x-ray system. | | 1. The shock wave generator to be of electromagnetic type. | | 1. Focussing of shockwave without focussing lens. | | 1. Shockwave source should have construction principle to allow inline/offline x-ray inline /Outline ultrasound localization | | 1. The therapy source should be under-table model enabling to treat both kidneys without moving the patient. | | 1. Shockwave source should be movable in therapy position and parking position. | | 1. Effective focal energy for treatments of the stones. State energy in –6dB focal zone. | | 1. The pressure range in the -6dB focal zone should be indicated and should be minimum 6 MPa and reach a peak pressure of minimum 140 Mpa or more | | 1. The peak pressure at therapy focus should be variable. State the value at maximum energy level. | | 1. Selectable energy flux density in every focal zone (normal/extended). State range (minimum and maximum) in –6dB focal zone. Minimum and maximum energy flux density should reach at least (minimum: 0.03; maximum at least 2 mJ/mm²). Or better | | 1. Minimum energy flux density in -6 dB should be 0.05 mJ/mm² or better | | 1. Selectable ECG and fixed frequency triggering. | | 1. The shock wave penetration depth (measured from surface of shock wave coil to half-focal-length) should be at least 150mm. | | 1. State diameter of shockwave source, which should be at least: 25 cm and not exceed 35 cm. | | 1. Coupling area of shockwave head should be at least 800 cm² for low skin pressure but also not exceed 850 cm². | | 1. Aperture angle should be at least 80° | | 1. Total shockwave dose (energy) during the whole treatment should be indicated on a display for continuous control and read-out at end of treatment | | 1. high voltage generator | | 1. Patient coupling to be stated. | | 1. All lithotripter function can be operated from patient table or from remote control console via touch-screen panel. | | 1. The system should provide a fast localization with low exposure to radiation due to undertable shockwave head and inline localisation. | | **B. TREATMENT TABLE:** | | 1. A highly radiotransparent motorized in 4 axes patient table for the safe positioning of obese patients with variable height adjustment | | 1. Short table end allowing the anaesthetist for easy access on the head end for intubation… | | 1. Table integrated with x-ray imaging system and shockwave head | | 1. No side table cut-out for shockwave head application (under-table shockwave source) | | 1. Table movement (with coupled shockwave source should be minimum: | | 1. x-axis: 400 mm | | 1. y-axis: +/- 70 mm | | 1. Height adjustment at least from 80 cm to 110 cm | | 1. Width of the table top at least 70 cm | | 1. Trendelenburg inclination of minimum 10° | | 1. Table top load at least 200 kg | | 1. For easy and stable positioning the table surface should be arched without any backside fixation. | | 1. All table movements, the operation of the integrated C-arm shall be possible from table side and optional on remote control desk via touch-screen operating panel. All controls shall be easily accessible and on a minimum number of operating buttons. | | 1. The patient table should be accessible from all sides (no generator should be around the main unit) | | 1. Table movement during stone fragmentation treatment should be possible motorised without interrupting the treatment. | | 1. Treatment of infants should be facilitated by supporting patient foil or any other means | | **C. X-RAY SYSTEM:** | | 1. For ESWL the movement of integrated c-arm should between 0° and 30° cranio-caudal | | 1. Wide opening of C-ARM / U-ARM enabling operator to stand between table and | | 1. C-ARM / U-ARM mounting | | 1. For ESWL the flat panel detector should be positioned above the table. | | 1. Prerequisite: minimum 40 cm distance between table and c-arm / u-arm to allow operator standing on the rear side of the unit. | | 1. Motorised rotation of C-ARM / U-ARM 0-30 degree. | | 1. Standard generator power: 50 kW | | 1. The x-ray generator to be microprocessor controlled high frequency converter technology of 50 kW at 100 kV nominal power or more. | | 1. Minimum exposure time 2 msec | | 1. Fluoroscopic voltage range: 40-125 kV | | 1. Fluoroscopic current range: 1-10 mA | | 1. High level fluoroscopy up to 35 mA | | 1. Pulsed fluoroscopy up to 15 p/s | | 1. Automatic kV and mA control for optimal image quality. | | 1. X-ray generator and/or other cabinets should be placed apart from the lithotripter to allow free access from all sides. | | 1. Dual focal spots of maximum 0.3 mm and 1.0 mm for maximum geometric resolution | | 1. The Anode heat storage capacity at least 222 kJ (300 kHU) | | 1. Cooling rate of tube 52 kJ/min (70 Hu/min) | | 1. Maximum tube housing heat content 930 kJ (1.3 MHU) | | 1. Horizontal stone localization should be possible in ap projection | | 1. Automatic airbag system for improved x-ray in-line exposures. | | 1. Optional automatic positioning system under x-ray control. Option should be operated via Touch-screen technology. | | 1. Resolution minimum 2800 x 2800 pixels    * Conversion factor    * Contrast ratio | | 1. Remote controlled collimator to be incorporated | | 1. Dynamic memory: 2 GB, System HDD: 160 GB | | 1. Image archiving:    * + HCF pulsed fluoroscopy : 512 images/GB      + High resolution radiography: 64 images/GB      + Medium resolution radiography: 256 images/GB      + Image viewer in touch-screen panel (100 images RAM memory) | | 1. Post processing    * + FTH Fluoroscopy Harmonisation      + Oriented exam LUT      + Spatial filters      + Harmonisation      + H&V image reverse      + 90° image rotation      + Electronic shutters (square and circular)      + Reverse image polarity      + Multi-image display      + Scaled image, variable (from 1.0 to 2.9)      + Zoom, variable (from 1.0 to 3.0)   Brightness and contrast control | | **D. ULTRASOUND SYSTEM LOCALIZATION** | | 1. The system should provide b/w images on various modes of operation. | | 1. Image display modes: B, M, B+M | | 1. Cine memory up to 1300 images | | 1. Image memory up to 1000 images | | 1. Preset functions:   Settable presets: 15  Built-in presets: 17 | | 1. Measurement and analysis programmes e.g. urological report | | 1. Viewing monitor at least 10’’ | | 1. System to accept simultaneously at least two probes | | 1. Portable system with external probes (optional available) | | 1. A inline sector probe of 3.5 MHz to be included | | 1. Stone localisation should be performed in an inline localisation. | | 1. Simultaneous in-line, in-situ x-ray and ultrasound imaging should be possible | | 1. Motorised Inline transducer movement in z-axis. | | **E. OTHER REQUIREMENTS** | | 1. Operation of table movement, shockwave head movement, shockwave parameter settings, x-ray system operation, ultrasound scanner movement via a single intuitive touch-screen console. | | 1. Touch-screen system should have the possibility to be upgraded by e.g. lithotripsy database, adaptation of endoscopy system of known manufacturer, direct operation of endoscopy systems on touch-screen, Dicom 3.0 compatibility. | | 1. Display of total energy placed (lithotripsy index) | | 1. Complete system (lithotripter, x-ray generator, ultrasound unit) should not need more room space than   - for ESWL: 20 sqm  - use in endourology: 25 sqm | | 1. Power supply:   x-ray: 380 - 415 V  lithotripter: 230-240 V | | 1. System should have an integrated | | 1. The installation conditions such as power requirements, ambient temperature, relative humidity, wiring and grounding should be provided by the manufacturer in accordance with all applicable local and legal requirements for medically used electrical equipment. | | 1. Local references and international published papers (independent studies preferred) to be added as enclosure. | | 1. Warranty: Five years including all parts and consumables. | | 1. Country of Origin: USA/EU/Japan | | 1. Certification: FDA/CE | | 1 |  |  |  |  | |
|  | **PATHOLOGY SECTION** |  |  |  |  |  |
| 19 | **Binocular microscope**  Slide type Binocular head with 45° inclined and 360° rotation.  Wide-field eyepiece 18 and 13mm paired.  Quadruple nose piece with built in click stopper .DIN achromatic objectives.  Built-in mechanical stage 140mm x 140mm, moving range 50mm x 75mm, with specimen holder controlled by coaxial knobs at low position.  Focusable condenser and diaphragm iris m filters and fileter holder.  Built-in electrical illuminator with LED, High illumination (60000 hours life).  Coaxial focusing system with built in tension adjustment and focus stopper.  Or Equivalent  USA/UK/EEC/Japan | 6 |  |  |  |  |
| 20 | **Tissue Processor with fume hood**  High Volume organized 280 cassette capacity or better  Capable to pre-heat Reagents up to 35°C.  Automatic reagent rotation  Should be compatible with IPA xylene-free processes as well as conventional reagents  User protection from formaldehyde exposure, alcohol, xylene, and formaldehyde.  Touch-screen interface  Complete with software  Automatic paraffin rotation system  Integral lid  Or Equivalent  USA/UK/EEC/Japan | 2 |  |  |  |  |
| 21 | **Microtome with disposable blades conferential**   * Bi-laterally located section thickness control knobs (to the right and left of the specimen holder on the instrument housing) – Makes adjusting sectioning thickness simple and easy. * XY Fine orientation controls located on the left side of the specimen head – user can adjust settings with one hand and does not have to reach over the blade. * 64 mm vertical cutting stroke – Accommodates a broad range of specimen sizes including super mega cassettes. * Parallel guide rails – preserve stability of the knife holder for accurate and reliable sectioning * Cross roller bearings – Provide exceptionally smooth operation and helps maintain calibration. * Removable levers on the blade holder – Avoids accidental adjustment and frees work are from less frequently used levers. * Large wraparound waste tray completely surrounds the blade holder – User can cleanup both faster and safer without having to reach behind the blade holder. The tray can be removed very quickly and easily to tip waste directly into appropriate waste receptacle. * Selectable retraction from the left side of the instrument – Makes switching retraction on and off very simple. Enabling rapid trimming.   Or equivalent  USA/UK/EEC/Japan | 2 |  |  |  |  |
