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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/RespNon 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/secECGLeads selection: I, II, III, aVR, aVF, aVL, V, V1-V6, TESTSelectable 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&4Heart beat indicationNIBP 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 OximeterNumber oxygen saturation measurementRange: 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 ~ 99mmHgSampling Rate: 50 ml/minRespiration Rate: 0 ~ 150 breaths/min1. **2 channel IBP**

Measurement Range: -50 ~ 300mmHgImpedance Range: 300 ~ 3000ΩAlarm: -10 ~ 300mmHgPressure Transducer: sensitivity, 5μV/V/mmHgTransducer Sites: ART, PA,CVP, RAP, LAP, ICPOr 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. controlledApnea Backup VentilationActive Exhalation ValveAutomatic Leak Compensation Tidal volume 20 - 2000 ml or betterRespiratory 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-upHumidification Selection (HME, Humidifier, and None)User Defined Custom Default SettingsComplete 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 infusionSyringe empty, Illegal syringe ,Plunger not fitted, Clamp opened, Internal error Nurse call system Built – in battery with 8 hours back upOr 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 shocksAuto test/self-check External pediatric and adult paddles.ECG cableAC 220V/50Hz operated Pace Maker: Frequency 30 to 180 ppm or better Current 0 to 150 mARectangular constant type waveform. Duration: 40 msRefractory period 340 ms from 30 to 80 ppm240 ms from 85 to 180 ppmStimulation mode On Demand and Fixed with selectable frequency and currentOptionalSpO2 MASIMO SpO2Range 1-100%Perfusion index 0.02% to 20%Accuracy during no motion conditions: 70% -100 % : ± 2 digitsAccuracy during motion conditions: 70% -100 % : ± 3 digitsPulse Frequency Range 25 -240 ppmAccuracy during no motion conditions : ± 2 ppmAccuracy during motion conditions : ± 5 ppmOr 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-hoursfull 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 boardLCD 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 pressureCalculated Parameters: HCO3 -A, HCO3 -S, BE, BEecf (SBE), TCO2 , BB, O2 sat, O2 CT, P50, AaDO2 , Hct, H+ , AGAP, SHUNT, Acid-Base StatusThroughput: Up to 80 tests/hour depending on configurationSampling Method: Aspiration system adapted for both capillary and syringes, cleaned with Rinse Solution automaticallySample Volume: 50-200 µl depending on measured parametersSample Types: Whole Blood, Arterial Blood, Urine, Serum, Plasma,Respiration GasCalibration: 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 setsDisplay: 5.4'' LCD-display, illuminated, 15-lines, 30 charactersOr Equivalent USA/UK/EEC/Japan  | 01 |  |  |  |  |
| 10 | **Pulse Oximeter** Portable 5-8” touch screen TFT display2 trace waveform SpO2% Range: 0 ~ 100%Pulse Rate Range: 30-250 bpmAlarm Red light LED wavelength SpO2 ProbeBattery 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/hStandard fan speedStep 1: 900 rpmStep 2: 1,300 rpmStep 3: 1,700 rpmStep 4: 2,800 rpm approx.. Or Adjustable Noise emissionsFan stage 1, silence night levelFan stage 2, daily basic levelFan stage 3, daily high levelFan stage 4, intensive level Filter type : Particulate filterDesignation : HEPA / ULPAFilter monitoring with LED displayMaterial : Chromium steel 1,0 mmComplete 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/minVacuum pressure 650 -700 mmhgON/OFF switch Should have Knob for Suction ControlShould be piston type, oil free , maintenance freeShould 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 cordAnti-Bacterial filterOr 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 tissuesTouch screen technologyDual frequency ultrasound (1MHz and 3MHz)Programmable memoryTreatment 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 minTreatment Programs 10 user-defined set-upsUltrasound Frequency 1MHz and 3MHzPulse Duration 2msUltrasound 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 tissuesCombination unit, dual frequency ultrasound and stimulation therapy. Touch screen displayDual 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 combo500 GB HDD4 GB DDR 3 RAM17” LCD MonitorKey Board & Mouse Laser Printer (HP, Dell, Compaq or equivalent) | 49 |  |  |  |  |
| 17 | **Air Conditioners 1.5 Ton** Dawlance/Sharp/Haier/National or equivalent | 106 |  |  |  |  |
| 18 |

