

INVITATION FOR BIDS (IFB)

HOSPITAL, OPHTHALMOLOGY AND DENTAL EQUIPMENT / INSTRUMENTS / FURNITURE

No. DUHS/P&D/2012/2710 Dated 05 November 2012

Dow University of Health Sciences (DUHS), Karachi, invites sealed bids on C&F / DDP basis as per given schedule for the **PROCUREMENT OF HOSPITAL, OPHTHALMOLOGY AND DENTAL EQUIPMENT / INSTRUMENTS / FURNITURE** from the manufacturers / bidders duly authorized by the manufacturer of the goods.

2. Bids must be delivered to the address below at or before **11:00 a.m. on 24 November 2012**. The bids will be opened in the presence of the Bidders' representative who choose to attend at the address below at **11:30 a.m.** on the same day (in case of any holiday or disturbance, the bids will be opened on the next day of the original scheduled date). The late bids will be rejected.
3. Bids shall be accepted under the single stage one envelope procedure. All bids received shall be opened and evaluated in the manner prescribed in the bidding document".
4. The bidding document may be purchased by interested bidders on the submission of a written application along with a copy of Sales Tax Registration Certificate to the address below and upon payment of a nonrefundable fee i.e. Rs. 2,000/- (Rupees two thousand only) in shape of Pay Order / Demand Draft in favour of Dow University of Health Sciences, Karachi.
5. All bids must be accompanied by a Bid Security of 2% of the total value of bid, in favour of Dow University of Health sciences, Karachi in the shape of Demand Draft or Pay Order or Bank Guarantee. The Tender without 2% Bid Security will not be considered and rejected.
6. For further information, visit DUHS website www.duhs.edu.pk OR contact in personal at below address from 11:00 a.m. to 02:00 p.m.
7. The bidders not registered with Sales Tax and Income Tax Registration authorities will not be considered and their offer will be rejected as non responsive.

NOTE:-

If no responsive bid received within the due date reflected above in Para 2 i.e. **24 November 2012**, the bids will be received and opened, **second** or **third** time as per following schedule. However, all the other terms and conditions will remain the unchanged.

S#	Bid Submission Date & Time	Bid Opening Date & Time
1.	10 December 2012 at 11:00 a.m.	10 December 2012 at 11:30 a.m.
2.	26 December 2012 at 11:00 a.m.	26 December 2012 at 11:30 a.m.

DIRECTOR PLANNING & DEVELOPMENT

DOW UNIVERSITY OF HEALTH SCIENCES

3rd FLOOR, ADMN. BLOCK

BABA-E-URDU ROAD, NEAR CIVIL HOSPITAL, KARACHI

PHONE No. +92-21-99215754-7 (EXT. 190 & 191)

E-MAIL: procurement@duhs.edu.pk

G: Technical Specifications

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
	ANESTHESIA	
1.	<p>ANALGESIA UNIT Apparatus for administration of fast acting pain relief with Entonox gas. (50% O2 and 50% N2O) comprising of</p> <ul style="list-style-type: none"> • Pressure Regulator with entonox Pin Index Yoke, • Breathing Circuit, • 2 sizes of Face Masks (Adult, Child/Small Adult) and a mouth piece, • 3 x Entonox F size Cylinders with Pin Index Connection and F size cylinder trolley. • IAS 	2 Nos.
2.	<p>BiPAP CONTINUOUS FLOW SYSTEM</p> <ul style="list-style-type: none"> • Portable BiPAP unit for pre & post operative treatment to assist breathing mechanism & gas exchange for pediatric & adult patients. • Complete with standard accessories 	4 Nos.
3.	<p>CYLINDER F SIZE</p> <ul style="list-style-type: none"> • It shall come with set of oxygen cylinder, cylinder trolley and regulator/flow meters • The oxygen cylinder and regulator/flow meters shall be tested with Test Certificates from POL (Pakistan Oxygen Ltd.), BOC (British Oxygen Company) or other equivalent institution. Test Certificates shall be provided for evaluation • A Certificate of Conformance to the Test Parameters and a Certificate of Origin indicating the country of origin and date of manufacture shall be available to the Buyer. • 'F' size oxygen cylinder with medical pin index fitting, filled with Medical grade oxygen • Come with cylinder key/spanner/bar or hand-wheel to turn cylinder on/off, 1 set per cylinder, total 2 sets • The cylinder shall be made of light weight material such as aluminium or equivalent • Bidder shall indicate the nominal oxygen filling volume (in litre) of the above cylinders. <p>Cylinder trolleys:</p> <ul style="list-style-type: none"> • Come with one trolley in suitable size to hold F size medical oxygen cylinders • To be fabricated from antirust treated epoxy powder coated mild steel tubular framework. • With two large, minimum 100mm rubber wheels with rims • With chain retention mechanism to hold cylinder on the trolley • Able to be self standing and stable when parked with or without cylinder <p>Regulator/ Flow meter</p> <ul style="list-style-type: none"> • It shall be Pin index type to fit the above oxygen cylinders 	4 Nos.