| 22 | **Cystopin**  USA/UK/EEC/Japan | 1 |  |  |  |  |
| 23 | **Wax Dispenser**  USA/UK/EEC/Japan | 1 |  |  |  |  |
| 24 | **Tissue Floating**  USA/UK/EEC/Japan | 2 |  |  |  |  |
| 25 | **Slide Warmer**  Touch-screen interface  Stain protocols with recall and loading of reagent layouts  User protection from fume extraction through a carbon filter  Internal LED lighting  battery backup  password protected Protocols.  Small footprint  25 reagent stations  Advanced optimization software  Should runs 10 to 15 racks at the same time  Or Equivalent  USA/UK/EEC/Japan | 1 |  |  |  |  |
| 26 | **Cryostate**  USA/UK/EEC/Japan | 1 |  |  |  |  |
| 27 | **Frozen Section Microtome**  USA/UK/EEC/Japan | 1 |  |  |  |  |
| 28 | **Block Storage Cabinet**  USA/UK/EEC/Japan | 1 |  |  |  |  |
| 29 | **Centrifuge Machine Bench Type**  Bench Top Centrifuge Machine 5000 RPM  Brushless motor. Noiseless and vibration free.  Relative centrifugal force (RCF) not less than 3,000 x g Digital control of Timing up to 60min.  Digital microprocessor controlled.  Digital display of speed, timing.  Automatic imbalance indication with safety  shut off.  Rotor Imbalance detection.  Lid safety interlock.  Rotor, 24 tube holders capacity.  ABS housing resistant against shock & chemicals.  Accessories: two sets of 12 mm x 75mm and 12mm x 100mm tube holders for each tube size.  Foil Key Board, 10 acceleration & deceleration rates.  Or Equivalent  USA/UK/EEC/Japan | 4 |  |  |  |  |
| 30 | **Hot Air Oven**  Capacity : 34L.  Microprocessor Control system with LED display.  Temp control: PID.  Digital Temp setting .  Digital Temp readout.  Air convection: Forced convection by fan.  Temp uniformity ±2.0ºC at 55ºC .  Temp stability ±0.5ºC at 37ºC.  Temp: 50C above ambient to 300 0C.  Over-temp alarm &shutout : Yes, 4ºC to the set point.  Timer : Digital, 99 hr. 59min. + HOLD.  Temperature range : Digital, 99 hr. 59min.  HOLD Standard accessory : 2 S/S mesh shelves, adjustable  Adjustable Ventilation Slide.  ISO-9001 Certified.  Or Equivalent  USA/UK/EEC/Japan | 5 |  |  |  |  |
| 31 | **Lab Incubator**  Microprocessor Control.  PID temperature control.  LED digital display to show actual PV and preset chamber. Over temperature safety device.  Temp. Range Min 5 0C to 230 0C.  Timer 0-120 min.  LED 3 digit display  Stainless steel interior with 2 Chrome-plated Shelves.and powder coated exterior.  Capacity: 30- 36 Liters .  chamber size : 330x330x330. 2 x shelves  Ventilation Slide.  ISO-9001 Certified.  Or Equivalent  USA/UK/EEC/Japan | 4 |  |  |  |  |
| 32 | **Electronic Weighing Balance**  Capacity : 420 gm  Readability : 0.1 mg  Repeatability (sd) : 0.3 mg  Linearity (+/-) : 0.5 mg  Pan Size (mm / inch) : 90Ø / 3.5”Ø  Response Time : 2 - 3 Sec  Display: Alpha Numeric LCD Display  Calibration: Motorised Internal Calibration  Units of measure: g, mg, ct, GN, mo, oz, dwt etc.  Rate Range : Full  Operating Temp. : + 10º to 40ºC  Sensitivity Drift. : 6 ± 2ppm (2 x 10 / ºC)  Minimum Sample Wt.  as per USP : Approx 100 to 150mg  Minimum Wt. as per (U=1%, sd=2) : 8 mg  Application Modes :  mg PCS, % Weighing, Animal / Dynamic Weighing, Check Weighing Automatic Density, Determination.  Or Equivalent  USA/UK/EEC/Japan | 3 |  |  |  |  |
| 33 | **Water bath**  Volume: 22L. Uniformity: .5 ºC. Heater: 1 KW. Readout: Thermometer. Temperature Controller: PID, +/-0.1 ºC. Stirrer: Built-in   * Displays actual and set point temperature simultaneously * Three push-button pre-sets for frequently used temperatures * Integrated timer * Hinged gable cover * Calibration capability * Reservoir made of 304 Stainless Steel * Reservoir drain (10 - 14 liter and larger baths) * Primary and automatic safety thermostats   Or Equivalent  USA/UK/EEC/Japan | 3 |  |  |  |  |
| 34 | **Autoclave Bench Top**  Microprocessor Control.  PID temperature control.  LED digital display to show actual PV and preset chamber. Over temperature safety device. 99 hours electronic digital timer.  Temperature 300°C. resolution 1°C.  LED 3 digit display . 0.1°C stability Stainless steel interior and powder coated exterior. Capacity 36 Liters .  chamber size : 330x330x330. 2 x shelves  Or Equivalent  USA/UK/EEC/Japan | 3 |  |  |  |  |
| 35 | **Elisa (Plate Reader) with Printer + Automated Washer for Elisa**  Available for 3 x 96-well plates, with varying wavelength ranges 405-630 nm and incubation and shaking  Fully automated Microprocessor Controlled Micro Plate/Batch ELISA Analyzer with LCD Monitor and data recording system, with continuous feeding Mechanism.  Unit with automatic dilution, incubation, conjugation, washing and reading facility.  Extensive onboard programming and data analysis.  The facility for Photometric Validation, Auto clot detection, sensor probes for reagent and samples have been added.  With CE/IVD Validated APF (Assay Protocol Files).  The Reader should be open and programmable, selectable interpretation  Facility with LCD display / Monitor Notebook, Optical density of 3.5 or more and Printer).  The Washer will be of 8-16 head, LCD display, Flat, round, V-bottom plates and strips acceptability.  LAN/ WLAN port to share the data with hospital network.  50HZ –220 V  Complete with all accessories and consumables  Or Equivalent  USA/UK/EEC/Japan | 1 |  |  |  |  |
| 36 | **Domestic Refrigerator (18 cft)**  Cooling system : Forced – Air Circulation  Capacity : 270-360 Litres  Input Power : max 310W  Temperature range : 2 ~ 8°C (Ambient 10°C ~ 32°C)  Voltage (V/Hz) : 220V / 50 Hz  Temperature Control : Microprocessor Control and LED display  Over and under temperature : Audible and visual alarm  Cabinet : Upright  Door : Single glass door, hinged, Foam insulation : High density CFC-free urethane  Refrigerant : R134a/ R404a CFC-free.  Should have Internal lighting with 1 LED tube, with automatic activation both at every door opening and even through a touchpad on the control panel.  Defrosting should be completely automatic, thermostat controlled.  Or Equivalent  USA/UK/EEC/Japan | 11 |  |  |  |  |
| 37 | **Blood Bank Refrigerator with 4+2deg (One for unscreened-two for screen blood)**  **Main Features**   * Auto Defrost * Forced – Air Circulation * Temperature control * Safety Control System * Ergonomic design * Transparency Design   **Specifications**  Max 360 LITRES  Storage capacity: Min 180 bags  Input Power : Max 460W  Temperature range : 4 ± 1°C  Voltage (V/Hz):220V / 50 Hz / 60 Hz  Microprocessor Temperature control  Power failure alarm, : Audible and visual alarm (72 hrs)  Upright Cabinet  Glass door  Foam insulation: High density CFC-free urethane  Danfoss compressor  Door lock / Casters :1 / 4 (Optional)  Interior light : 8W\*1  Shelves / Box : 5 / 20  Or Equivalent  USA/UK/EEC/Japan | 3 |  |  |  |  |
| 38 | **Refrigerator Centrifuge for Blood Bags**   * Microprocessor controlled. * Floor standing centrifuge, refrigerated with steady and efficient cooling controllable within a range of –20 to + 40ºC. * Lid locking and holding. * Lid dropping protection. * Emergency lid lock release. * Paneling finished in scratch and impact resistant coating. * Centrifuging chamber of stainless steel. * Key-operated switch for locking and protecting programs. * Motor overheating protection. * Chamber overheating protection in the ROTIXA 50 RS. * Imbalances switch off. * Easy exchange of rotors. * Automatic rotor recognition. * Conformity with the latest national and international safety standards such as IEC 1010-2-2, EN 61010-1 and all relevant EC regulations.   **Speed RPM (n)**  Input in increments of 10  **Relative centrifugal force RCF**  Input in increments of 1.  **Radius r/mm**  Needs to be entered when speed or RCF have to be determined.  **Running time**  Input in minutes and seconds, 0-99minutes.  **Run-up / run-down time**  Input of acceleration and braking ramps in levels 1 – 9, or time controlled in minutes and seconds, 0=un braked run-down.  **Deceleration with brake force cut-off**  Input of the cut-off speed in RPM  **Integral of the centrifugal acceleration**  Provides continuous information on the accumulated RCF the centrifuged material is exposed to during centrifugation.  **Temperature T/ºC**  With the ROTIXA 50 RS input in increments of 1ºC within a range of –20ºC to +40ºC  **Memory**  Since saving a lot of time the storing of programs in indispensable in laboratories with many different and complicated centrifuging tasks.  Up to 89 complete running programs can be memorized and recalled with their storing number. They remain in the memory even after the centrifuge has been switched off.  **Swing out Rotor**  Capacity: 4 x 500ml  Speed / RCF: 4500 rpm / 4777RCF.  Temperature: - 20ºC to +40ºC.  Timer: 1 s –999min: 59 s, continuous run.  Power supply: 220 – 240 V, 50/60 Hz.  Or Equivalent  USA/UK/EEC/Japan | 2 |  |  |  |  |
| 39 | **Platelets Incubator with Agitator**  USA/UK/EEC/Japan | 1 |  |  |  |  |
| 40 | **Cell Separator Aphaeresis Apparatus**  USA/UK/EEC/Japan | 1 |  |  |  |  |
| 41 | **Adjustable/Fixed Juster Micropipettes**  Adjustable pipettes.  Robust body construction.  smooth fatigue free operation.  precisely calibrated.  Corrosion free ceramic construction piston.  Tip holder & ejector fully autoclave able.  Measuring capacity of the following sizes.  Adjustable range of 0.2 to 2 Ul/Adjustable range of 10 uL , Adjustable range of 0-50 ml  Adjustable range of 50-100mL  Adjustable range of 100-1000mL  Or Equivalent  USA/UK/EEC/Japan | 10 |  |  |  |  |
| 42 | **Sprig Balance for Blood Bag**  USA/UK/EEC/Japan | 6 |  |  |  |  |
| 43 | **Hematology Analzyer 3 Parts Differential**   * Automated 3 part Hematology Analyzer, FDA Approvedwith Accurate and reliable results with minimum 20 parameters in both Whole blood (WB) mode and Pre-diluted (PD) mode. * Analysis Principle   i. WBC : DC detection method  ii. RBC/PLT : DC detection method  iii. HGB : Non-cyanide hemoglobin analysis method   * Throughput : minimum 60 samples/hour. * Simple to operate with user friendly illustrated/ intuitive graphic icons and color touch screen. * Result output is displayed on the screen and hard copy printout on Graphic printer. * On board storage capacity should be at least 35,000 including three histograms. * There must be an automatic probe cleaning after each aspiration to ensure minimal carry over. * Required sample volume WB mode is approx.50μL and PD mode is approx. 20 μL * It should have alarm to alert operator when reagents are empty or when waste is full. * The reproducibility of the results in whole blood mode. * Interface options available with LAN (Ethernet for host computer), Bar code reader for sample/reagents.   Or Equivalent  USA/UK/EEC/Japan | 1 |  |  |  |  |