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| **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: 15Built-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 Vlithotripter: 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 reagentsUser protection from formaldehyde exposure, alcohol, xylene, and formaldehyde.Touch-screen interface Complete with softwareAutomatic 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 interfaceStain protocols with recall and loading of reagent layoutsUser protection from fume extraction through a carbon filterInternal LED lighting battery backuppassword protected Protocols.Small footprint25 reagent stations Advanced optimization softwareShould runs 10 to 15 racks at the same timeOr 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 safetyshut 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, adjustableAdjustable 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 shelvesVentilation Slide.ISO-9001 Certified.Or Equivalent USA/UK/EEC/Japan | 4 |  |  |  |  |
| 32 | **Electronic Weighing Balance** Capacity : 420 gmReadability : 0.1 mgRepeatability (sd) : 0.3 mgLinearity (+/-) : 0.5 mgPan Size (mm / inch) : 90Ø / 3.5”Ø Response Time : 2 - 3 Sec Display: Alpha Numeric LCD Display Calibration: Motorised Internal CalibrationUnits of measure: g, mg, ct, GN, mo, oz, dwt etc. Rate Range : FullOperating Temp. : + 10º to 40ºCSensitivity Drift. : 6 ± 2ppm (2 x 10 / ºC)Minimum Sample Wt. as per USP : Approx 100 to 150mgMinimum Wt. as per (U=1%, sd=2) : 8 mgApplication 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 shelvesOr 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 shakingFully 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 VComplete with all accessories and consumablesOr Equivalent USA/UK/EEC/Japan | 1 |  |  |  |  |
| 36 | **Domestic Refrigerator (18 cft)** Cooling system : Forced – Air CirculationCapacity : 270-360 LitresInput Power : max 310WTemperature range : 2 ~ 8°C (Ambient 10°C ~ 32°C)Voltage (V/Hz) : 220V / 50 HzTemperature Control : Microprocessor Control and LED display Over and under temperature : Audible and visual alarmCabinet : UprightDoor : Single glass door, hinged, Foam insulation : High density CFC-free urethaneRefrigerant : 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 LITRESStorage capacity: Min 180 bags Input Power : Max 460WTemperature range : 4 ± 1°CVoltage (V/Hz):220V / 50 Hz / 60 HzMicroprocessor Temperature controlPower failure alarm, : Audible and visual alarm (72 hrs)Upright CabinetGlass doorFoam insulation: High density CFC-free urethaneDanfoss compressorDoor lock / Casters :1 / 4 (Optional)Interior light : 8W\*1Shelves / Box : 5 / 20Or 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 500mlSpeed / 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 mlAdjustable range of 50-100mLAdjustable range of 100-1000mLOr 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#, IPFAlarm 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 usedShould have Low WBC ModeLimited <0.1, Accurate differential should be possible even in marked leukopenic sample. Analysis data with histogram & ScattergramsOr Equivalent USA/UK/EEC/Japan  | 1 |  |  |  |  |
| 45 | **Densitometer** USA/UK/EEC/Japan | 1 |  |  |  |  |
| 46 | **Coagulation Analyzer** Source lamp: Clotting – 4 LEDs with 660 nm/wavelengthChromogenic – 1 LED with 405 nm/wavelengthImmunologic – 1 LED with 575 nm/wavelengthSampling mechanism: Automated sample and standard predilutionCarrier 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/hourInterfaces: RS232 serial interface to host PC / LIS,PS/2 or USB interface for barcode readerOr Equivalent USA/UK/EEC/Japan  | 1 |  |  |  |  |
| 47 | **Sample Mixer (Roller)** Description: Variable speedSpeed: 200-2500 rpmOrbit diameter: 4.2 mmDimensions: 135 x 215 x 78mmNet weight: 3.2 Kg.Power supply: 120-230V, 50-60Hz, 50WOr 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 mlAdjustable range of 50-100mLAdjustable range of 100-1000mLOr 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 shelvesOr 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 setpointAir Volume: 603 m3 /h (355 cfm)ULPA Filter Typical Efficiency: >99.999% at particle size between 0.1 to 0.3µmFluorescent Lamp Intensity At Zero Ambient: 1590 Lux (148 foot candles)FDA / CE / JIS MarkedOr 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 tachometerTimer 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 kPaAir Pressure: 586.5 kPa 13.6-17 sm3 /hrPower Voltage, Frequency, Phase: 120 VAC 60 HZ 1 PhFeed Water Temperature: 7-38°COr Equivalent USA/UK/EEC/Japan  | 1 |  |  |  |  |
| 58 | **Distillation Plant** USA/UK/EEC/Japan  | 1 |  |  |  |  |