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	<ul style="list-style-type: none"> • Regulated to convert standard cylinder pressure (typically 2,000 psi) to approximately 4 BAR (4 atmospheres) pressure • The regulator delivery pressure should be factory pre-set, and does not permit user adjustment • The adjustment of delivery pressure by maintenance engineer via a screw slot or covered or capped system is required • The regulator MUST be diaphragm type; Needle valve regulators are NOT permitted • The regulator MUST provide genuine PRESSURE reduction and not just flow reduction • The flow meter to be attached to the regulator output • The flow meter should be spinning rota-meter type and adjustable from minimum 0 to 5 litres of oxygen per minute • The regulator and flow meter MUST be an integrated unit. • The flow meter outlet should be ribbed nipple type to permit connection of standard flexible oxygen tubing • The flow meter shall have outlet for connection to nebuliser or humidifier bottle. However, the nebuliser is not required to be included in the bid. • All standard accessories/consumables/parts required for the proper operation of the above item shall be included in the offer. • All standard Maintenance tools and cleaning /lubrication materials where applicable shall be included. <p>The unit offered shall be certified to meeting the relevant quality and safety requirements of TUV, CE mark (MDD), FDA, IEC, Radiation safety, safety of pressurized equipment and any other relevant quality and safety standards . Certificates showing the compliance of this unit offered with any relevant quality and safety standards MUST be submitted</p>	
4.	<p>INDUCTION UNIT WALL MOUNTED Anaesthetic machine, trolley mounted, O2 and N2O pipeline and cylinder, without flowmeter, back bar or top shelf. Features:</p> <ul style="list-style-type: none"> • Non-interchangeable pipeline inlets. • Pipeline and cylinder gauges for O2 and N2O. • Pin-index cylinder yokes. • Sliding common gas outlet and oxygen flush control. • Two auxiliary oxygen power outlets. • Footrest, lockable castors, and handles. • Central monitor shelf. • Full width stainless steel work surface. • Absorber support arm. • Nylon coated frame. • 2 gas O2/N2O FM cascade bank • O2 hose assembly NIST (3.6 mt) • N2O hose assembly NIST (3.6 mt) • Monitor shelf assembly Single stn SELEC back bar assembly 	2 Nos.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
	<ul style="list-style-type: none"> • 6 inch drawer unit single • Vaporiser • Keyed filler assembly for Halothane bottles 	
5.	<p>LARYNGOSCOPE Laryngoscope with Fiber optic illumination</p> <ul style="list-style-type: none"> • Blade type Macintosh in quantity three (3) Size 2, 3, 4 with fiber optic illumination • Fitting Blade: hook on fitting • Tip adjustable on the blade to provide the Clinician with greater flexibility, especially in cases of difficult incubating • Uses four different angles between the blade and handle i.e. 90 degree, 45 degree 180 degree and 135 degree (Standard) • With four locked position light remains illuminated during changing from one position to another • Complete Set provided in Zippered Case • SS or chrome plated knurled finish Handle <p>Miller type to be quoted as option</p>	20 Nos.
6.	<p>VENTILATOR INTENSIVE CARE</p> <ul style="list-style-type: none"> • Ventilator, flow generator, time cycled, volume preset, pressure limited, using dry oil free filtered gas 270 to 600 kPa at 60l/min. Suitable for adult/paed use. • Tidal volume - 3000 to 50 ml • Frequency 7 to 60 b/min • Minute volume at I:E 1:2l/min 20 to 2.0 • Gas consumption 100% O₂ - VDEL + 10ml/cycle • 45% O₂ - VDEL (30%) + 10ml/cycle • Inspiratory relief pressure with audible alarm - 20 to 80cm H₂O. • Output connection 22/15mm ISO 5356. • Patient circuit - autoclavable 1.2m long 15mm single bore hose and patient valve. • Demand flow - 100% in either air mix or no air mix, commences at -2cm H₂O. 50l/min at -8cm • H₂O max > 120l/min. • To be supplied with rail & pole clamp. • Patient circuit hose • Expiration pressure indicator • Probe gas inlet (to project spec) • O₂ and Air input hoses. 	40 Nos.
7.	<p>VENTILATOR TRANSPORT</p> <ul style="list-style-type: none"> • Unit to be used for adult, child and infant ventilation during cardiopulmonary resuscitation and for ventilation during transportation when necessary. • To have frequency control 10 to 40 breaths per minute, tidal volume control 1300 to 70 ml, inflation pressure monitor 0 to 100 cm H₂O, air 	10 Nos.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
	<p>mix control zero to 70% air mixture, adjustable relief pressure with audible alarm 20 to 80 cm H₂O, add on PEEP facility 0 to 10 or 20 cm H₂O.</p> <ul style="list-style-type: none"> To be supplied with a sling to enable the user to carry the unit easily and a patient circuit 1.25m long 15mm single bore silicone hose with autoclavable non rebreathing bag. 	
	ANGIOGRAPHY	
8.	<p>ACT MACHINE For measurement of clotting to assess the neutralization to heparin. Activated timer clotting. Complete with 100- cartridges. Dual Chamber</p>	2 Nos.
9.	<p>ANGIOGRAPHY MACHINE A fully digital flat panel single plane Cardiac Angiography / Cardiac catheterization system, dedicated for diagnostic & interventional cardiac procedures. The Angiography system should comprise of the following configurations. POSITIONING ARM: Frontal Arm: STAND. Floor/Ceiling mounted stand with motorized movements. Real time display of rotation angulations. Geometry: C-arm / G-arm RAO / LAO +/- 105 ° or more. Cranial / Caudal: Min. +/-45° or more, (Capable of achieving Spider position.) Rotation Speed: 20°/sec or more in LAO / RAO. Isocentric Height: Variable / Fixed. Auto Positioning: Programmable auto positioning of selected angulations. (30 or more programmable positions.) The control panel can be mounted at any side of the patient table. All the rotational / angles should be digital displayed next to the ceiling mounted monitor. Motorized / manual parking / rotation of the positioning arm.</p> <p>DIGITAL FLAT PANEL. Single plane C-Arm / G-Arm Image matrix of 1024 x 1024 x 12 bits or more. Standard cardiology size with three formats. Built in temperature stabilizer. Digital flat panel detector. Integrated collision protection feature All other standard accessories according to this digital flat panel.</p>	2 Nos.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
	<p>PATIENT SUPPORT/ TABLE. Catherization Table: Floor mounted with up down / vertical, longitudinal and transverse rotational movements. Longitudinal Stroke.: 1000-1500 mm. Lateral stroke: 100-300 mm CPR: In any table position. Table side movement control with one additional control to control the movements from any side of the table. Table top should be of such construction in material and durability to accept patient's weight of not less than 150 kg plus 100 kg for resuscitation. Table dimensions should be able to accommodate patients of all ages. Table top should have large metal free over hang for un-obstructed imaging coverage. Complete accessories should be provided including arm holder, hand grip, arm support and arm rest and positioning aids. Left / right table pivoting: + / - 90 degree.</p> <p>X-RAY GENERATOR. Microprocessor based high frequency using fiber optic for data communication between each imaging system. Dedicated X-Ray generator of 100 kW. Radiographic rating minimum 1000 mA. Serial filming exposures with shortest exposure of 1ms, with automatic kV and mA control for optimum image quality. The system should have capability of digital radiography and fluoroscopy. Should have capability of doing digital pulsed fluoroscopy at 12.5/15 & 25 / 30 /Sec. Automatic kV, mA & pulse width regulation facility.</p> <p>DIGITAL IMAGING AND ACQUISITION / FLUOROSCOPY. DIGITAL SYSTEM. Acquisition, storage and display in 1024 x 1024 x 10 bits or more at 12.5 / 15 and 25/30 FPS. Parallel processing capability / multitasking facility. Real time filtering and road map function. Magnetic Disk Capacity for Storage of 25,000 images in 1024 x 1024 x10 bit or more on the magnetic disk of main console. Minimum scene length to be 10 seconds in 1024 matrix. Digital pulsed fluoroscopy with 12.5 / 15 and 25 / 30 FPS in 1024 x 1024 x 10 bits or more. Images to be stored on and retrieved from archival disks for possible manipulation and quantification using available software packages.</p> <p>X-RAY TUBE. Dual focal with at least 1.9 MHU or better anode heat storage capacity to enable continuous heat dissipation during serial exposure. Dual focus, rotating anode. Focus 0.6 and 1.2 mm or better.</p>	

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	<p>Dose management with auto adjustment fluoro filters.</p> <p>MONITORING SYSTEM. Flat Screen 18” TFT of 1024 x 1024 matrix. Monitors should be ceiling mounted in the operation room.</p> <p>Brightness of the imaging monitors: 600 cd/m or better. Two monitors for live images and road mapping in the operating room 18” TFT. Two monitors for live images and road mapping in the control room 18” TFT. One 18” TFT monitor for live images and road mapping in the conference room remote from the Cath Lab. One integrated/Seprate monitor of 17 Inches for images of IVUS One additional monitor 18” TFT to display hemodynamic data in the operating room. All the monitors will be of Medial Grade, complied with international standards for medical monitors.</p> <p>CONTROLS: All controls of digital imaging system, incl. Post Processing & Quantification (LVA,QCA) analysis shall be in the control room while replay / display of reference image should be available in the examination room.</p> <p>RECORDING / ARCHIVING & COMMUNICATION SYSTEM: Recording / archiving system should be DICOM-3 compatible. The digital images should be stored as backup on CD/DVD. DICOM (send/storage, commitment, retrieve/query) Ethernet connection to connect with other terminals. Integrated Intercom system.</p> <p>REVIEW STATIONS (01). DICOM-3 Compatible. Edge enhancement, adjustable view speeds & post processing. High resolution 18” TFT Monitor. CD/DVD writer and CD/DVD ROM drive. Image storage capacity 3 x 80 GB with at least 10000 RPM Speed at each review station and SCSI/ Equivalent Controller at each review station. The bidders should quote their own licensed software.</p> <p>SOFTWARE / HARDWARE PACKAGES. Complete analysis package for the following cardiac applications.</p> <ul style="list-style-type: none"> - Dynamic pre and post PTCA / valvotomy comparison with one image live and other reference. - Automatic loop replay after acquisition or fluoroscopy. - Dynamic real time pan / zoom. - Dynamic real time digital image processing like edge enhancement or gamma correction, noise reduction (spatial filtration.) 	