| 44 | **Hematolgoy Analyzer 05 Parts Differential**  30 or more hematological parameters . WBC, RBC, and PLT.  Colored display  **Whole blood/Pre-dilution/Low WBC mode**  WBC, RBC, HGB, HCT, MCV, MCH, MCHC, PLT-I, RDW-CV, PDW, MPV, P-LCR, PCT, NEUT#, LYMPH#, MONO#, EO#, BASO#, NEUT%, LYMPH%, MONO%, EO%, BASO%, IG#, IG%  **Body Fluid Mode**  WBC-BF, RBC-BF, MN#, PMN#, MN%, PMN%, TC-BF#  RET#, RET%, IRF, LFR, MFR, HFR, RET-He, PLT-O, IPE#, IPF  Alarm system with auto diagnostic capabilities  60 or more samples/ hour capacity .  Blood sample volume upto 25ul  CBC test should incorporate within one minute & minimum quantity should be used  Should have Low WBC Mode  Limited <0.1, Accurate differential should be possible even in marked leukopenic sample.  Analysis data with histogram & Scattergrams  Or Equivalent  USA/UK/EEC/Japan | 1 |  |  |  |  |
| 45 | **Densitometer**  USA/UK/EEC/Japan | 1 |  |  |  |  |
| 46 | **Coagulation Analyzer**  Source lamp: Clotting – 4 LEDs with 660 nm/wavelength  Chromogenic – 1 LED with 405 nm/wavelength  Immunologic – 1 LED with 575 nm/wavelength  Sampling mechanism: Automated sample and standard predilution  Carrier system: Continuous-access sample racks. PT: 60 tests/hour. D-Dimer: 16 tests/hour. PT, APTT, Fibrinogen: 48 simultaneous tests/hour. PT/APTT/Fibrinogen/AT: 40 simultaneous tests/hour , PT/APTT/Fib/D-Dimer: 32 simultaneous tests/hour  Interfaces: RS232 serial interface to host PC / LIS,PS/2 or USB interface for barcode reader  Or Equivalent  USA/UK/EEC/Japan | 1 |  |  |  |  |
| 47 | **Sample Mixer (Roller)**  Description: Variable speed  Speed: 200-2500 rpm  Orbit diameter: 4.2 mm  Dimensions: 135 x 215 x 78mm  Net weight: 3.2 Kg.  Power supply: 120-230V, 50-60Hz, 50W  Or Equivalent  USA/UK/EEC/Japan | 1 |  |  |  |  |
| 48 | **Platelets Aggregometer**  USA/UK/EEC/Japan | 1 |  |  |  |  |
| 49 | **Bone Marrow Aspiration Needles**  USA/UK/EEC/Japan | 10 |  |  |  |  |
| 50 | **Bone Marrow Trephine Biopsy Needles**  USA/UK/EEC/Japan | 10 |  |  |  |  |
| 51 | **DLC Manual Counter**  USA/UK/EEC/Japan | 5 |  |  |  |  |
| 52 | **Slide Storage Cabinets**  USA/UK/EEC/Japan | 1 |  |  |  |  |
| 53 | **Micro Pipits/Jesters/Fixed/Adjustable**  Adjustable pipettes.  Robust body construction.  smooth fatigue free operation.  precisely calibrated.  Corrosion free ceramic construction piston.  Tip holder & ejector fully autoclave able.  Measuring capacity of the following sizes.  Adjustable range of 0.2 to 2 Ul/Adjustable range of 10 uL , Adjustable range of 0-50 ml  Adjustable range of 50-100mL  Adjustable range of 100-1000mL  Or Equivalent  USA/UK/EEC/Japan | 10 |  |  |  |  |
| 54 | **Lab Incubator Small Size**  Microprocessor Control.  PID temperature control.  LED digital display to show actual PV and preset chamber.  Over temperature safety device.  LED 3 digit display . 0.1°C stability Stainless steel interior and powder coated exterior.  Capacity 36 Liters .  chamber size : 330x330x330. 2 x shelves  Or Equivalent  USA/UK/EEC/Japan | 2 |  |  |  |  |
| 55 | **Laminar Flow (Cabinet)**  Nominal size 0.6 meter (2”)  Internal Work Area, Space: 0.39 m2 ( 4.2 sq.ft)  Average Airflow Velocity: 0.45 m/s (90 fpm) at initial setpoint  Air Volume: 603 m3 /h (355 cfm)  ULPA Filter Typical Efficiency: >99.999% at particle size between 0.1 to 0.3µm  Fluorescent Lamp Intensity At Zero Ambient: 1590 Lux (148 foot candles)  FDA / CE / JIS Marked  Or Equivalent  USA/UK/EEC/Japan | 1 |  |  |  |  |
| 56 | **Centrifuge Bench Type**  Complete with 24-place angle rotor.  Microprocessor-controlled.  Dimension 305x355x320 mm  Head : 24 nos.  Motor 80 W  Tachometer LED digital Dial tachometer  Timer LED digital, 99 min LED  Brake  Locking latch  Safety shutout  Accessories: two sets of 12 mm x 75mm and 12mm x 100mm tube holders for each tube size.  Or Equivalent  USA/UK/EEC/Japan | 1 |  |  |  |  |
| 57 | **Deionizer**  Inlet Water Pressure (dynamic): 345-414 kPa  Air Pressure: 586.5 kPa 13.6-17 sm3 /hr  Power Voltage, Frequency, Phase: 120 VAC 60 HZ 1 Ph  Feed Water Temperature: 7-38°C  Or Equivalent  USA/UK/EEC/Japan | 1 |  |  |  |  |
| 58 | **Distillation Plant**  USA/UK/EEC/Japan | 1 |  |  |  |  |
| 59 | **Electronic weighting balance**  Capacity & Resolution: 400g x 0.01g  Percentage: Resolution: 0.01/ 0.1 / 1%  Stabilization Time: 2 sec, Typically  Sensitivity drift: (10 ppm/°c (10ºc-30ºc)  Linearity: +/-0.02 g  Repeatability/st D.Dev:0.01g  Display Refresh: 5 or 10 times  Operating temperature: +5ºc-40 rh less than 85% no condensation  Or Equivalent  USA/UK/EEC/Japan | 1 |  |  |  |  |

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| --- | --- | --- | --- | --- | --- | --- |
| 60 | **Jester (fixed/Adjustable)**  Adjustable pipettes.  Robust body construction.  smooth fatigue free operation.  precisely calibrated.  Corrosion free ceramic construction piston.  Tip holder & ejector fully autoclave able.  Measuring capacity of the following sizes.  Adjustable range of 0.2 to 2 Ul/Adjustable range of 10 uL , Adjustable range of 0-50 ml  Adjustable range of 50-100mL  Adjustable range of 100-1000mL  Or Equivalent  USA/UK/EEC/Japan | 10 |  |  |  |  |
| 61 | **Automated Chemistry Analyzer**  Auto chemistry analyzer with through put of 500-600 test/hr  Open system fully automated, discrete, sample oriented, Random access chemistry analyzer with continuous loading of samples.Whole blood HbA1c,CRP, and Micro albumin etc  Capable for Electrolytes and HIA testing  Minimum 27 refrigerated Reagent position minimum 60- maximum 80 or above photometric test/hour  Quartz-iodine lamp 12V-20W / Halogen tungsten lamp air cooled by fan  Minimum distal water consumption  Mono- and bichromatic end point measurement with or Without bichromatic reagent blank and/or sample blank correction.  (Single, Dual and Triple reagent system) Kinetic  measurement with linearity check.  Auto dilution function in case of exceed analyte linear range Lot calibration  Barcode reader available  Disposable cuvettes  All options should be on 12 wavelengths  tests combination 6 - 10°C and not dependent on ambient temperature  Interactive Levey Jennings charts, daily, monthly and  batch QC with data archiving. Automatic QA and automatic calibration.  Minimal daily maintenance. No rear access required. Simple twice yearly preventative maintenance  Or Equivalent  USA/UK/EEC/Japan | 1 |  |  |  |  | |
| 62 | **Electrolyte analyzer**  Electrolyte Analyzer for Whole Blood, Serum, Plasma, or Urine.  100ul Whole Blood, Serum or Plasma. 60ul Capillary Sample  Detection Range  Blood Na+:20-200mmol/L  K+:0.2-40mmol/L  Cl-:25-200mmol/L  Urine Na+:25-1000mmol/L (undiluted)  K+:1.0-500mmol/L (undiluted)  Cl-:25-500mmol/L (undiluted)  Li++ & Ca++ can also be performed on same instrument with same reagent pack.  Analysis Time 60 sec or better  Automatic or on demand Calibration  Data Storage facility . Automatic calibration.  Alphanumeric display. 40 column printer RS-232 communication port  Or Equivalent  USA/UK/EEC/Japan | 1 |  |  |  |  | |
| 63 | **Jester (Fixed /Adjustable)**  Adjustable pipettes.  Robust body construction.  smooth fatigue free operation.  precisely calibrated.  Corrosion free ceramic construction piston.  Tip holder & ejector fully autoclave able.  Measuring capacity of the following sizes.  Adjustable range of 0.2 to 2 Ul/Adjustable range of 10 uL , Adjustable range of 0-50 ml  Adjustable range of 50-100mL  Adjustable range of 100-1000mL  Or Equivalent  USA/UK/EEC/Japan | 10 |  |  |  |  | |

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| 64 | **Miscellaneous disposable , glass ware etc**  **Local**  GLASS WARES   * Test Tubes   Size:   * 12 x 75 mm * 12 x 100 mm * 16 x 150 mm * 18x150 mm * Glass Slides   Plane Glass Slide  Size: 1ʺx3ʺ  Thickness: 1-1.2 mm  Frosted Glass Slide  Size: 1ʺx3ʺ  Thickness: 1-1.2 mm   * Glass Cover Slips   Size   * 24x 50 mm * 22x22 mm * 18x18 mm * Beakers * 50 ml * 100 ml * 500 ml * 1000 ml * Conical Flasks * 50 ml * 100 ml * 500 ml * 1000 ml * GLASS PIPPETTES * 1 ml * 5 ml * 10 ml | 3 |  | |  | |  | |  |
| **Radiology Department** | |  |  | |  | |  | |  |
| 65 | **Digital Radiography with Radiology Information System**  **System combination**  50 kW or more High frequency X-Ray Generator.  4 ways floating top table with fixed heigth  Floor mounted tube column stand  Manual collimator  200KHU X-ray tube  Wall chest bucky stand  Pair of HT cables 10m or more.  Flat Panel Detector for Table Bucky  Flat Panel Detector for Chest Bucky  Radiology Information System (RIS) for 3-4 moduelties  X-RAY GENERATOR  High frequency, microprocessor control x-ray generator  Frequency 20KHz or more.  Radiographic kVP 40~150kVp with in one kV step.  Radiographic mA 10~600Ma or better.  mAs range: 0.5~500mAs  Exposure time: 1 ms ~ 6s or more.  kVp and mAs selection. 3 point kVp, mA & time selection.  400 or more Anatomical program.  Three phase, 380-400V x-ray generator.  **4 WAYS FLOATING TOP TABLE**  Electromegnatic brakes  Longtudinal travel of table top: 900mm or more Lateral/transfer travel travel of table top: 220mm or more.  Longitudnal travel of bucky: 510mm or more  Moving grid  Grid ration 40 l/sec, 12:1  **FLOOR MOUNTED TUBE COLUMN STAND**  Tube support balancing System with counterweights and Electromagnetic brakes.  Control panel with push button to control vertical, longitudinal and transverse travel.  Rotation of tube – collimator assembly +/-180°  Longitudinal travel 1450mm or more  Vertical travel : 400-1900mm  Later/transfer travel 300mm or better  **MANUAL COLLIMATOR**  Multi leaf Manual collimator.  LED light indicator for alignment with bucky.  **200KHU X-RAY TUBE**  Dual focus x-ray tube  Small focus 0.6mm  Large focus 1.2mm  Rotating anode  Maximum tube voltage 150kVP  Anode heat storage capacity 200KHU  **WALL CHEST BUCKY STAND**  Chest bucky stand with the cassettes formats maximum up to 35x43cm  Vertical travel 1500mm or better.  Moving grid: 12:1 ratio.  **PAIR OF HT CABLES 10M OR MORE.**  **FLAT PANEL DETECTOR (2 nos.)