| 59 | **Electronic weighting balance** Capacity & Resolution: 400g x 0.01gPercentage: Resolution: 0.01/ 0.1 / 1%Stabilization Time: 2 sec, TypicallySensitivity drift: (10 ppm/°c (10ºc-30ºc)Linearity: +/-0.02 gRepeatability/st D.Dev:0.01gDisplay Refresh: 5 or 10 timesOperating temperature: +5ºc-40 rh less than 85% no condensationOr Equivalent USA/UK/EEC/Japan  | 1 |  |  |  |  |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 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 mlAdjustable range of 50-100mLAdjustable range of 100-1000mLOr Equivalent USA/UK/EEC/Japan  | 10 |  |  |  |  |
| 61 | **Automated Chemistry Analyzer** Auto chemistry analyzer with through put of 500-600 test/hrOpen system fully automated, discrete, sample oriented, Random access chemistry analyzer with continuous loading of samples.Whole blood HbA1c,CRP, and Micro albumin etcCapable for Electrolytes and HIA testingMinimum 27 refrigerated Reagent position minimum 60- maximum 80 or above photometric test/hourQuartz-iodine lamp 12V-20W / Halogen tungsten lamp air cooled by fanMinimum 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 calibrationBarcode reader available Disposable cuvettesAll options should be on 12 wavelengthstests combination 6 - 10°C and not dependent on ambient temperatureInteractive Levey Jennings charts, daily, monthly andbatch QC with data archiving. Automatic QA and automatic calibration.Minimal daily maintenance. No rear access required. Simple twice yearly preventative maintenanceOr 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 SampleDetection RangeBlood Na+:20-200mmol/LK+:0.2-40mmol/LCl-:25-200mmol/LUrine 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 mlAdjustable range of 50-100mLAdjustable range of 100-1000mLOr Equivalent USA/UK/EEC/Japan  | 10 |  |  |  |  |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 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 SlideSize: 1ʺx3ʺThickness: 1-1.2 mmFrosted Glass SlideSize: 1ʺx3ʺThickness: 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 heigthFloor mounted tube column standManual collimator200KHU X-ray tube Wall chest bucky standPair 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: 0.5~500mAsExposure 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 moreMoving 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 : 400-1900mmLater/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 tubeSmall focus 0.6mmLarge focus 1.2mmRotating 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 bitsComplete 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 3.0DICOM 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 contractAdjust dynamic rangeReduce 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 apronCivil 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 moreHigh resolution, Non flicker TFT/LCD/LED. Imaging modes: B-modeB+M modeM-Mode2B-mode4B modeTissue Harmonic image. Measurement Packages: Obestratic Measurement PackageGynecology Measurement PackageUrology Measurement PackageSmall parts Measurement PackageVascular Measurement PackageDICOM 3.0PDF report function160GB hard drive, DVD, 4 USBComplete 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 UPSFDA 510(k) approvedCE MarkedOr equivalent Preferably UK/USA/Japan/EECBesides 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 moreHigh resolution, Non flicker TFT/LCD/LED. Imaging modes: B-modeB+M modeM-Mode2B-mode4B modeTissue Harmonic image. Measurement Packages: Obestratic Measurement PackageGynecology Measurement PackageUrology Measurement PackageSmall parts Measurement PackageVascular Measurement PackageDICOM 3.0PDF report function160GB hard drive, DVD, 4 USBComplete with the following: Convex probe Multi frequency between 2~6 MHz or better B/W Printer with 5 nos. paper role. Trolley (local)Compatible UPSFDA 510(k) approvedCE MarkedOr equivalent Preferably UK/USA/Japan/EECBesides 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 40~125kVRadiographic mA 10~500mA or moreExposure 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 mDQE : > 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 etcTFT Color monitor 18” or more/Resolution 1280 x 1024 Pixel DICOM Compliant DICOM 3.0 Part 14Acquisition software: Operation software for generator and digital panelGenerator Synchronisation Image processingImage management (PACS, HIS/RIS etc…)full DICOM 3.0 CompatibilityDICOM worklist from HIS/RIS Store Images through PACS network systemDICOM image printDICOM MPPSDICOM CD/DVD Image quality control tools with pixel fixing tools AEC and APR Image cropping, Image mirror, rotate etcOr 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 heigthFloor mounted tube column standWall Chest stand Manual collimator140KHU 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: 0.5~500mAsExposure time: 1 ms ~ 6s or morepoint 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 moreMoving 