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	<p>- Simultaneous display of fluoroscopy and reference images, not only as static images but as dynamic loop.</p> <p>Standard Quantification packages for QCA & LVA analysis.</p> <p>Online image density (gray scale) correction.</p> <p>Facility to review previous studies in the examination room from the patients old CD.</p> <p>All controls of digital imaging system incl. Post-processing & Quantification (LVA & QCA) shall be in the examination as well as control room.</p> <p>SURGICAL SHADOW LESS LIGHT.</p> <p>Ceiling suspended. For Angiographic and related surgical procedures.</p> <p>RADIATION PROTECTION.</p> <p>Ceiling suspended tilt able lead glass for radiation protection of operators head & neck regions & lower body parts region.</p> <p>Collision tolerant.</p> <p>Lower body radiation protection flaps.</p> <p>Lead lining of room where necessary.</p> <p>QUALITY AND SAFETY STANDARDS.</p> <p>FDA 510 K approval</p> <p>CE (MDD) compliance.</p> <p>OTHER ALLIED ACCESSORIES:</p> <p>One postscript level Laser Printer or Video printer for taking image printouts on paper. This printer is to be connected with the Main Digital Imaging System. Paper for 500 prints should be delivered with the printer.</p> <p>500 writeable CDs should be delivered with the system.</p> <p>Lead Glass Window size 4 x 1 meter or more. Pb equivalent 2.0 mm or better.</p> <p>20 x Pb Male Aprons, double side with different sizes. Pd equivalent front 0.5 mm. The aprons must be lightweight and double sided.</p> <p>40 wall mounted hangers.</p> <p>20 x Pb Aprons for female in two parts (upper and lower body) with different sizes (small, medium.)</p> <p>20 x Thyroid shields and 20 x Pb Goggles.</p> <p>160 kVA or more on line sine wave UPS for whole system with a minimum back up time of 10 minutes including room lights. Microprocessor based IGBT technology. Display and alarms of parameters. Three phase line voltage of 220V 50 Hz with all necessary standard parts including batteries.</p> <p>Programmable Contrast Media Injector with 500 disposable syringes (Medrad or Angiomat).</p> <p>2 x Complete standard stainless resuscitation trolleys and one Cardiac Defibrillator, synchronized type.</p> <p>Intercom for cath labs and wards etc.</p> <p>ACT machine (02 No.)</p> <p>Digital Subtraction Angiography with standard software package.</p>	

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	<p>ADDITIONAL REQUIREMENTS: Automatic positioning of the c-arm corresponding to reference image. Store Fluoro facility to store fluoroscopy 3D Coronary workstation with complete hardware and software. Aluminum Cupboard/storage racks for catheters etc within the Lab. Whole blood Oximeter Machine One. 10 x Pen dosimeter (digital) Volumetric Infusion pump x 2 Syringe infusion pump x 2</p> <p>INSTALLATION: Complete works for state of the art Angio Suite including storage racks paneling, lead lining, flooring, false ceiling, scrubbing area etc. Split air conditioning units for whole suite. Complete electricity works from power station to Angio room including earthing and cabling etc.</p> <p>TRAINING: Four weeks local training for two technicians. Two visit of Application specialist for doctors and Technicians.</p> <p>POWER REQUIREMENTS: Three Phase with line voltage of 220V, 50Hz.</p>	
10.	<p>HAEMODYNAMIC MONITOR Multichannel (18 channels or more) to record at least 4 channels IBP, Cardiac output with thermo dilution method. Surface ECG in any configuration and simultaneous 12 lead ECG, NIBP and SpO2 measurement. The system must have complete software for all pediatric & adult, right / left heart, angio / valvular hemodynamic examinations including functionality for hemodynamic calculations such as gradients, valve areas, shunt. Including annotations and 12 channel ECG. Digital display of all the parameters like IBP, Heart rate, cardiac output parameters. It should be possible to print the waveforms simultaneously while acquiring the data in the back ground. It should be possible to store the waveforms on the hard disk / MOD of the physiological recording system. The system should include following: 20 x Invasive blood pressure transducer. Reusable interface/cable for 12 lead ECG (05 Nos.), NIBP (05 Nos.) and Cardiac Output. Holder for mounting the IBP transducer alongside the patient table. The system should have 10 GB or more hard disk for permanent storage. Two color monitors 17 inch Active matrix TFT inside the control room. One monitor in the examination room that should be installed on the ceiling suspension with two monitors of imaging system. DVD / CD writer for archiving of study data and waveforms stored on the hard disk.</p>	2 Nos.

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	Facility of freezing the homodynamic data and simultaneous recovery of recent data / compare stored data with current waveform.	
11.	<p>PORTABLE ECHO WITH TEE A complete dedicated digital Echocardiography unit for wide range of premium performance application of cardiovascular imaging in pediatrics and adult. Dedicated Portable Echo with built in workstation / data management system for digital acquisition, storage and review of complete ultrasound studies including static and dynamic clips in DICOM format, read/write zoom. Studies can be reviewed and output to CD / DVD/MOD. The machine must have sharp and high quality image reproduction with heavy duty performance. It should have minimum following specification :</p> <p>DISPLAY: High resolution 1280x 1240 non interlaced, flicker free. Display size Min. 15” Flat/TFT, tilt able and swive able type.</p> <p>OPERATING MODES: B, 2D Imaging, M-Mode, Power Doppler, HPRF, Spectral Doppler, Color Doppler, Velocity Mode, Pw Doppler, Duplex And Triplex Doppler, CW Doppler Steerable and ECG Gating.</p> <p>CONTROL PANEL: Alphanumeric keyboard with built-in trackball. Direct access to system functions through dedicated keys. Indicator lights identify activated keys. Audio volume control with bidirectional / stereo speakers and foot switch User selectable image magnification control. Adjustable transmit focusing control. Total and Lateral Gran Compensation controls (6 or more).</p> <p>CALIPER / MEASUREMENTS : 6 to 8 calipers for measurement per screen trace length measurements for: Distance, angle, distance depth from skin line, area, circumferences, compound / volume, slope, time, heart rate and acceleration.</p> <p>APPLICATION: Cardiac, Peripheral, pediatric, adult cephalic and transesophageal with all required software for measurements and according with transducer</p> <p>OPERATING MODES: 2D tissue, 2D angio flow, color M-Mode, tissue velocity M-mode, tissue strain imaging, disynchrony imaging, continuous wave Doppler, tissue m-mode, pulse wave Doppler, tissue velocity imaging, tissue synchronization, blood flow imaging, blood flow angio flow imaging.</p>	2 Nos.

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	<p>DISPLAY MODES: Live and stored display format: full size and split screen. Review image format: for still and cine, simultaneous capability B+PW, B+ CFM/TVI+PW, CW, B+ or triplex mode, B+ color split screen display. Tissue Imaging, 2D mode, multi dimensional mode, M-mode, color Doppler imaging, color flow imaging, color Doppler imaging, color angio, color m-mode, blood flow imaging, blood flow angio imaging, tissue velocity imaging, tissue velocity imaging mode, tissue tracking mode, tissue synchronization imaging mode, PW / HPRF Doppler, CW Doppler, contrast imaging, LVO Contrast, Vascular / abdominal contrast, vascular calculations, cardiac measurements,</p> <p>FRAME RATE Min. 200fps in B-Mode and 100fps in Doppler mode.</p> <p>CINE MEMORY Min. Cine Memory for 500 frames or 250MB min.</p> <p>IMAGE VIEWING DEPTH: 20 – 280 mm or more for cardiac application</p> <p>IMAGING MODES / TECHNIQUES: Tissue harmonic Imaging, Tissue Doppler Imaging, Color Angio, Tissue Velocity Imaging Tissue Imaging (Display real time Doppler shift information from moving tissue to better visualize and quantify myocardial function). Capability to display time difference in myocardial motion in color for CRT (Cardiac resynchronization therapy). Quantitative strain rate imaging; An advanced quantitative technique of Tissue Doppler Velocity. Strain rate is a measure of the contractile motion of myocardium. Auto-Tracking contrast quantification: quantitative technique for on-line assessment of contrast agent images. Contrast plus sequencing technology: a real time, low mechanical index, non-linear imaging technique for contrast agent examinations. The software should have the capability to show contrast agent only, tissue only or contrast and tissue displays. Contrast Harmonic Imaging capability. Vascular imaging software for carotids with IMT measurement.</p> <p>STRESS ECHO Integrated multi stage stress echo system for advance and flexible stress echo Acquisition and measurement for LV B-Mode imaging. quantitative analysis for contrast during stress. Examinations Used with TDI protocols.</p> <p>EXTERNAL STORAGE DEVICE Built-in MOD/CD / DVD Drive WITH 10 DISKETTES.</p>	