**  Flat Panel Detector, 43x43  Cesium Iodide (CsI) with amorphous silicon  Pixel Pitch: 148µm or better  Active Pixels: 2648 (v) x 2984 (h) or better  Detective Quantum Efficiency (DQE): more than 70%  A/D Conversion: 14 bits  Complete with workstation and viewing software  Processor : Intel i5-4590 or equivalent  Memory : 4GB or more  Hard Drive : 500GB or more  Adapter Card, Ethernet card  Complete with Color monitor 21” or more, mouse, key board,  DICOM compliance: DICOM 3.0  DICOM work list from HIS/RIS  DICOM sent, DICOM image print  Software :  Input patient data : Selection of exam, study , procedure , patient ID,  Setting of x-ray exposures  Image processing software  Software for digital radiographic image in DICOM format :  Improve image contract  Adjust dynamic range  Reduce the noise  Radiology Information System(RIS)  RIS for 3-4 modalities  Upgradable to other modalities  Easy to configure  Viewing station for 3-4 radiologist  Advance DICOM print for different lay out and sub layout  Paper print, e-mail and CD burn  Capable to export DICOM images in different format.  Capable to store patient history and patient reporting.  Compatible Laser printer  High Quality Laser Imager  Load film four film Sizes.  Dicom interface.  Automatic Image Quality Control  True Laser Technology.  Dual/Single Tray  Throughput : 40-50 films/hour  Pixel pitch: 300 or more/inch  Compatible UPS for workstation  Complete with 5 nos. Lead apron  Civil and electrical renovation for Radiography room  Contractor / firm will have to ensure that all necessary electrical board, cables, earthling plates will the supplied and installed in the Digital Radiography room.  Renovation of room as per PNRA standard including an air condition  Or Equivalent  USA/UK/EEC/Japan | 1 |  | |  | |  | |  |
| 66 | **Ultrasound Machine General Purpose**  Fast image processor and two active connectors. Gray shades 256 gray shades or better. Frame rate: 60 frames /sec or more  Dynamic range 150dB or more.  Display Monitor: 12” or more  High resolution, Non flicker TFT/LCD/LED.  Imaging modes: B-mode  B+M mode  M-Mode  2B-mode  4B mode  Tissue Harmonic image.  Measurement Packages: Obestratic Measurement Package  Gynecology Measurement Package  Urology Measurement Package  Small parts Measurement Package  Vascular Measurement Package  DICOM 3.0  PDF report function  160GB hard drive, DVD, 4 USB  Complete with the following:  Convex probe Multi frequency between 2~6 MHz or better  Linear probe Multi frequency between 5~11 MHz or better  B/W Printer with 5 nos. paper role.  Trolley (local)  Compatible UPS  FDA 510(k) approved  CE Marked  Or equivalent  Preferably UK/USA/Japan/EEC  Besides equipment having FDA (510) K and CE Approval from other countries can be considered. | 4 |  | |  | |  | |  |
| 67 | **Mobile Ultrasound Machine with Printer**  Fast image processor and two active connectors.  Gray shades 256 gray shades or better.  Frame rate: 60frames /sec or more  Dynamic range 150dB or more.  Display Monitor: 12” or more  High resolution, Non flicker TFT/LCD/LED.  Imaging modes: B-mode  B+M mode  M-Mode  2B-mode  4B mode  Tissue Harmonic image.  Measurement Packages: Obestratic Measurement Package  Gynecology Measurement Package  Urology Measurement Package  Small parts Measurement Package  Vascular Measurement Package  DICOM 3.0  PDF report function  160GB hard drive, DVD, 4 USB  Complete with the following:  Convex probe Multi frequency between 2~6 MHz or better  B/W Printer with 5 nos. paper role.  Trolley (local)  Compatible UPS  FDA 510(k) approved  CE Marked  Or equivalent  Preferably UK/USA/Japan/EEC  Besides equipment having FDA (510) K and CE Approval from other countries can be considered. | 1 |  | |  | |  | |  |
| 68 | **Lead Apron**  0.35mmpb lead equivalent  60/100mm  Or Equivalent  USA/UK/EEC/Japan | 5 |  | |  | |  | |  |
| 69 | **X-ray 500mA with Digital Radiography**  500mA/125kV High frequency X-Ray generator with universal tube stand and mobile table.  **X-RAY GENERATOR :**  High frequency inverter type microprocessor x-ray generator.  Three phase , 40 kW Generator.  Automatic line compensation.  Over load tube protection.  Radiographic kVP 40~125kV  Radiographic mA 10~500mA or more  Exposure time: 1 ms ~ 6s or more.  500 or more Anatomical program.  **X-RAYTUBE:**  Maximum Tension, 125 KVp.  Small focus 1.0 mm.  Large focus 2.0 mm.  Anode Heat capacity 140 KHU  **UNIVERSAL STAND:**  Arm: Source image distance (S.I.D): from 125 to 175cm or better.  Vertical movement : 105cm or better.  Arm’s rotation: +/- 120° or better.  Tube’s rotation: +/- 180°.  Bucky center/floor distance: From 39 to 155 cm.  Tilting : +/- 45°.  Grid: ratio 8:1 or better  **MOBILE X-RAY TABLE:**  table top dimension: length: 190~220 cm.  height 60~90cm.  Table top weight capacity not less then 200kg.  **MANUAL COLLIMATOR WITH LIGHT INDICATOR**  **FLAT PANEL DIGITAL X-RAY DETECTOR (FPD)**  14x17” Cesium Iodide (Csl) with Amorphous Silicon  Pixel Matrix: 3556 (H) × 4320 (V)  Pixel Pitch: 100μ m  DQE : > 70 %  A/D Conversion: 14 bit  **WORK STATION STATION (2 NOS)**  Processor : Intel Core I3-2120, 1GT)  Memory : 8GB ,1600MHz /Hard Drive : 500GB 3.5inch  Complete with hardware such as mouse, key board etc  TFT Color monitor 18” or more/Resolution 1280 x 1024 Pixel  DICOM Compliant DICOM 3.0 Part 14  Acquisition software:  Operation software for generator and digital panel  Generator Synchronisation  Image processing  Image management (PACS, HIS/RIS etc…)  full DICOM 3.0 Compatibility  DICOM worklist from HIS/RIS Store Images through PACS network system  DICOM image print  DICOM MPPS  DICOM CD/DVD  Image quality control tools with pixel fixing tools  AEC and APR  Image cropping, Image mirror, rotate etc  Or Equivalent  USA/UK/EEC/Japan | 1 |  | |  | |  | |  |
| 70 | **X-ray 300mA with Digital Radiography**  30 kW or more High frequency X-Ray Generator.  4 ways floating top table with fixed heigth  Floor mounted tube column stand  Wall Chest stand  Manual collimator  140KHU X-ray tube  Pair of HT cables 10m or more.  **X-RAY GENERATOR**  High frequency, microprocessor control x-ray generator  Frequency 20KHz or more.  Radiographic kVP 40~125kVp with in one kV step.  Radiographic mA 10~320Ma or better.  mAs range: 0.5~500mAs  Exposure time: 1 ms ~ 6s or more  point kVp and mAs selection. 3 point kVp, mA & time selection.  400 or more Anatomical program.  phase, 380-400V x-ray generator.  **4 WAYS FLOATING TOP TABLE**  Electromegnatic brakes  Longtudinal travel of table top: 900mm or more Lateral/transfer travel travel of table top: 220mm or more.  Longitudnal travel of bucky: 510mm or more  Moving grid  Grid ration 40 l/sec, 12:1  **FLOOR MOUNTED TUBE COLUMN STAND**  Tube support balancing System with counterweights and Electromagnetic brakes.  Control panel with push button to control vertical, longitudinal and transverse travel.  Rotation of tube – collimator assembly +/-180°  Longitudinal travel 1450mm or more  Vertical travel : 400-1900mm  Later/transfer travel 300mm or better  **WALL CHEST BUCKY STAND**  Chest bucky stand with the cassettes formats maximum up to 35x43cm  Vertical travel 1500mm or better.  Moving grid: 12:1 ratio.  **MANUAL COLLIMATOR**  Multi leaf Manual collimator.  LED light indicator for alignment with bucky.  **X-RAY TUBE**  140khu X-Ray Tube  Dual focus x-ray tube  Small focus 1.0mm  Large focus 2.0mm  Rotating anode  Maximum tube voltage 125kVP  Anode heat storage capacity 140KHU  PAIR OF HT CABLES 10M OR MORE.  **OPTIONAL:**  PORTABLE FLAT PANEL DETECTOR  Flat Panel Detector, 43x43  Cesium Iodide (CsI) with amorphous silicon  Pixel Pitch: 148µm or better  Active Pixels: 2648 (v) x 2984 (h) or better  Detective Quantum Efficiency (DQE): more than 70%  A/D Conversion: 14 bits  Complete with workstation and viewing software  Processor : Intel i5-4590 or equivalent  Memory : 4GB or more  Hard Drive : 500GB or more  Adapter Card, Ethernet card  Complete with Color monitor 21” or more, mouse, key board,  DICOM compliance: DICOM 3.0  DICOM work list from HIS/RIS  DICOM sent, DICOM image print  **SOFTWARE :**  Input patient data : Selection of exam, study, procedure , patient ID,  Setting of x-ray exposures  Image processing software  Software for digital radiographic image in DICOM format :  Improve image contract  Adjust dynamic range  Reduce the noise  Civil and electrical renovation for Radiography room  Contractor / firm will have to ensure that all necessary electrical board, cables, earthling plates will the supplied and installed in the Radiography room.  Renovation of room as per PNRA standard including an air condition  Or Equivalent  USA/UK/EEC/Japan | 1 |  | |  | |  | |  |
| 71 | **Mobile 100mA Radiography**  High frequency X-Ray inverter type Generator  Having output power of 4kW or more  X-Ray tube protections, KVP range: 40-110kV or more  MA Range: 10-100mA or better, mAS range: 1.0-200mAs or better  Centering light indicator  Standard power supply cable,  X-ray exposure switch cable,  Vertical movement of the Arm to lower or raise the tube collimator assembly  Rotation of the Collimator with reference to the power module (+/- 90deg) or better .  Or Equivalent  USA/UK/EEC/Japan | 1 |  | |  | |  | |  |