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 : 400-1900mmLater/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 tubeSmall focus 1.0mmLarge focus 2.0mmRotating 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 bitsComplete 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 3.0DICOM 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 contractAdjust dynamic rangeReduce 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 moreX-Ray tube protections, KVP range: 40-110kV or moreMA Range: 10-100mA or better, mAS range: 1.0-200mAs or betterCentering light indicator Standard power supply cable, X-ray exposure switch cable, Vertical movement of the Arm to lower or raise the tube collimator assemblyRotation 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 automaticrecognition.Built-in Gel WarmerComplete DICOM 3.0 Connectivity500 GB Hard Disk or better.Wireless Wi-Fi Connection.Inbuilt ECG Module as standard.4 USB Ports or moreDVD-RWModes 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 betterGain Control: Separate knobs for Gain control of B-Mode, M-Mode, Color-Mode, PW /CW-Mode.TGC: 8 bands or moreLateral Gain Compensation: 2 bands or moreReal Time Image Zoom: 1-8 times or betterPhysical Channels: 100 Nos. or moreDigital Channels: 89,000 Channels or moreB-Mode Frame Rate: 1300 fps or betterColor Mode Frame Rate: 150 fps or betterCine 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 Printer1 x Imported UPS with backup of 10 minutes or more 1 x Gel Bottle1 x Footswitch1 x User Manual1 x ECG leads setOptional accessories:1 x Prostate Biopsy probe. FDA 510(k) approvedCE MarkedOr equivalent Preferably UK/USA/Japan/EECBesides 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 backupThe machine dialysis data alarm and displayLife Records automatically and necessary data can be shown on screen.Dialysis Machine Capable, Bicarbonate Dialysis and sequential/Isolated Ultra-filtrationEasy to see TFT/LCD Touch Panel and easy to handle control panelDialysis treatment parameters such as UF Goal, UF Rate, Blood Flow and Syringe Flow are easily settable on the control panel.ProfileUF Rate and Dialysis conductivity are selectable.Selectable ConcentrateSafety DesignDouble Chamber System to Precise UF VolumetricControlSupply Water Flow 500 ml/min or more.Supply Water Temperature 10-25 CSetting rangeDialysis Flow 300-800 ml/minUF rate 0.0.10 – 5.00 L/h.Dialystate type Bicarbonate/acetate Dialysis Conductivity 130-160 mEq/L( 12ms/cm-18ms/cm)Blood Pump segmentTube Diameter 8.0mm Tube Diameter 6.35mm Heparin infusion rateDetector Air bubble Detector Ultrasonic sensor detection systemBlood leak detector Monitor sectionDialysate temperature 32 to 41CDialysate flow 300-800 ml/minArterial pressure indicatorVenous pressure indicatorTransmembrane pressure indicatorUF volume indicator 0.00-40.0LDialysate pressure indicator Heparin pump flow indicatorDisinfection and RinsingChemical and heat disinfectionor EquivalentUSA/UK/EEC/Japan | 40 |  |  |  |  |
| 75 | **RO Plant (for 40 Dialysis Machines)** 1800 Liters/hour capacity Online R.O. complete with High Rejection TFC membraneS.S. membrane housingPermeate recovery higher than 50%All pipes and fittings should be of high quality stainless steelConductivity, TDS, Flow, Temperature and pressures display panelor EquivalentUSA/UK/EEC/Japan Pre-TreatmentSand 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 membraneS.S. membrane housingPermeate recovery higher than 50%All pipes and fittings should be of high quality stainless steelConductivity, TDS, Flow, Temperature and pressures display panelor EquivalentUSA/UK/EEC/Japan Pre-TreatmentSand 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 kPaAverage flow rate:1.75 liter/minWater Temperature 59-75 FDrain: should be higher than floor level or Equivalent-FDA Approved  | 2 |  |  |  |  |
| 78 | **Concentration Unit** High quality, corrosion resistant material Tank500 Liters capacityControl PanelAgitator motorInput water solenoid valveCoupleror Equivalent FDA approved | 2 |  |  |  |  |