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	<p>SYSTEM DYNAMIC RANGE Dynamic range minimum 160 dB or more</p> <p>COMMUNICATION SOFTWARE System should conform to DICOM 3 communication software for: Image Storage, print, Query / Retrieve, Network Communication.</p> <p>STANDARD TRANSDUCERS: Linear Probe multi frequency to cover frequency of 6.0-8.0 MHz. Multi frequency Phased array sector probe to cover 2.0/2.5–4.0 MHz. Multi frequency Phased array sector probe to cover 5.0 – 8.0MHz. CW Pencil Probe</p> <p>Probes: Should be light weight, capable of multiple centre frequencies on transmit for both 2D, color Doppler PW/CW (Steerable) Imaging and to perform Harmonics.</p> <p>PORTS: Active Switch able transducer transthoracic port excluding pencil port Video Output USB / RS 232 Networking</p> <p>ACCESSORIES: Digital Color Thermal Printer with 10 Packs of 100.. Online UPS for 10 min. backup time for complete unit including Printer. Digital B/W Thermal Printer with 50 rolls of papers. Jelly 20 L in bottles.</p> <p>FUTURE UPGRADES: The unit should have the capability for up gradation of future software (shall be provided free of cost within the warranty period).</p> <p>POWER REQUIREMENT 220-240VAC 50 Hz</p>	
	CSSD	
12.	<p>400 Ltr. STERILIZER x 2 Double Door PLC system, LCD Screen Both Side Chamber Size 24 X 24 X 42 Vacuum Based, Electric Heater 36 KW, Inner Chamber Stainless Steel 316 Outer Jacket Stainless Steel 304, Temperature Range & control From 121 C – 134 C With Heat Exchanger, Pressure Safety Valve, Steam Exhaust Valve, Pressure Switch Built-in, over heat/pressure protection circuit Installed as safety devices</p> <p>02: Washer Disinfector 200Ltr. (Double Door) Chamber Volume 200Ltr</p> <p>03: RO PLANT Reverse Osmosis Plant 5,000 GPD according to water quality and system</p>	1 No.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
	<p>requirement .</p> <p>04: WASHING SINK (DOUBLE BOWL) Stainless Steel 304L, Bowl Size 16" x 16" Sink Size 92" x 22", 16 Gage sheet Main Frame 1 ½ Square pipe</p> <p>05: AUTO SCRUB x 2 2 points with Auto Sensor or knee operated 6' Feet (Timer 0 to 5 min) 16 Gage Sheet Stainless Steel One Sheet Without joint</p> <p>06: WORKING TABLE x 2 Main Frame 1 ¼ Square Pipe 16 Gage, Sheet 18 Gage Size (60"L x 30"W x 35"H)</p> <p>07: PAPER HOLDING TROLLEY Stainless Steel 16 Gage Pipe</p> <p>08: LOADING TROLLEY Stainless Steel Structure,</p> <p>09: SORTING TABLE Size (60"L x 24"W x 35"H) Stainless Steel 304 1 ¼ Square Pipe 18 Gauge sheet</p> <p>10: PACKING TABLE x 3 Stainless Steel Size: (72"L x 30"W x 35"H) Top Shelf size: 72"L x 10"W 1 ¼ Square Pipe 18 Gage Stainless Steel 304</p> <p>11: Storage Rack x 8 Wire Mash Stainless Steel. 3 Shelves, Imported Castors Main Structure 1 ¼ Round Pipe 16 Gage & 1" Square Pipe 16 Gage, Size: (48" x 24" x 66") 6MM Wire Mash Rods Stainless Steel 304 Shelf Size</p> <p>12: LOW Heat Sterilizer 300 Ltr ETO/Formaldehyde/Plasma</p> <p>13: Hot Air Sterilizer 70 Lit</p>	