| 72 | **Color Doppler Ultrasound Machine with 3 Probes**  21 inch medical grade LED monitor with up/down and left/right rotation or better.  12 inch medical grade touch screen or better with adjustable angle of 10° or more.  Articular arm, flexible adjusting control panel including height and left/right rotation.  Backlit alphanumeric keyboard.  5 transducer ports with at least 4 active ports and one additional Port for Pencil probe with automatic  recognition.  Built-in Gel Warmer  Complete DICOM 3.0 Connectivity  500 GB Hard Disk or better.  Wireless Wi-Fi Connection.  Inbuilt ECG Module as standard.  4 USB Ports or more  DVD-RW  Modes as standard:  B Mode.  3D Mode.  Dual Mode / Quad Mode.  Stress Echo Protocol.  User Defined Pre-set image settings.  User Define Keys for Calculation.  Speckle reduction Technology.  5-band adjustable frequency in B mode.  Tissue characteristic index.  Tissue Harmonic Imaging mode.  Pulse Inversion Harmonic Imaging mode.  Image rotation function.  Spatial Compound imaging.  Frequency Compound imaging.  Trapezoidal imaging (with multiple angle selection for the trapezoid shape).  Color mode.  PDI mode.  DPDI mode.  PW mode.  HPRF Support.  Duplex and Triplex mode.  FreeHand 3D.  Anatomical M mode with multiple scan lines with rotatable angles.  Color M mode.  TDI mode.  CW mode.  Auto EF, Auto IMT, Live Spectral Auto Trace, Auto NT, Auto follicle Calculation.  Real time panoramic imaging in B mode.  Real time panoramic imaging in color flow mode.  Needle enhancement function for enhanced needle visualization for Biopsies and Interventional cases.  Dual Live Mode: View B-mode image and Color Flow image side by side in two separate windows.  Steer Mode: Beam angle steering for linear probe.  Patient temperature detection technology for TVS Probe.  One button image optimization for B-mode, Color mode and PW/CW modes.  Biopsy guide through software.  Scanning guide for Obs/gynae patients with pre-stored images and scanning planes to assist the doctor in  acquiring correct images.  Features as standard:  Contrast Imaging.  Advanced Compression Elastography Imaging on all probes.  Digital front-end technology.  Multi-beam forming technology.  Continuous dynamic focus for improved imaging.  High pulse repetition frequency technology.  4D imaging.  4D rendering mode with light source.  4D rendering mode with depth information.  Inbuilt TEE (adults & pediatrics) probe compatible hardware and software for future upgrade.  Technical features:  Dynamic Range: 30dB to 260dB or better  Gain Control: Separate knobs for Gain control of B-Mode, M-Mode, Color-Mode, PW /CW-Mode.  TGC: 8 bands or more  Lateral Gain Compensation: 2 bands or more  Real Time Image Zoom: 1-8 times or better  Physical Channels: 100 Nos. or more  Digital Channels: 89,000 Channels or more  B-Mode Frame Rate: 1300 fps or better  Color Mode Frame Rate: 150 fps or better  Cine Loop Playback: 800 frames or more.  PW Spectrum Playback: 120s or more.  Scanning Depth: 40.0cm or better.  Standard measurement packages  Basic B mode measurement.  Basic M mode measurement.  Basic spectral Doppler mode measurement.  Color flow volume measurement.  Obstetrics measurement package.  Breast measurement package.  Gynecology measurement package.  Abdomen measurement package.  Vascular measurement package.  Urology measurement package.  Small parts measurement package.  In built PDF reporting system with complete patient information, data and images.  Complete with:  1 x Convex Probe: Frequency range: 3.5 – 6.0MHz, Elements: 128 or better.  1 x Linear Probe: Frequency range: 7.5 – 16.0MHz, Elements: 192 or better.  1 x Intra cavity Probe for prostate ultrasound.  1 x B/W Thermal Printer  1 x Imported UPS with backup of 10 minutes or more  1 x Gel Bottle  1 x Footswitch  1 x User Manual  1 x ECG leads set  Optional accessories:  1 x Prostate Biopsy probe.  FDA 510(k) approved  CE Marked  Or equivalent  Preferably UK/USA/Japan/EEC  Besides equipment having FDA (510) K and CE Approval from other countries can be considered. | 1 |  | |  | |  | |  |
| 73 | **CT SCAN**  **Latest Generation whole Body more than 128-Slices Ct Scanner with Latest Clinical Application Softwares**  **GANTRY**   * Gantry bore to be at least 75cm or more. * Minimum gantry rotation speed to be at least 0.5sec for more than 128 slices per 360-degree rotation or better. * Gantry tilt must be +/-30 degrees. System to be capable of acquiring helical/spiral with gantry tilting.   **TUBE**   * Heat storage capacity of at least 5.0mhu or more. * Anode heat dissipation of at least 800khu/min.   **GENERATOR & DETECTOR:**   * High frequency type maximum power of at least 50kw or more. 80 to 135 kvp range. And tube current of 420ma or more. * Dose reduction hardware/soft ware. * Calculate patient dose in milli-gray preferably before axial acquisition. * Low contrast delectability (LCD) calculated on a catphan ct phantom of 3mm resolution with a CT number of 3HU (0.3%) contrast difference. * Spatial resolution of 14lp/cm at mtf 2% or better. * Slice thickness of 0.6mm or better. Less will be preferred. * Scan length of at least 1.8 meters in a single acquisition.   **TABLE:**   * Single acquisition scans range of atleast 1.8meter or more. * Width: 470mm or more * Weight bearing capacity of minimum 220kg.   **CONSOLE COMPUTER**   * System architecture and operating system must be based on latest technologies. * Multi tasking and parallel processing CPU system, 64 bit CPU or better. * Atleast 900 GB of storage space or more for 500,000 or more image storage. * Ram: 32 GB or more * Real time spiral/helical reconstruction of 20-images per second with iterative dose reduction applied. * Console monitor color 19” TFT type monitor. * Iterative dose reduction / technology. * DVD / CDR.   **Additional multi-modality work station: (should be from the original manufacturer of ct scanner). Three independent stand alone workstations are required, these should not be thin client.**   * High-speed link to operator console on Dicom Network. * System architecture and operating system must be based on latest dual Xeon processor or bit risc. * Should have Hi-Resolution LCD/TFT screen of 18 inch or more. * CD / DVD writer. * Dicom viewer for viewing ct. * Laser black & white printer capable of printing on multi size papers, 1200dpi or better.   **SOFTWARE (INCLUDED AS STANDARD):**   * Full color volume rendering 3D at console and workstation. * Isotropic volume acquisition at console. * CT Angio both at console and workstation. * Vessel stenosis analysis at console and workstation. * 3D surface rendering at both console and workstation. * Curved planer reformation at console and workstation. * Contrast media based synchronizing soft ware at console. * ECG gated scan system. * Cardiac function analysis software. * Virtual endoscopy / colonoscopy / Bronchoscopy at workstation and console. * Cerebral blood flow / head perfusion at console and work station. * 3D direct CT DSA subtraction with orbital synchronization on console. * Lung volume analysis software on console and workstation. * 3D direct lung subtraction software for visualizing lung perfusion defects using iodine contrast images on console. * Fly through software at console and workstation * 3D CT Fluoroscopy with real time imaging and display of at least 12 frames/sec with required hard ware/ soft ware complete with one high-resolution monitor in ct room. Live needle images along with display of coronal, sagital and axial views, needle guidence software for accurate needle planning to be provided in system. * Fat index calculation and automatic color display on console. * Single energy / dual energy metal artifact reduction function. * Dual energy scanning system with blending software for combining images acquired at different KV’S. System should be able to acquire 2 energies 120KV and 80 KV in one scan. System should show 3 data sets of images at 80/90KV, 130/140KV, and blended with both energies combined. Dual energy latest applications like composition analysis to detect uric acid for gout, and to analyze renal calculi. Iodine maps for detection of tumors in lungs, liver etc. The dual energy scanning should be based upon ultrafast KV switching or slow Kv switching or filter based twin beam or dual detector technology. * Lateral table shift function.   **DICOM 3 CAPABILITY**   * Dicom-3 capability for send, receive, archive, retrieve and print.   **POWER REQUIREMENT:**   * Three Phase With Line Voltage of 220V, 50 HZ.   **ACCESSORIES:**   * Dicom compatibility dry laser imager for film size 14” x 17” including 500 films. * 80KVA online sine wave ups for whole system with a minimum backup of 10 minutes on full load. * Dual head programmable, power injector with flow/volume and temperature control for both head independently, mounted on mobile base/ceiling suspended with 100 syringes of 150 ml capacity and connecting tubes. * Standard set of phantoms for calibration of ct. * Table accessories: table pad, arm rest, patient restraint kit, IV pole, infant cradle, flat head holder * Lead glass for control room 2x3 feet 0.5 mm PB. Equivalent. * **Renovation** of the CT Scan suit for the installation including air conditioners shall be responsibility of vendor.   **INSTALLATION**  Complete Installation of CT  **WARRANTY:**  Five Years  **COUNTRY OF MANUFACTURE AND ORIGIN:**  Country of Manufacture and Origin Should be USA / Europe / Japan  **SAFETY & QUALITY STANDARDS:**   * Equipment should be USA, Europe or Japanese manufactured * Lead lining of the ct room (where required) will be done by the vendor who will responsible for complete interference free installation and its surroundings to ensure artifact free examination. * **SERVICE AND OPERATIONAL** Manuals for all supplied software and hardware) in English will be Provided and will be placed in the respective department.   **POST WARRANTY AND SERVICE CONTRACT**   * Quote post warranty for next 10 years with all parts and labor per annum payable in equivalent pak rupees at the exchange rate prevailing at the time of billing. The post warranty must be offered by the manufacturer. local firms post warranty will not be accepted.   **PRE-REQUISITE:**  a. The quoted equipment must be manufactured in USA, Europe or Japan only.  b. The medical equipment must comply with 510(k) FDA (Food & Drug Administration), and European MDD (medical device directive) / Japanese MHLW (Ministry of Health, Labour & Welfare) for specific quoted model.  c. The following are the mandatory clauses and the firms not fulfilling these clauses, will not be considered:  (a) The firms must quote their latest and leading brands from the above mentioned origins with the proven past performance nationally and internationally. The firm must possess its related back up support services including trained engineers, workshop facilities, spare parts availability and repair/ calibration tools etc.  (b) The quoting firm should have proper infrastructure to handle and execute the complete package with previous experience of CT Scan systems.  (c) The quoting firm must have installed at least 5-units of the similar CT Systems in Pakistan and must bring satisfactory recommendation letters from at least 5 local users along with installation certificates.  (d) The firm must have sole agency from manufacturer atleast for five years and must have an established track record of CT to government supplies. | 01 |  | |  | |  | |  |