| 79 | **Crash Cart** ABS structure, resistant to erosionFive(5) drawers: 2 small and 3 big. Each inner with partitions can be organized freely into different size units for placement of medicineWith handles to move the emergency cartDefibrillator tray Telescopic I.V. pole and CPR boardSliding side shelfBumper protector on cornersOxygen tank holder at the backHigh strength ABS material, with side rails aroundAll drawers should with central lockerOR 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 LuxCeiling mounted LED Light with dual dom160,000+160,000.00 Lux Touch less LED OT Light Control of all functions through sensor technologyLED 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 moreDetachable &Autoclavable Hand GripOR 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 colorsVCV, PCV, SIMV, Spontaneous, PSV modes2 Station Selectec backbar with integrated pressure relief valveIntegrated CO2 absorption system, 1.4 liter or more. Integrated oxygen monitor6 tube of flow meters for three gas Flow meter : O2: 0-1L/min, 1-10L/min or moreN2O: 0-1L/min, 1-10L/min or moreAir: 0-1L/min, 1-10L/min or moreGas System : O2 deficiency alarm Common gas outlet with Oxygen flush hookBreathing Circuit hookThree drawers unit Writing tablet Working mode: closed, semi-closed, semi openFour cylinder yokes plus pipeline Electronic ventilator Driven mode: electrically controlled Ventilator for adult and pediatric Model: VCV, PCV, SIMV, Spontaneous, PSV modesTidal volume: 20-1500mlVentilator frequency : 4-60bpmI:E ratio : 1:05 to 1:6Electronic PEEP: 5-20cmH2OBattery back 4 hours or more Electronic alarms: Automatic and user setableAlarms: 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: 50WMonopolar coagulationSoft 100W, Spray 120W, Bipolar Cutting Bipolar cutting 100 W or morePulse : 100 W ore moreBipolar coagulation : 100 WComplete 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 cuffsOR 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 mm1. 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/FDACountry 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 display2 trace waveform Unit must be capable for measurement of ETCO2 for neonatal, pediatric and adult patient. Method of sampling : side stream or main streamSampling rate should be 100Hz or better Unit complete with Sample Line FilterT AdaptorNasal 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 contaminationSelf-tests and error displaySetting of temperature from 37 °C to 41 °C in 0.5 °C incrementsAutomatic adaption of the heating control system Should meet AABB Guidelines for use of blood warming deviceCurrent : 6 AProtection against against electric shock and ingress of liquidsShould have multiple independent cut- off from 42°COR 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 x480RGBLED illumination Full view Camera with high resolution monitor. Resolution 2.0M Pixels Field Angle 66° . illuminance ≥800LUXConnectable 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 Intensity3 Steps of color Temperature selectable 95Ra of Highest Level of CRIR9 90 of red color rendering abilityFocal Size (Dia.20cm ~ Dia.30cm)Dilution Effect with 96 LED units (75% ~ 100%)4 Smart Sensors for maximizing dilution effectChannel Illuminating TechnologyIntuitive control with one touch panelDimming Range : 25% ~ 100 %Detachable &Autoclavable Hand GripDiameter of Head size :65cm or moreCE 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 consumptionOR 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 kHz4 kW or more out putUnit should have Excellence in image quality Image archiving and communication solutions. Orbital rotation range 130° or moreManual brakes Compact CCD camera9 inches triple field Image Intensifier2 x 19” or more LCD monitorsCollimator with motorized and rotating irisContinuous 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 40KHzOutput power 4 kW or morekVP range: 40-120kVpFluroscopy (mA) 0.1-5mA or moreRadiography mA 20-100mA X-Ray Tube:Rotating anode X-ray tubeTwo focal spots: small 0.3 mm or more, large 0.6 mm or moreAnode heat capacity: 200KHU or moreTarget angle 10 ° or better C-Arm C-Arm SID : 100 cm or better Horizontal travel 200mm or moreVertical 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 filterDICOM to PACS DICOM store DICOM CD ROM/DVDDICOM cine and USB. Flash USB or external USB hard disk, LCD display image controlImage Intensifier 9” Image IntensifierTriple Field with central resolution of 50 Lp/cm.Field size 215,160 and 120 mmCCD CameraFull digital, high frequency image data transmissionAcquisition rate: 25 images/sec.A/D Converter : 16 bitResolution : 1024x 1024 or more LCD MonitorTwo LCD Monitor’s 19” or more Unit should be mounted on CartReal time & Post processing softwareOR 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 53cmNeedle Electrode 36 Fr Unipolar Length 53cmUnipolar 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 equivalentCountry 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 site1. **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 bottleBritish Standard probe.* 1. Suction lnjector Units (300 units)

Complete with 1 litre polysulphonic jar, probe and jarmounting bracket1. **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/JapanNoteBidders 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. |  |  |  |  |  |