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FURNITURE MEDICAL		
13.	<p>BED INTENSIVE CARE</p> <p>Function:</p> <ul style="list-style-type: none"> • Electric Hospital bed suitable for use in Intensive / Coronary Care Units 4 motors <p>Feature:</p> <ul style="list-style-type: none"> • Adult Intensive Care bed with head and foot panels • Height adjustment • Two way tilt, instantly, with any angle secured by a failsafe friction lock, and a special stop lever to hold the horizontal • Trendelenburg / antitrendelenburg position • Radiolucent backrest is with controls on both sides, facilitates use of the C arm imaging. • Usable X-ray area L27 x W29" approx • 5" castors, foot operated bow brake, locks three castors and provides easy steering • Mattress with internal hinge and standard nylon proof cover • Safe working load 180kg <p>Technical data:</p> <ul style="list-style-type: none"> • Length External 86.5" Width 36" • Height to mattress platform 16.5 to 31" • 5" castors with anti static tyres • Mattress 79" x 33.25" x 5" <p>Accessories</p> <ul style="list-style-type: none"> • Bed fitting Patient Lifting Pole • Collapsible / Removable Side Rails Pair, • I.V Rod • Removable Head and Foot End • CPR Board • Battery Backup 	20 Nos.
14.	<p>BED INTENSIVE CARE</p> <p>Function:</p> <ul style="list-style-type: none"> • Hydraulic Hospital bed suitable for use in Intensive / Coronary Care Units <p>Feature:</p> <ul style="list-style-type: none"> • Adult Intensive Care bed with head and foot panels • Height adjustment with foot pedals on both sides of the bed • Two way tilt, instantly, with any angle secured by a failsafe friction lock, and a special stop lever to hold the horizontal • Trendelenburg / antitrendelenburg position • Radiolucent backrest is gas spring assisted with controls on both sides, facilitates use of the C arm imaging. • Usable X-ray area L27 x W29" approx • 5" castors, foot operated bow brake, locks three castors and provides easy steering 	80 Nos.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
	<ul style="list-style-type: none"> • Mattress with internal hinge and standard nylon proof cover • Safe working load 180kg Technical data: <ul style="list-style-type: none"> • Length External 86.5" Width 36" • Height to mattress platform 16.5 to 31" • 5" castors with anti static tyres • Mattress 79" x 33.25" x 5" Accessories <ul style="list-style-type: none"> • Bed fitting Patient Lifting Pole • Collapsible / Removable Side Rails Pair, • I.V Rod • Removable Head and Foot End • CPR Board 	
15.	LINEN TROLLEY Frame made of 1"x1" square S.S. pipe 16 SWG . Having three shelves. Base frame made of 1"x2" S S. Pipe 16 SWG rounded at corners with kick of disc and with four rubber ball bearing castors 125mm two of which with braking system, wear resistant, non staining, electrically conductive. Dimensions: 75cm (W) x 45cm (D)x 120cm (H).	20 Nos.
16.	CABINET CATHETER Catheter Cabinet for Angiography Suite	2 Nos.
17.	CABINET CD Cabinet for Storage of CDs of Angiography Exams	2 Nos.
18.	CABINET INSTRUMENT <ul style="list-style-type: none"> • To be constructed of heavy gauge steel with an epoxy powder coated finish or SS. • Door frames of steel with glass panels, SS hinges and locking handles. • To be supplied with 6 glass shelves. 	20 Nos.
19.	CHAIR ANAESTHETIST <ul style="list-style-type: none"> • Stool to be manufactured from mild steel / ABS Base with 33 cm dia. • Spun seat for height adjustment. • To be mounted on four 5 cm antistatic castors. • To have antistatic seat pad as standard and back rest. 	9 Nos.
20.	LOCKER BEDSIDE <ul style="list-style-type: none"> • Shall be constructed from epoxy coated mild steel and or ABS Plasc. • Shall be complete with drawer and lower cupboard and mounted on 4 clog resistant castors. 	80 Nos.
21.	BESIDE BENCHES Wooden benches best quality for three persons.	80 Nos.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
22.	PATIENT STOOL <ul style="list-style-type: none"> • Stool with 16 gauge stainless steel structure and seat of diameter 300mm, • Height adjustable by simple spun mechanism. • Height adjustment not less than 53cm to 68cm. • Mounted on five 5cm swivel castors 	20 Nos.
23.	SCRUB SINK SINGLE 3 points with Auto Sensor or knee operated 9 Feet (Timer 0 to 5 min) 16 Gage Sheet Stainless Steel One Sheet Without joint	5 Nos.
24.	TABLE OVER BED CANTILEVER AUTO RISE <ul style="list-style-type: none"> • Height adjustable approx 77 to 114cms by lifting under the table top. • To lower use the release bar and apply slight pressure. • To be finished in fire retardant laminate. • Tilttable table top with a metal bookrest 	80 Nos.
25.	TREATMENT TROLLEY Tilting patient's trolley for use in patient's recovery areas. <ul style="list-style-type: none"> • Upholstered top, with adjustable head 1900 x 605mm, at 890mm high, inc. 750mm head, 75mm thick, with full upholstery • Tilting top • Side rails • Cylinder cage • Bumper bar/push handle • IV pole • 200mm base plate castors • Safe Working Load 190kg 	20 Nos.
26.	TROLLEY ANAES 2 SHELVES/1 DRAWER <ul style="list-style-type: none"> • Size: 600x400x860mm • With 2 shelves and 1 drawer, Antistatic castors 2 with brakes, Æ 75mm, • Material: S.S. 	9 Nos.
27.	TROLLEY GENERAL PURPOSE – SS <ul style="list-style-type: none"> • Height 86Cm • Material : S.S with 2 Shelves, • 4 Antistatic castors, 2 with brakes Æ 75mm 	20 Nos.
28.	TROLLEY INSTRUMENTS CATHETER SS <ul style="list-style-type: none"> • 60 cm x 150 cm • Height 86Cm • Material : S.S with 2 Shelves, • 4 Antistatic castors, 2 with brakes Æ 75mm 	4 Nos.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
29.	TROLLEY MEDICINE WARD LOCKABLE LGE Multi-drawer Mild Steel/PVC color coded	6 Nos.
30.	TROLLEY PATIENT NOTES Mild Steel/PVC color coded	3 Nos.
31.	TROLLEY PATIENT PREPARATION / DRESSING <ul style="list-style-type: none"> • Trolley for the storage and preparation of dressings. • Unit shall be constructed from stainless steel. • The design shall be of the type with a work surface of approx 60 w x 50 d cm, • With 4 drawers under and a lower shelf. • Unit shall have a side mounted s/s bucket. • To be mounted on 4 x 10cm castors. • Internal drawers shall be fitted with precision slides and their internal dimensions shall be approx 10 d x 65 w x 41 d cm. 	4 Nos.
32.	TROLLEY PLASTER <ul style="list-style-type: none"> • Trolley for the storage and preparation of plaster of paris dressings. • Unit shall be constructed from stainless steel. • The design shall be of the type with a work surface of approx 60 w x 50 d cm, • With 4 drawers under and a lower shelf. • Unit shall have a side mounted s/s bucket. • To be mounted on 4 x 10cm castors. • Internal drawers shall be fitted with precision slides and their internal dimensions shall be approx 10 d x 65 w x 41 d cm. 	4 Nos.
33.	TROLLEY PATIENT TRANSFER - Standard accessories <ul style="list-style-type: none"> • Approx: 2035L x 710B x 915-1000H • Steel frame with epoxy polyester finish. • dia 125 wheels, 2 with brakes. • 4 ring bumpers. • Mattress thickness 5 cm. with fire retardant vinyl covering • Pedal controlled hydraulic height adjustment. • I.V. Pole. • Folding Sides. 	20 Nos.
34.	WHEEL CHAIR Folding Local / Imported	10 Nos.
35.	FOOT STEP SS Foot Step with Antiskid Surface (Rubber or Metal)	100 Nos.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
36.	INFUSION STAND SS with Telescopic Height adjustment and 5 Casters	20 Nos.
37.	INFUSION STAND Wall mounted SS	80 Nos.
HOLLOW WARE		
38.	BEDPAN PERFECTION PATTERN S/S ADULT	20 Nos.
39.	BUCKET 10L PLASTIC	4 Nos.
40.	DISH KIDNEY	30 Nos.
41.	JUG GRADUATED S/S 1000 ML	2 Nos.
42.	JUG POLYPROP 500ML	2 Nos.
43.	KICK BUCKET	12 Nos.
44.	STAND BOWL DOUBLE HORIZONTAL	8 Nos.
45.	STAND BOWL SINGLE	8 Nos.
46.	TABLE MAYO HEIGHT ADJUSTABLE	8 Nos.
47.	TRAY INSTRUMENT	20 Nos.
48.	URINAL FEMALE S/S	20 Nos.
49.	URINAL MALE S/S	20 Nos.
50.	VOMIT BOWL WITH LID	20 Nos.
HOSPITAL EQUIPMENT		
51.	ANALYSER BLOOD GAS Specification <ul style="list-style-type: none"> • Microprocessor based • Control panel with easy setting and monitoring • Easy 2 point calibration • Calibration history at least 24 hours • Easy changing access to the Electrodes and the solutions • Automatic sample recognition and sampling • Possibility of upgrade for data management • Sampling techniques - whole blood • Sampling volume <ul style="list-style-type: none"> - syringe - less than 100 micro - capillary - less than 70 micro - Micro sample mode - less than 40 micro lit · Analysis time - shall be less than 60 secs · Measurement ranges <ul style="list-style-type: none"> - Measured parameters <ul style="list-style-type: none"> - PH - 6.0-8.0 - H+ 10.0-500.0 mmol/l - pO2 0.0-800.0 mmHg - pCO2 - 5.0-250.0 mmHg - Barometric pressure - 400.00-800.0 mmHg - Calculated parameters <ul style="list-style-type: none"> - HCO3 act - 0.0-60.0 mmol/L 	3 Nos.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
	<ul style="list-style-type: none"> - HCO₃ std - 0.0-60.0 mmol/L - BE vv +/- 30mmol/L - tCO₂ - 0.0-60.0 mmol/L - O₂ sat - 0.0-100.0% - O₂ - 0.0-40.0% - Entered parameters - Temperature - 10° to 45°C - Temperature corrected parameters - pH(T) 6.0-8.0 - H⁺ (T) 10.0-500.0 mmol/L - pO₂ (T) 0.0-800.0 mmHg - pCO₂ (T)BE vt 5.0-250.0 mmHg <p>Safety Features</p> <ul style="list-style-type: none"> • Equipment meet IEC 601 standard or equivalent <p>Power Requirement</p> <ul style="list-style-type: none"> • Operate at 220 VAC +/- 10% <p>Accessories</p> <ul style="list-style-type: none"> • Include all standard accessories • Include reagent for immediate start up and for 2600 analysis as recommended by manufacturer 	
52.	<p>BALLOON PUMP</p> <p>Self contained mobile console with ECG amplifier with possible selection 5 leads arterial blood pressure amplifier. Discriminative triggering circuit to command balloon actions on patient's ECG arterial blood pressure curve or internal simulator 80 BPM. Colour graphic displays at least of 10" for display of arterial and pressure heart rate balloon volume used and alarm conditions with trouble shooting procedures. Wave form displays for ECG, arterial pressure and balloon pressure on three channel memory type oscilloscope. Fall safe system. V Pacing switch. Progressive viewing sequence. Integrated battery power supply to take patient to catheterization labs, operating theatre or other hospital: 60 minute autonomy. CO₂ / helium tank wrench. 5 lead ECG cable, male connector pressure, transducer adopter, chart recorder. Cardiac output computer 220 V, 50 Hz, Ac. One spare set of patient cable. System should be complete to display all the parameters. Disposable balloon catheters of varying sizes for use with the pump 50 nos.</p>	3 Nos.
53	<p>STERNUM SAW</p> <p>Pneumatic Sternum Saw with all standard Blades and Accessories(04) Electrical Sternum Saw with all standard Blades and Accessories (04)</p>	2 Nos.