| 74 | **Dialysis Machine**  Complete safety alarm with 30 min battery backup  The machine dialysis data alarm and display  Life Records automatically and necessary data can be shown on screen.  Dialysis Machine Capable, Bicarbonate Dialysis and sequential/Isolated Ultra-filtration  Easy to see TFT/LCD Touch Panel and easy to handle control panel  Dialysis treatment parameters such as UF Goal, UF Rate, Blood Flow and Syringe Flow are easily settable on the control panel.  Profile  UF Rate and Dialysis conductivity are selectable.  Selectable Concentrate  Safety Design  Double Chamber System to Precise UF VolumetricControl  Supply Water Flow 500 ml/min or more.  Supply Water Temperature 10-25 C  Setting range  Dialysis Flow 300-800 ml/min  UF rate 0.0.10 – 5.00 L/h.  Dialystate type Bicarbonate/acetate  Dialysis Conductivity 130-160 mEq/L( 12ms/cm-18ms/cm)  Blood Pump segment  Tube Diameter 8.0mm  Tube Diameter 6.35mm  Heparin infusion rate  Detector  Air bubble Detector Ultrasonic sensor detection system  Blood leak detector  Monitor section  Dialysate temperature 32 to 41C  Dialysate flow 300-800 ml/min  Arterial pressure indicator  Venous pressure indicator  Transmembrane pressure indicator  UF volume indicator 0.00-40.0L  Dialysate pressure indicator  Heparin pump flow indicator  Disinfection and Rinsing Chemical and heat disinfection  or Equivalent  USA/UK/EEC/Japan | 40 |  | |  | |  | |  |
| 75 | **RO Plant (for 40 Dialysis Machines)**  1800 Liters/hour capacity Online R.O. complete with High Rejection TFC membrane  S.S. membrane housing  Permeate recovery higher than 50%  All pipes and fittings should be of high quality stainless steel  Conductivity, TDS, Flow, Temperature and pressures display panel  or Equivalent  USA/UK/EEC/Japan  Pre-Treatment  Sand Filter – 1 no.  Activated Carbon Filter – 1no.  Dual Softener with auto-changeover system -  2 nos.  Booster pumps – 1 no. | 2 |  | |  | |  | |  |
| 76 | **RO Plant (for 10 Machines)**  600 Liters/hour capacity Online R.O. complete with High Rejection TFC membrane  S.S. membrane housing  Permeate recovery higher than 50%  All pipes and fittings should be of high quality stainless steel  Conductivity, TDS, Flow, Temperature and pressures display panel  or Equivalent  USA/UK/EEC/Japan  Pre-Treatment  Sand Filter – 1 no.  Activated Carbon Filter – 1no.  Dual Softener with auto-changeover system -  2 nos.  Booster pumps – 2 nos. | 1 |  | |  | |  | |  |
| 77 | **Dialyzer Processor**  Inlet pressure 138-279.3 kPa  Average flow rate:1.75 liter/min  Water Temperature 59-75 F  Drain: should be higher than floor level  or Equivalent-FDA Approved | 2 |  | |  | |  | |  |
| 78 | **Concentration Unit**  High quality, corrosion resistant material Tank  500 Liters capacity  Control Panel  Agitator motor  Input water solenoid valve  Coupler  or Equivalent FDA approved | 2 |  | |  | |  | |  |
| 79 | **Crash Cart**  ABS structure, resistant to erosion  Five(5) drawers: 2 small and 3 big.  Each inner with partitions can be organized freely into different size units for placement of medicine  With handles to move the emergency cart  Defibrillator tray  Telescopic I.V. pole and CPR board  Sliding side shelf  Bumper protector on corners  Oxygen tank holder at the back  High strength ABS material, with side rails around  All drawers should with central locker  OR Equivalent USA/UK/EEC/Japan | 02 |  | |  | |  | |  |
| 80 | **Electro Hydraulic Universal Operation Table**  Multipurpose Electro Hydraulic Operation table with table top slid function.  Hand switch control should have a back lit for convenient and ease of operation.  Patient weight bearing capacity should be 300kg or more.  Longitudinal slide of 10” or more.  Table should be capable to operate completely manually for all movement when there is no electricity.  Built in x-ray cassettes channel.  Radio translucent table .  Safety side rail, emergency stop button , hand switch should have special function of patient positioning, up and down, left and right tilt, up and down back ,sliding functionetc.  Essential function such as lock/unlock, level, flex/reflex should be incorporated.  Normal orientation slide to head end 46” or more.  Normal orientation slide to leg end 12” or more.  Range of table movement  Head: +/- 90° or better  Back: +70°/-40° or better  Leg: +70°/-80° or better  Trendelengburg : +/-30°or better  Lateral tilt : +/-18° or better  Height from floor to 40” or better  Flex : 25°  Reverse flex : 30°  Reflex : 100°  Reverse reflex :100°  Kidney elevator  Complete with screen frame, foot controller , transfer board, arm board, drain pan, cysto-lift knee crutch with side rail locks. mattress etc.  OR Equivalent  USA/UK/EEC/Japan | 04 | |  | |  | |  |  |
| 81 | **OT Ceiling Light to be attached with Laminar Flow**  Double dome , 160,000 + 160,000.00 Lux  Ceiling mounted LED Light with dual dom  160,000+160,000.00 Lux  Touch less LED OT Light  Control of all functions through sensor technology  LED life : 50,000.00 hours or better  3000K - 5000K adjustable color temperature  Dimming range: 5% - 100%  Light Field Diameter : 250mm or more  Illumination depth : 1500 mm or more  Detachable &Autoclavable Hand Grip  OR Equivalent  USA/UK/EEC/Japan | 04 | |  | |  | |  |  |

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| 82 | **Anesthesia Machine**  with integrated electronic ventilator, ETCO2 and Anesthesia Gas monitoring  Large integrated TFT touch Display, at least 10” or more.  Various monitoring wave form and parameters in different colors  VCV, PCV, SIMV, Spontaneous, PSV modes  2 Station Selectec backbar with integrated pressure relief valve  Integrated CO2 absorption system, 1.4 liter or more.  Integrated oxygen monitor  6 tube of flow meters for three gas  Flow meter : O2: 0-1L/min, 1-10L/min or more  N2O: 0-1L/min, 1-10L/min or more  Air: 0-1L/min, 1-10L/min or more  Gas System : O2 deficiency alarm  Common gas outlet with Oxygen flush hook  Breathing Circuit hook  Three drawers unit  Writing tablet  Working mode: closed, semi-closed, semi open  Four cylinder yokes plus pipeline  Electronic ventilator  Driven mode: electrically controlled  Ventilator for adult and pediatric  Model: VCV, PCV, SIMV, Spontaneous, PSV modes  Tidal volume: 20-1500ml  Ventilator frequency : 4-60bpm  I:E ratio : 1:05 to 1:6  Electronic PEEP: 5-20cmH2O  Battery back 4 hours or more  Electronic alarms: Automatic and user setable  Alarms: Mains failure, low battery, low pressure, low volume, apnea etc.  Vaporizer: Enflurane OR Isoflurane OR Sevoflurane  Or equivalent  USA/UK/EEC/Japan | 04 |  |  |  |  |

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| 83 | **Surgical Diathermy**  High frequency surgical diathermy for mono polar and bi polar cutting and coagulation for use in general surgery, ENT, Gynaecology, Urology, Orthopedic, etc.  Output frequency 320Khz ~ 375KHz or more.  Output power 300-400W  Monopolar cutting 300 W  Pulse 40W  Blend : 230W or more.  TUR (transurethral resection): 300W  TUR-Pulse: 50W  Monopolar coagulation  Soft 100W, Spray 120W, Bipolar Cutting  Bipolar cutting 100 W or more  Pulse : 100 W ore more  Bipolar coagulation : 100 W  Complete with following accessories:  Power cable, Footswitch, double, HF-hand piece with finger switch, Knife electrode straight 4mm or better with shaft, Loop-electrode diameter of 10mm or better with shaft of 4 mm or better, Bipolar forceps , bipolar cable, patient plate, trolley  OR Equivalent  USA/UK/EEC/Japan | 04 |  |  |  |  |
| 84 | **BP Apparatus**  Mercury type  Mercury 300mm Hg with die cast metal housing large reservoir with spilling over arrangement (auto lock), tube with 3 mm silicone. Rubber bulbs. Velcro cuff with marking for Adults (Extra Large and Large), Pediatric and Neonates. Complete with basket for storage of cuffs  OR Equivalent  USA/UK/EEC/Japan | 14 |  |  |  |  |
| 85 | **CSSD Sterilization Unit**   1. Steam Sterilizer / Autoclave (Qty: 1)  * Touch Screen 10 inch or more on loading side * PLC control with built-in UPS backup device * External Dimensions: 1424 x 1850 x 1278 or equivalent * Chamber Dimensions: 666 x 666 x 1000 or equivalent * Chamber Volume: 400 liter or more * Dry waterless vacuum system * Discharge cooling device * Internal steam generator 45KW * Printer on loading side * Chamber, made of AISI316Ti stainless steel, thickness 8mm, electro polished Jacket, made of AISI 316Ti, thickness 8mm,with reinforcing ribs, (a full jacket cover the chamber) * Door made of AISI316Ti stainless steel (no welding parts) * Air-chamber type gasket for sealing * Hydraulic system made entirely of AISI316 stainless steel * Automatic drain device * Remote maintenance control device.  1. External Trolley (Qty: 1)    * Should made of AISI 304 stainless steel    * 4 swivel rubber wheels, anti-static, to 120mm,two of which with brakes    * Two stainless steel rails in its interior for the sliding of the internal trolley    * All the edges that could be in contact with the operator are rounded    * Should be from Autoclave manufacturer 2. Internal Trolley (Qty: 1)    * Should made of AISI 304 stainless steel    * Equipped with 8 wheels    * Recognition through magnet    * Should be from Autoclave manufacturer 3. Washer Disinfector (Qty: 1)  * PLC computerized control system * Capacity 350 liter or more * Chamber Dimensions: 1200 x 2000 x 1062 or equivalent * Overall Dimensions: 630 x 680 x 840 or equivalent * Self-cleaning wash chamber and inner door made in stainless steel AISI 316L, anti-acid in molybdenum nickel – chrome, with rounded angles. * Outer panels in polished stainless steel AISI 304 for easy cleaning. * Hydraulic system made entirely of stainless steel AISI 304 * Doors made with double tempered glass * Doors activated via touch screen. * Heat and sound insulation of the chamber and doors made with compact material. * Duct for the introduction * 40 programs: 20 pre-set factory programs according to the selected A0 value and 20 programs that can be memorized on the basis of the user’s needs. * Integrated detergent cabinet, extractable on the unclean side, capacity: two 5lt canisters + one 2lt canister * Peristaltic pump for dosing alkaline liquid detergent * Peristaltic pump for dosing acid neutralizer * Dosing control through volumetric flow meters * Level sensor for detergent control (Lack of detergent warning on the display) * Electrical