54.	<p>DRILL SET ORTHOPAEDIC</p> <ul style="list-style-type: none"> • To consist of:- • 3 metre Spiral Pneumatic Hose. • Drill 	2 Nos.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
	<ul style="list-style-type: none"> • Chuck for Square Shank • Jacobs Chuck for Shanks up to Dia 6.35mm • Chuck for AO-Shanks • Jacobs Chucks for Shanks up to Dia 4.0mm • Three Jaw Chuck for Shanks up to Dia 4.0 mm • Wire Attachment up to Dia 2.5mm • Airlan Pneumatic Motor • Osteotomy Saw W/Star-Coupling • Saw Blade 5x35mm • Saw Blade 10 x 35 mm • Sawblade with Starc., Usable L. 50mm, width 20mm • Sawblade with Starc., Usable L. 50mm, width 30mm • Sawblade with Starc., Usable L. 65mm, width 25mm • Sawblade with Starc., Usable L. 65mm, width 40mm • Sternum Sawblade 75 x 35mm • Reamer with Harris Cupling • Adaptor for Flex. Reamer Acc. Din/Harris • Cement Injector • Disposable Syringe 50ml with Injection Tube <p>Sterility Oil for Care, Maintenance</p>	
55.	<p>DRILL ENT</p> <ul style="list-style-type: none"> • Operating speed of 2000 to 20000 rpm, • Operating pressure 100 psi, Standard operating torque over 6 in oz, • Maintenance free (No lubrication Required), • Recommended Power Source water pumped compressed dry nitrogen 99.97% pure, • Exhaust diffused rearward to foot control, • Forward and reverse modes offering on hand piece. 	2 Nos.
56.	<p>ARTHROSCOPE SYSTEM</p> <p>Arthroscopy equipment system, cart mounted, consisting of:-</p> <ul style="list-style-type: none"> • Shaver unit complete with set of blades for large, medium & small joints • CO2 insufflator • Pump irrigation Arthroscopy • Suction pump (with footswitch) • H/F surgery unit (with footswitch) • H/F surgery set consisting of wire snare (2), knife electrode (2), ball electrode (2), needle electrode (1) and flat electrode (2) • Camera 3 chip • Camera control unit • Monitor colour 36cm • Video-recorder VHS/PAL • Video colour printer • Light source Xenon lamp 175 watt (colour temp 6000k) 	1 No.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
	<ul style="list-style-type: none"> • Cart mobile Qty 2 <p>Basic instrument set for arthroscopic surgery consisting of:</p> <ul style="list-style-type: none"> • Telescope (Autoclaveable) 4mm wide angle incl. Universal sheath, trocar, obturator, inflow canula, inflow tube with obturator and trocar and light guide cable • forcep sponge holding x 2 • clip towel (noninvasive) x 5 • arthroscope 30 deg (25 deg) (4 mm) • arthroscopic sheatg and obdurator (5 mm) • no 3 BP handle with size 15 blade • scissors hooked (3.5 mm) • rongeur straight (4mm) • forceps grasping arthroscopic (3.5 mm) • punch (basket) forceps (3.5 mm) • retractable knife (4 mm) • aspiration needle 18 gauge <p>Shall be supplied with all connections and accessories necessary to ensure a functional system.</p>	
57.	<p>LAPROSCOPIC SURGERY SYSTEM</p> <p>Laparoscopy equipment system cart mounted, consisting of:-</p> <ul style="list-style-type: none"> • CO2 insufflator 30 liters flow rate and heating device • Irrigation/suction pump • H/F unit unipolar/bi-polar with footswitch 200 watt • HD Camera control unit • Monitor colour 50cm • Video recorder VHS/PAL • Video colour printer • Light source Xenon lamp 175 watt • 2 Carts mobile • All scopes for general surgery and urology should be quoted for selection with instruments 	1 No.
58.	<p>CRASH CART WITH DEFIB BIPHASIC</p> <p>Unit to be supplied completely equipped as detailed below.</p> <ul style="list-style-type: none"> • The contents will be clearly documented for each unit. <p>Emergency Resuscitation Cart:</p> <ul style="list-style-type: none"> • Dished stainless steel top with welded liquid retaining corners. Approx. 630 x 445mm. 25mm dished. • Lift-up laminated work flap Approx. 305 x 455 • Three drawers 2 shallow 600 x 430 x 65mm and 1 deep 600 x 430 x 165mm. • 1 Shallow drawer fitted with drawer Tidy Unit. • Lower cupboard 625 x 475 x 290mm with central locking/securing all drawers and cupboard. 	12 Nos.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
	<ul style="list-style-type: none"> • Operated by cupboard door and use of security seals. • Double hook stainless steel I.V. Pole. • Double push handle • Low level plastic bumper bar • Quality cushion castors (2 x braking) • 2 x stainless steel cylinder holders for D or E size cylinders. • Cardiac board 600 x 400 x 55mm with stainless steel housing brackets at rear of trolley. • Universal rail system fitted to width of trolley. • 6" aneroid sphygmomanometer with adult velcro cuff and rail clamp. • Electronic timer and rail clamp. • Venturi suction unit with O2 outlet and 1.8 litre jar and rail clamps. • Yankauer suction tube and connecting tubing. • 0-15rpm O2 flowmeter fitted to O2 venturi outlet. • Pin index regulator with outlet for connection to remote venturi hose and O2 outlet. • Intubation set comprising: <ul style="list-style-type: none"> - Macintosh laryngoscope with 3 blades. - Magill introducing forceps - Adult resuscitator - Set disposable E.T. tubes (5) - Set Guedel airways (3) - Pen torch - Artery forceps (2) - Dressing scissors (2) • Set plastic tubes <p>Examination light to rail clamp (Anglepoise type). Defibrillator Biphasic with CRT monitor</p> <ul style="list-style-type: none"> • Full manual override and external pacing • Pre-connect electrodes for defibrillation, monitoring and pacing. • Separate 3 lead ECG monitoring cable • AC mains operation and charging and/or remote 4 bay battery charger/auto tester. • High quality strip recorder with full summary. • Integral digital ECG recording 	
59.	<p>DEFIBRILLATOR – AED Biphasic Tran thoracic (external) defibrillator with TFT/LCD colour display Synchronized output with ECG. Control of energy charging/ delivering on main panel & apex paddle. Charging Indicators. The energy range should be adjustable for paed and adults up to 200 Joules. Charging Time for full energy will be less than 10 sec. Screen Size of approx. 5 inch coloured. Display of HR, ECG through paddles and Lead I.II & III patient cable. Built in recorder for printing of full summery on standard 50mm paper.</p>	12 Nos.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
	<p>Alarms for High and low Heart rate, low battery warning. AC 220V / 50Hz operated. Built-in Rechargeable battery with charger for minimum 50 shocks at max. energy. Auto tester/self check. External paediatric and adults Paddles, ECG cable. AED facility. Pacing facility.</p>	
60.	<p>DIAGNOSTIC SET</p> <ul style="list-style-type: none"> • Ophthalmoscope, • Otoscope, • Battery handle, • Charger, • Set of high quality specula, • 3.5V halogen bulb, 2 spare bulbs. • Wall Mounted • Mains Operated 	40 Nos.
61.	<p>EXTERNAL PACEMAKER SINGLE CHAMBER Temporary pacemaker for cardiac pacing OPERATING FEATURES and CHARACTERISTICS: Asynchronous and demand moded operation Sensing: light indication Pacing: light indication Calibrated rate, output and sensitivity controls Defibrillator protected PARAMETERS: Stimulation control of current output upto 20mA Pulsing rate control adjustment upto 150 ppm/ 320 Sensitivity control upto 8mV Pulse width 1.5 m sec Asynchronous and demand mode switch INDICATORS: Battery status light indication OTHER FEATURES: Portable Accessories including case and cables OPERATING REQUIREMENTS: Standard alkaline battery operation Backup operation during battery change.</p>	12 Nos.
62.	<p>EXTERNAL PACEMAKER DUAL CHAMBER Dual chamber multi mode temporary 'pacemaker for cardiac Pacing OPERATING FEATURES and CHARACTERISTICS: LCD display of all pacing, sensing and warning indicators PARAMETERS: Multi-mode: all combinations of</p>	4 Nos.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
	atrial,ventricular&dual;AA,VV,DD,A0,VO,DO,DV Adjustable pacing rate adjustment upto 150 ppm Adjustable pacing voltage upto 10V Sensitivity control upto 8mV Pulse width upto 1.5 m sec OTHER FEATURES: Portable Accessories including case and cables OPERATING REQUIREMENTS: Standard alkaline battery operation Backup operation during battery change	
63.	LAMP EXAMINATION MOBILE <ul style="list-style-type: none"> • Light Source: 12 Volt 50 Watt Tungsten Halogen Dichroic Cap Lamp • Spot Lamp 10deg • Average Bulb Life 1,000 Hours • Light Intensity 52,000 Lux at 0.5 Meters • Color Correction to 4300deg Kelvin with optional filter • Dimming 100% / 66% Mechanical: <ul style="list-style-type: none"> • Five Star base with castors • Multiflex arm with ultimate flexibility of postioning the lamp head. • Double wall lamp head housing ensure low surface temperature. • Anti Shatter screen fitted to the front of the lamp housing. Electrical Supply; <ul style="list-style-type: none"> • 230 volt 50/60 Hz, 12 Volt safety transformer • Reversible overload and short circuit protection • Compliance 89/336 EEC Directive Electromegnetic Compatibility • 72/23 EEC Directive of Low voltage equipment • 93/42 EEC Directive of Medical Devise Class 1 	8 Nos.
64.	LAMP EXAMINATION WALL MOUNTED <ul style="list-style-type: none"> • Double skin construction lamphead to reduce surface temperature. • Lamphead to turn trough 300deg. • Light intensity 18000 lux at 50cm. • Arm &50mm flexible arm. • Low voltage integral transformer. • Complete with wall mounting. 	20 Nos.
65.	NEBULISER HEAVY DUTY <ul style="list-style-type: none"> • Aerosol with piston Electro compressor. • Main: osomg speed: 1 cc in 3 minutes • Pressure 1: 1 bar • Air flow 15 liter/minute • Noise Level : 60 db 	2 Nos.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
	<ul style="list-style-type: none"> • Granulometric size of medication: 1-10 microns by means of multi PIPSER Component. 	
66.	<p>NEBULISER ULTRASONIC</p> <ul style="list-style-type: none"> • Ultrasonic Energy for uniform and highly dense particles of 1-5 microns size • Filtration rate of at least 95% of 0.3 micron or larger dust particles to provide purified air for aerosol • Autoclaveable delivery pipes • Mobile stand with solution bottles for safety • Nebulizing rate of 4 ml/min with particle Appr. size of 1-5 microns • Nebulizer time setting from 0-30 mins. • Medication cup capacity: 150ml • Power 220 Volts/50 Hz with rechargeable battery operation • One extra flexible arm/delivery pipe 	8 Nos.
67.	NEEDLE SYRINGE DESTROYER	100 Nos.
68.	<p>PUMP SYRINGE</p> <ul style="list-style-type: none"> • Flow Rates: 0.1 - 199.9 ml/hr. Numeric LCD/LED/DIGITAL. Syringe Type: Standard • Disposable, Plastic, Appr. Size, 10, 20, 30, 50/60 ml. Drive Accuracy. $\pm 3\%$ Quick freed/rapid infusion Rechargeable battery and mains operated. Complete with infusion set and safety alarm system for occlusion, end of infusion. 	100 Nos.
69.	<p>PUMP VOLUMETRIC INFUSION</p> <ul style="list-style-type: none"> • Pump to be manufactured from steel and run on mains electricity. Infusion rates 1 to 999 ml/hr. • Volume accuracy over range of infusion rates. • Volume infusion switch, limit section with reduction to keep vein open, volume infused display, full alarm system, and air in line detection capability. Power requirements 50 watts. 	100 Nos.
70.	<p>RESUSCITATION BAG ADULT</p> <ul style="list-style-type: none"> • Silicon Resuscitation Bag with adult and child face mask sizes 1,2,3,4 with E2 valve and fully autoclavable. • Reservoir Bag volume 1700 ml or more. • Oxygen Reservoir volume approximately 2500ml for adult and child • Tidal maximum volume: approximately 1000ml for adult • Resuscitation Bag to be manually operable and able to be connected to an oxygen source upto 100% for ventilation through a mask or an endotracheal tube. • To be able to connect to an oxygen source up to 100%. • Unit to be supplied with a carrying case 	20 Nos.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
71.	RESUSCITATION BAG CHILD <ul style="list-style-type: none"> • Silicon Resuscitation Bag with infant face mask sizes 00 01 & 02 with non rebreathing valve with 40cm of H2O pressure release • Fully autoclavable. • Reservoir Bag volume 250 ml • 360° swiveling patient connector • Resuscitation bag to be manually operable and able to be connected to an oxygen source upto 100% for ventilation through a mask or an endotracheal tube. • To be able to connect to an oxygen source up to 100%. • 1.5 mtr O2 tubing • Unit to be supplied with a carrying case 	10 Nos.
72.	RIPPLE MATTRESS W/MOTOR <ul style="list-style-type: none"> • Alternating pressure mattress with support area of 1720MM X 860MM. • To contain 14 air cells with variable geometric section 83MM X 14MM. The material to contain an anti bacterial agent. To have a reinforced base sheet membrane with tuck apron, removable cells and protective cover. • The compression pump to have a built in equalizing device to prevent over inflation. • Cycle time to be 10 minutes, to have a low-pressure indicator. • To be supplied in a plastic case with handles for easy storage complete with five spare cell 	10 Nos.
73.	SCALES PATIENT W/HEIGHT MEASUREMENT <ul style="list-style-type: none"> • Scale to have low level platform finished with non slip cover, the steel yard arm to be waist high. • Capacity: 200Kg x 100gms. Imperial and metric height measure to be fitted to the machine. 	10 Nos.
74.	SPHYGMOMANOMETER ANEROID WALL TYPE Aneroid sphygmanometer with large easy to read white dial with bold figures. Complete with pediatric and adult velcro cuff.	40 Nos.
75.	SPHYGMOMANOMETER MERCURIAL MOBILE <ul style="list-style-type: none"> • Constructed from shatter resistant materials fully protected plastic manometer tube with clear reading scale, range 0 to 300 Hg. • Integral mercury reservoir, spring coil tube, bulb, valve, • Paediatric and adult cloth cuff with Velcro fastening in cuff holder, • Unit mounted on stable 4 to 5 castor mild steel base. 	10 Nos.
76.	STETHOSCOPE	100 Nos.
77.	SUCTION UNIT <ul style="list-style-type: none"> • Unit to be mobile, high performance suction at 40 litres per minute flow rate, with maximum vacuum at 730mm Hg. • Jar top to incorporate a float cage assembly and anti flood valve and to be 	20 Nos.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
	sterilisable. <ul style="list-style-type: none"> • Case to be manufactured of metal finished in an epoxy coat, with a handle for easy maneuvering. • To have a vacuum guage, vacuum control on/off switch and anti static castors. • To be supplied with one spare 2 litre jar per unit. 	
78.	THERMAL BLANKET For hypothermia treatment	10 Nos.
79.	TOURNIQUET PNEUMATIC <ul style="list-style-type: none"> • The tourniquet to be able to operate one cuff only, • To have two guages to show circuit pressure and cuff pressure. To be easy to inflate nad deflate. • To have a hand pump device fitted to allow manual inflation of the cuff in an emergency. • To be supplied a mobile stand with a shelf for the cuffs, one 12" and one 18" double bladder tourniquet cuffs with velcro fittings. • Tourniquet to operate from an air cylinder. 	4 Nos.
80.	TOURNIQUET QUICK RELEASE <ul style="list-style-type: none"> • Belt type tourniquet with a quick release mechanism. • To have a soft lining to protect the patient. 	10 Nos.
81.	VASSCULAR DOPPLER <ul style="list-style-type: none"> • Vascular Assessment Doppler, applications for arterial and venous flow studies, detection and assessment of occlusions and stenosis, • early detection of venous reflux, ankle pressure index for leg leg ulcer management and independent assessment of simultaneous forward and reverse flow. • interchangeable probes 4, 5, 8, 8EZ or 10MHz for vascular assessment or can be used for obstetrics with a 2 or 3MHz probe, • hard copy print out for documentation purpose 	1 No.
82.	WARMER BLOOD DRY HEAT TYPE <ul style="list-style-type: none"> • Dry warming system for blood and infusions with pre-selected temperatures over the range 35^oC to 39.5^oC and • Safety cutout at 41^oC with visual and audible alarm. 	10 Nos.
MONITORING		
83.	CENTRAL STATION Central Station for use in intensive and coronary care units <ul style="list-style-type: none"> • Unit shall be capable of monitoring of upto 20 beds. • The unit shall use wireless networking. • Shall provide a minimum of five 72 hour trends per monitor. • Shall allow instant alarm bed viewing. 	5 Nos.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
	<ul style="list-style-type: none"> • The bed status shall always be displayed. • Bed to Bed Communication • The user shall be able to easily configure the display. • Shall be capable of producing a shift report. • Drug and Haemodynamic Calculations • Shall be supplied with the following: • Hub Controller • Hub - Central Nurse Station Interface • Installation Kit • Laser Printer Interface • Laser Printer 	
84.	<p>PULSE OXIMETER Non-invasive measurement of oxygen saturation and pulse rate with coloured graphic screen. Display of oxygen saturation and pulse rate. Oxygen saturation measurement range from 0 -100%. Pulse strength perfusion indication Capability of Plethesomography. Pulse rate measurement from 20-250 bpm. Visual and audible indication of alarms. High and low alarms settings. Adult finger and paediatric sensor (reusable type) Power of 220 V/ 50 Hz. Built-in re-chargeable battery and chargeable.</p>	20 Nos.
85.	<p>ECG 12 CHANNEL INTERPRATIVE WITH TROLLEY</p> <ul style="list-style-type: none"> • Simultaneous acquisition of 12 channels, and LCD display. • Thermal recorder for printing out 12 channels simultaneously. • ECG Interpretation Software with over 200 findings for complete ECG Analysis reports with measurement data table should be provided. • AC as well battery operation. • Built-in AC interference, noise filter and baseline connection • Capability to transfer data on laser printer directly or through computer for printing on normal paper • Trolley 	8 Nos.
86.	<p>HOLTER MONITOR WITH 4 REC Computerized ambulatory (Holter) monitoring system 24 Hours recording.</p> <p>OPERATING FEATURES and CHARACTERISTICS: PC based unit with color monitor of 15", playback module, Key board and mouse and Laser Printer for printing reports Full disclosure reports Superimposition feature</p>	1 No.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
	<p>Analysis of ST slope, heart rate, R-R variability & arrhythmia Reports: in tabular and summary form., graphical and analytical, arrhythmia data and patient information: Heart rates (min., max, & avg.), R-R variability calculations, test duration, ventricular and supraventricular ectopics ST segment Reports: adjustable ST- segment criteria, time, duration, max deviation & slope, deviation severity index & number 2 channel simultaneous high resolution holter (solid state) recorder with event marker, time clock Number of Solid state Recorders: required quantity to be indicated below</p> <p>Quantity of recorders (12)</p> <p>PARAMETERS: 2 channel simultaneous ECG acquisition</p> <p>OPERATING REQUIREMENTS: Main unit : AC 220V / 50Hz; Recorders: Standard long life dry batteries UPS for main unit for at least 30-min</p>	
87.	<p>ETT MACHINE Computer based ETT System. Analysis of ST levels, ST slopes and ST-index etc. Report: 12 leads, rhythm and full disclosure arrhythmia, and exercise summary, trend. Holter and Stress test review. Display of 12 channels. Colour monitor of 15”. TREADMILL Programmable. Treadmill, medical grade, controllable from main unit. Speed adjustable from 0-15 km/h. Emergency stop button. Bearing capacity of minimum 180kg. Automatic Blood Pressure measurement. Automatic baseline drift control filter. Complete integrated full functional workstation.</p>	1 No.
88	<p>MONITOR ANAESTHESIA GAS Patient monitoring system for the OT</p> <ul style="list-style-type: none"> • The unit shall consist of the following components • A 12” or more colour display unit • The unit shall be "PC" compatible to allow peripheral and operational options. • User selectable formats according to procedural requirements and user preferences. 	9 Nos.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
	<ul style="list-style-type: none"> • The control shall be by the use of simple, functional zones & colour-coded wipe-down, tactile feedback keys. • Unit shall have alarms providing visual and audible warnings of alarms, faults and validation messages; all of which shall be individually selected. • Connections for a module enclosure, Nurse-call, 3 x RGB+S and Defibrillator <p>The unit shall included:</p> <ul style="list-style-type: none"> • Power cable • Operators manual • Module housing to hold parameter modules • 3m cabling for connection to module enclosure <p>The unit shall be supplied with the following modules</p> <p>ECG/RESPIRATION MODULE</p> <ul style="list-style-type: none"> • Plug-in module providing ECG + RESP from a 3-lead input • Display field: Traces: ECG (OR RESP), Cardiorespirogram. • Trends: HR + RESP rate • Derived data: HR, RESP rate • Alerts: Heart rate HIGH, LOW, • Asystole, Irreg., Apnoea, Apnoea rate, Apnoea count, Electrodes or lead fault. • Module shall be supplied with: • ECG Trunk cable • ECG/RESP 3-lead clip set <p>NON INVASIVE BLOOD PRESSURE MODULE</p> <ul style="list-style-type: none"> • Parameter: Non-invasive Blood Pressure and Pulse Rate. • Display Field: (2 zones). • Trends: SYST, DIAST & MEAN • Data SYST, DIAST, MEAN & PULSE • RATE with TIME of reading • Table: Latest 8 value sets. • Alerts : High and Low on SYST, DIAST & MEAN. Validation messages. • Module shall be supplied the following: • Arm cuff for all ages. • 3m hose. <p>CO2/N2O/ FIO2 MODULE</p> <ul style="list-style-type: none"> • Providing Monitoring of CO2, N2O and FIO2. • With Full Trends Display <p>PULSE OXIMETRY SPO2 MODULE</p> <ul style="list-style-type: none"> • Parameters : oxygen saturation and pulse rate from optical transducers. • Display field: (1 zone) • Traces: Pulse waveform and short-term saturation trends • Trends: Saturation and Pulse Rate • Data: % Saturation and Pulse Rate 	