heating for washing chamber water. * Independent electrical power switch-box and control panel * Security thermostats (manual reset), easily accessible. * Service call indicator. * Input/output Menu for the diagnostic monitoring of inputs and outputs. * RS232 connection for technical actions * 15 standard DIN trays * Spray arm at the bottom of the chamber, spray arm on the ceiling of the chamber and injection system with rapid direct coupling. * dimensions485x250x50 mm  1. External Trolley (Qty: 1)    * Should made of AISI 304 stainless steel    * 4 rubber wheels, anti-static, to 120mm, swivel and two with brakes    * With two stainless steel rails for the sliding of the internal trolley    * Should be from Washer Disinfector manufacturer 2. Instrument Internal Trolley (Qty: 1)    * Should made of AISI 304 stainless steel    * DIN baskets height from 50 to 70mm. Equipped with:    * spray arms    * 4 floors, each floor for 2 baskets    * 8 wheels    * Recognition through magnet    * Should be from Washer Disinfector manufacturer 3. MIC Instrument Trolley (Qty: 1)    * Should be made of AISI 304 stainless steel    * Micro-surgery instruments connection system    * 8 wheels    * Recognition through magnet    * Should be from Washer Disinfector manufacturer 4. Anesthesia Instrument Trolley (Qty: 1)    * Entirely made of AISI304 stainless steel Anesthesia instruments connection system    * 8 wheels    * Recognition through magnet    * Should be from Washer Disinfector manufacturer 5. Air-Water Gun (Qty: 1)  * Spray gun made of stainless steel AISI304, suitable for water and compressed air, supplied with 8 nozzles * Tube with respective connection to the power supply of water or air under the tub or at floor * Handle thermally insulated * Accessories contained in a structure suitable for wall mounting * The length of the connecting hose: 2m  1. Heat Sealer (Qty: 1)  * Standards: CE / CEM / EN 868-5 / DIN 58953-7 * Sealing: 15 mm width / flat and full weld for better checking, unlimited sealing length. * Display: 1 line LCD * Temperature range: 20-230C° with a 2% regulation tolerance * Adjustable pouches guide (0-30 mm from edge). * Welds counter with reset. * Should seals every kind of pouches (steam, Tyvek, OE, alu, Ultra, etc). * Starts automatically when the set temperature is reached. * Environmentally responsible: automatic start and stop by photocell. * Safety: critical parameters control complying to ISO 11607-2 standard (temperature & pressure) * Automatic stop if critical parameters exceed limits * Accessories:   + Stainless steel front support tray   800 x 300 x 60 mm   1. Ultrasonic Cleaner (Qty: 1)  * Capacity: 20 liter or more  1. Receiving Table (Qty: 1)  * Should be made of AISI304 stainless steel  1. Washing Station (Qty: 1)  * Should be made of AISI304 stainless steel * Having two basins with drain  1. Packing Table (Qty: 1)  * Should be made of AISI304 stainless steel  1. Paper Trolley (Qty: 1)  * Should be made of AISI304 stainless steel * Seamless finished table top with non-sharp sides * Fitted with half shelf on table top  1. Paper Dispenser & Cutter (Qty: 1)  * Should be made of AISI304 stainless steel  1. Storage Shelf Rack (Qty: 2)  * Should be made 14 / 16SWG MS steel * Powder coated paint finish  1. Reverse Osmosis Plant (Qty: 1)  * Specifically for CSSD equipment * Capacity: 1000 liter or more per day * Provided with 100 liter storage tank  1. Air Compressor (Qty: 1)  * Specifically for CSSD equipment * Electric air compressor * Capacity: 100 liter or more   OR Equivalent  Certifications:  ISO, CE/FDA  Country of Origin:  USA/UK/EEC/Japan | 01 |  |  |  |  |
| 86 | **Major Instrument Set**  Local, export quality | 08 |  |  |  |  |
| 87 | **Minor Instrument Set**  Local, export quality | 08 |  |  |  |  |
| 88 | **Capnograph**  Portable 5” touch screen TFT display  2 trace waveform  Unit must be capable for measurement of ETCO2 for neonatal, pediatric and adult patient.  Method of sampling : side stream or main stream  Sampling rate should be 100Hz or better  Unit complete with  Sample Line  Filter  T Adaptor  Nasal cannula  Adult Airway Adapter 10 nos.  Neonatal Airway Adapter 10 nos.  Trolley (local)  OR Equivalent  USA/UK/EEC/Japan | 04 |  |  |  |  |
| 89 | **Esophageal Stethoscope**  USA/UK/EEC/Japan | 08 |  |  |  |  |
| 90 | **Peripheral never stimulator**  USA/UK/EEC/Japan | 04 |  |  |  |  |
| 91 | **Glucometer**  USA/UK/EEC/Japan | 04 |  |  |  |  |
| 92 | **Blood Warmer**  Blood warmer with display  Control to Monitor and manage transfusion(blood) temperature.  Automatically Cutoff/Stop, Audible & Visual Alarms for low/ overheating  Should Heat liquids without risk of contamination  Self-tests and error display  Setting of temperature from 37 °C to 41 °C in 0.5 °C increments  Automatic adaption of the heating control system  Should meet AABB Guidelines for use of blood warming device  Current : 6 A  Protection against against electric shock and ingress of liquids  Should have multiple independent cut- off from 42°C  OR Equivalent  USA/UK/EEC/Japan | 06 |  |  |  |  |
| 93 | **Fiber optic laryngoscope**  Video Laryngoscope/glide scope  Video laryngoscope with LCD display and camera.  Anti-Fog Lens.  3” or more LCD display  Resolution: 640 x480RGB  LED illumination  Full view Camera with high resolution monitor.  Resolution 2.0M Pixels  Field Angle 66° . illuminance ≥800LUX  Connectable to external monitor for data storage and training purpose.  Rechargeable battery with 3 hours back up.  Complete with pediatric and adult reusable blades , carrying case , USB and charger.  OR Equivalent  USA/UK/EEC/Japan | 04 |  |  |  |  |
| 94 | **Core body temperature monitor**  USA/UK/EEC/Japan | 04 |  |  |  |  |
| 95 | **Mobile Light rechargeable**  USA/UK/EEC/Japan | 04 |  |  |  |  |
| 96 | **Ambu bag 1 liter reusable**  Imported | 40 |  |  |  |  |
| 97 | **Ambu bag 2 liter rubber reusable**  Imported | 40 |  |  |  |  |
| 98 | **Ambu bag 3 liter rubber reusable**  Imported | 40 |  |  |  |  |
| 99 | **Balloon pump**  USA/UK/EEC/Japan | 02 |  |  |  |  |
| 100 | **External pace maker**  USA/UK/EEC/Japan | 04 |  |  |  |  |
| 101 | **Minor OT Table**  Multipurpose Electro Hydraulic Operation table with table top slid function.  Hand switch control should have a back lit for convenient and ease of operation.  Patient weight bearing capacity should be 200kg or more.  Longitudinal slide of 12” or more.  Built in x-ray cassettes channel.  Radio translucent table .  Safety side rail, emergency stop button , hand switch should have special function of patient positioning, up and down, left and right tilt, up and down back ,sliding function **etc**.  Essential function such as lock/unlock, level, flex/reflex should be incorporated.  Normal orientation slide to head end 52” ore more.  Normal orientation slide to leg end 15” or more.  Range of table movement  Head: +/- 90° or better  Back: +80°/-50° or better  Leg: +30°/-90° or better  Trendelungburg : +/-30°or better  Lateral tilt : +/-20° or better  Height from floor to 40” or better  Flex : 25°  Reverse flex : 25°  Reflex : 100°  Reverse reflex :100°  Complete with screen frame, arm board, mattress etc.  OR Equivalent  USA/UK/EEC/Japan | 02 |  |  |  |  |
| 102 | **Minor OT Light**  120,000 Lux Intensity  3 Steps of color Temperature selectable  95Ra of Highest Level of CRI  R9 90 of red color rendering ability  Focal Size (Dia.20cm ~ Dia.30cm)  Dilution Effect with 96 LED units (75% ~ 100%)  4 Smart Sensors for maximizing dilution effect  Channel Illuminating Technology  Intuitive control with one touch panel  Dimming Range : 25% ~ 100 %  Detachable &Autoclavable Hand Grip  Diameter of Head size :65cm or more  CE and FDA Approved  OR Equivalent  Korea/Taiwan/Malaysia | 02 |  |  |  |  |
| 103 | **Autoclave Table Top**  Micro-processor control system.  80 liter Chamber capacity  Auto lock pressure door with double lock .  With Auto dry, re dry and exhaust function.  Door close indicator. Low water indicator.  Chamber and tank water level indicator.  Unit should capable for automatic shutdown if over pressure.  Sterliztion temperature / pressure:121C  134 ° Design temperature. 3 KW Power consumption  OR Equivalent  Country of Origin  USA/UK/EEC/Japan | 04 |  |  |  |  |
| 104 | **Mobile C-Arm**  Surgical C-arm to be used for Cardiology, Orthopedic, Spine, Abdominal, Thorax, and for interventional procedures.  High Frequency, 40 kHz  4 kW or more out put  Unit should have Excellence in image quality  Image archiving and communication solutions.  Orbital rotation range 130° or more  Manual brakes  Compact CCD camera  9 inches triple field Image Intensifier  2 x 19” or more LCD monitors  Collimator with motorized and rotating iris  Continuous and real time image rotation without X-Ray emission during fluoroscopy and after exposure.  Anatomical programs setting.  Unit should have Automatic fluoroscopy optimization on three x-ray dose levels, low, standard & boosted.  X-Ray Generator  High frequency 40KHz  Output power 4 kW or more  kVP range: 40-120kVp  Fluroscopy (mA) 0.1-5mA or more  Radiography mA 20-100mA  X-Ray Tube:  Rotating anode X-ray tube  Two focal spots: small 0.3 mm or more, large 0.6 mm or more  Anode heat capacity: 200KHU or more  Target angle 10 ° or better  C-Arm  C-Arm SID : 100 cm or better  Horizontal travel 200mm or more  Vertical travel 450mm or more  Swing : +/-12° or better  C-Arm rotating +/- 200° or better  Collimator  Motorized and rotating iris. Automatic aperture to suit Image Intensifier field.  Image Processing  Digital video memory 1 Live + 110 images memory or more.  LIH (Last Image Hold)  Edge enhancement, noise reduction filter  DICOM to PACS  DICOM store  DICOM CD ROM/DVD  DICOM cine and USB.  Flash USB or external USB hard disk, LCD display image control  Image Intensifier  9” Image Intensifier  Triple Field with central resolution of 50 Lp/cm.  Field size 215,160 and 120 mm  CCD Camera  Full digital, high frequency image data transmission  Acquisition rate: 25 images/sec.  A/D Converter : 16 bit  Resolution : 1024x 1024 or more  LCD Monitor  Two LCD Monitor’s 19” or more  Unit should be mounted on Cart  Real time & Post processing software  OR Equivalent  USA/UK/EEC/Japan | 01 |  |  |  |  |
| 105 | **Urethorosystoscopy Set**  USA/UK/EEC/Japan | 01 |  |  |  |  |
| 106 | **Resectoscopy Set**  USA/UK/EEC/Japan | 01 |  |  |  |  |
| 107 | **Urethotomy Set**  USA/UK/EEC/Japan | 01 |  |  |  |  |
| 108 | **UretoroRenoscopy Set**  USA/UK/EEC/Japan | 01 |  |  |  |  |
| 109 | **Pediatric Cystoscopy Set**  Straight forward telescope 0”, Ǿ 1.9/2.1 mm, autocalvable fibre optic light transmission incorporated, color code: Green.  Cystoscope Urethroscope Sheath 935 Fr., with Instrument channel 4 Fr., with obtutor 27031 EO and 2 LUER-lock adaptors color code: bule-white.  Cystoscope Urethroscope sheath 11 Fr., with instruments channel 5 Fr., Obtutor 27031 FO and 2 LUER Lock agaptors color code: Red White.  Grasping forceps 3 Fr., double action jaws flexible length 28cm.  Biopsy forceps3 Fr., double action jaws flexible length 28cm.  Coagulating Electrode Fr., Unipolar length 53cm  Needle Electrode 36 Fr Unipolar Length 53cm  Unipolar High frequency cord with 4mm plug length 300 cm for models type T older models and Ellman.  OR Equivalent  USA/UK/EEC/Japan | 01 |  |  |  |  |
| 110 | **Urology Instrument Set**  USA/UK/EEC/Japan | 01 |  |  |  |  |
| 111 | **Ambulance**  A. Supply of vehicle - Suzuki Bolan Hi-Roof  B. Conversion of Suzuki Bolan Hi-Roof into Emergency Rescue Ambulance along with basic life support accessories. | 04 |  |  |  |  |
| 112 | **Laundry**  for fulfill the requirement of 300-350 beded hospital  **Washer Extractor- 60kg ( 2 nos).**   * 60Kg or more washing Capacity * Medical Barrier Washer Extractor * Electric Operated * Stainless steel drum * Easy access to all parts * Frequency Controlled Motor * With Soap dispenser with 4 or more removable compartments * Microprocessor controlled * Cold and hot Water inlet * Detergent Powder & liquid compatible * Large opening Door for Loading & Unloading   **Washer - 25kG (1 No)**   * 25 Kg or more Washer & Extractor * Electric Operated * Stainless steel top panel * Stainless steel drum and tub * Microprocessor * Soap dispenser * Easy access to all vital parts from the front * Large door opening for easy loading & unloading   **Tumble Dryer 50Kg (2 Nos).**   * 50Kg or more Drying capacity * Electric Operated * Large door opening   **Ironer (Flat Work Type) (1 No).**   * Electric Operated * Cylinder heated * Ironing capacity : 90kG or more * Drum diameter : 500mm o more * Working length : 2500mm or more * Large surface contact with linen * Emergency button for safety * Automatic cool down   **Laundry Press Air Operated (1 No. )**   * Pneumatic Press for Laundry * High grade nickel plated polished head. * with pad and cover * Water spray gun. * Adjustable head release timer.   Or equivalent  Country of origin: USA/UK/EEC  **Steam Generator 1000kg/h (1 No)**   * Gas Operated * 1000 Kg/hour steam production * Structure: vertical fire tube steam boiler * Water pipe penetrating flow furnace type, vertical three returns. * Top located Burner, * Top burner-burning * Working pressure : 7-10 bar * Water feeding inlet : ½ ~ 1/4 “ * Boiler drain : ¾” * Tank for condensate recovery * Feet pump motor : 2h/p or more * Steam capacity : 800-100   **Steam Generator 300kg/h**   * Electric Operated * 300 Kg/hour steam production * Structure: vertical fire tube steam boiler * Water pipe penetrating flow furnace type, vertical three returns. * Top located Burner, * Top burner-burning   **RO Plant**   * Operating pressure: 100~180psi * Salt rejection 95% * Recovery rate : 40~50% * Inlet water pressure pump to HP:220~240W. * Sand filter , activated carbon filter, water softner filter , UV disinfection system, reverse osmosis water purification system. * Complete RO System * Air Compressor : * Tank capacity : 100L or more * Operating pressure : 7-8bar * Complete with pressure gauge and safety value * Thermal over load protector   CE/FDA &ISO certified.  **Local items:**  Ironer board with iron 02 nos.  Dry linen trolley 15kg , S.S 04 nos.  Wet linen trolley 15kg , S.S 04 nos.  Sewing machine 02 nos.  Feed water tank and water storage tank  **Cost for following work should be included in the offer:**   * Laundry machines' placement, leveling and fixing   Piping works for laundry machines, steam generator, Steam generator to Steam Header, Exhaust , water softener, water to Feed water tank including fitting, value, drain etc. | 01 |  |  |  |  |
| 113 | **Cold Storage Cabinet For (04) Four Body**   * Refrigerated Body Storage (4 Body Capacity) * Cabinet height: 2230-2260mm * Cabinet Depth: 2230-2260mm * Cabinet Width: 950-1210mm * 1 bay, 4 tier with wide trays. * White finish, 100mm thick, high density rigid polyurethane insulation. * 304 Stainless Steel, 0.8mm to internal & external surfaces.Fully insulated floor structure, finished in 0.8-1mm thick stainless steel sheet. * Trays should be supported with free running, 50mm self-bearing acetyl stub rollers. * 1 x 4 tier chill temperature bays for compatible wide for a full height door not less than 650mm width single full height door for single entry operation (3°C to +5°C) * 4 No. 304 grade stainless steel not less than 600mm wide trays. * Internal structure should consist of stainless steel open racking for an even temperature throughout the store and easy access for cleaning. * High / low temperature alarm with volt free contact for connection to a BMS * Roof mounted mono-block refrigeration system * Initial refrigerant charge. * Door should internally clad for crash protection. * 1 No. rebated ‘full height’ insulated 100mm door with reinforced internal structure , size Not less than: 650 x 2000. * Door heater tapes to each full height door. * Door complete with “wipe clean" identity plate or drop in label holder. * Profiled fully magnetic p.v.c door gasket in rebate to fully protect the seal. * Lockable door latch. * Edge mount adjustable hinges should offer 180 deg or more opening. * Leading edges should be provided to prevent damage to trolley rollers * Full width stainless steel carrying handles * Roof Mounted Cooling System * 3-5C operating range in ambient of 32C to 50C . * R404a refrigerant, Auto defrost. * Digital control panel with temp display and visual alarms. * Turning mortuary cabinet light on/off   **HYDRAULIC TROLLEY**   * Hydraulic mortuary trolley * Robustly construction ,heavy duty, square section, welded steel tube. * Stable and versatile platform for easy to move. * Simple to use and built, to withstand continual and heavy use. * Full width, free running PVC coated rollers. * Finished in steel material. * Full width, free running PVC coated rollers * 4 No, 125mm braked castors, protectivefront bumpers * Reliable hydraulic system with dual action hydraulic hand pump or foot operated. * End handled with tray retaining mechanism . * Lift Height 300mm to 1650mm * Dimensions: 650mm or more (W) x 2050mm or more (L) x 1050 or more (H) handle * Must be compatible with refrigeration cabinets. * Carrying weight 180kg or more.   **Cold Fogging machine**   * Rotatable fogging nozzles * Particle Size : 15-30 micron VMD, adjustable * Tank Capacity: 2 liters or more * Liquid Flow Rate: 0-250ml/min, adjustable * Should be cable to handles both oil and water-based chemical solutions   OR equivalent  Country of origin:  USA/UK/Germany/Japan. | 01 |  |  |  |  |
| 114 | **Installation & Commissioning of:**  **Central Oxygen & Medical Air Pipeline System with Air Compressor**  **For 300 Beds Capacity (40 Dialysis Bed + 14 ICU Beds + 244 Bedded Wards of Nephrology, Peads Urology, Oncology Ward, Transplant Ward and Emergency)**   1. **Configuration:**  * Installation to cater 300 beds capacity hospital having different wards * Manifold should be of high quality. * System should be equipped with shut off valves and zone valves to isolate working areas. * The system will be equipped with alarm panels to provide round the clock pressure monitoring and audible tone to indicate pressure drop.  1. **Copper Piping**   Supply and installation of   * Copper pipe, half hard solid drawn de-oxidized and de-greased 18 gauge for use in piped medical gas systems, therefore it should be guaranteed that the pipes are leak-tight, free of pores, blisters etc * Pipe should comply with HTM -2022. * Diameter and Length   ⌀ 1½” as required length at site  ⌀ 1” as required length at site  ⌀ ¾” as required length at site  ⌀ ½” as required length at site   1. **Wall Outlets**  * Outlets should have double lock quick connect and gas specific. The latch /locking release mechanism should be incorporated on the gas outlet with geometrical key indexing and should have a parking facility so that in the event of release of probe by pressing the spring loaded center, the probe / flow meter does not fall down. * Gas outlets wall mounted, Complete in Box/casing gas Specific, Self-sealing valve, indexed to eliminate interchangeability/erroneous tapping of gas and cover plate.   1. Oxygen Wall Outlet (Qty: 300)   British Standard   * 1. Air Wall Outlet (Qty: 300)   British Standard   * 1. Nitrous Oxide Outlet (Qty: 8)   British Standard   * 1. Isolation Valves   with required Adapter  (Quantity as per site survey)   * 1. Zone Service Unit   with Valve and Adapter set  (Quantity as per site survey)   * 1. Oxygen Flow Meters (300 units)   With autoclave able and unbreakable humidifier bottle  British Standard probe.   * 1. Suction lnjector Units (300 units)   Complete with 1 litre polysulphonic jar, probe and jarmounting bracket   1. **Alarms** 2. Oxygen Failure Warning Device   (Audio / Visual)  (Quantity as per site survey)   1. Medical Air Failure Warning Device   (Audio / Visual)  (Quantity as per site survey)   1. **Air Compressor System**  * Duplex System   + 100% oil free Medical Air Compressor complying with HTM 02-01 standards.   + 15 HP Air Compressor with 304 Litre Tank (2 units)   + One unit for regular use and another unit for standby working * Pre-Filters * Post-Filters * Compressed Air Tank   + 500 Litres capacity * Refrigerated Dryers * Electric Panel   + for the above compressor System * Bypass System   + for the above compressor System  1. **Manifold System**  * Manual Oxygen Manifold (15 x 2) * Complete with Two Way Valve * Multistage Regulator * Tail Connection (30 units)   Or equivalent  **Certifications:**  ISO, CE  **Country of Origin**  USA/EU/Japan  Note  Bidders are advised to visit the site of installation in advance to mention total measurement of copper lining and other details to be used in their bid for complete system. |  |  |  |  |  |