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	<ul style="list-style-type: none"> • Alerts: HIGH and LOW on saturation. and rate, fault and Validation messages. • The module shall be supplied with the following: • SpO2 Finger Clip Sensor for adult, pediatric and neonates <p>DUAL TEMPERATURE MODULE</p> <ul style="list-style-type: none"> • Parameter: 2 x Temperature • Display field: • Trends: Temp1 + Temp2 • Data: Temp1, Temp2, Temperature difference • Alerts:high and low on Temp1 and Temp2, fault alert • The module shall be supplied with: • Temperature Sensor, Rectal, • Temperature Sensor, Skin <p>INVASIVE PRESSURE X 2 (MODULE SHALL BE TWO SINGLE UNITS)</p> <ul style="list-style-type: none"> • Shall display BP waveforms plus derived parameters, systolic, diastolic & mean pressure • Shall be isolated against defibrillator and electrosurgical interference • The module shall have alarm facility for high and low settings for systolic, mean and faults • Adult and neonatal waveform display • To be supplied with all necessary cables, 2 x pressure transducers and pack of domes. • Shall be supplied with full and comprehensive Operators and Service Manuals <p>ANAESTHESIA GAS MODULE</p> <ul style="list-style-type: none"> • Anesthesia gas monitoring for Halothane, Enflorane, Isoflorane <p>ETCO2 Module</p>	
89	<p>MONITOR MULTIPARAMETER CCU Patient monitoring system for the Intensive Care Unit</p> <ul style="list-style-type: none"> • The unit shall consist of the following components • A 12" or more colour display unit • The unit shall be "PC" compatible to allow peripheral and operational options. • User selectable formats according to procedural requirements and user preferences. • The control shall be by the use of simple, functional zones & colour-coded wipe-down, tactile feedback keys. • Unit shall have alarms providing visual and audible warnings of alarms, faults and validation messages; all of which shall be individually selected. • Connections for a module enclosure, Nurse-call, 3 x RGB+S and Defibrillator <p>The unit shall included:</p> <ul style="list-style-type: none"> • Power cable 	20 Nos.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
	<ul style="list-style-type: none"> • Operators manual • Module housing to hold parameter modules • 3m cabling for connection to module enclosure <p>The unit shall be supplied with the following modules</p> <p>ECG/RESPIRATION MODULE</p> <ul style="list-style-type: none"> • Plug-in module providing ECG + RESP from a 3-lead input • Display field: Traces: ECG (OR RESP), Cardiorespirogram. • Trends: HR + RESP rate • Derived data: HR, RESP rate • Alerts: Heart rate HIGH, LOW, • Asystole, Irreg., Apnoea, Apnoea rate, Apnoea count, Electrodes or lead fault. • Module shall be supplied with: • ECG Trunk cable • ECG/RESP 3-lead clip set <p>NON INVASIVE BLOOD PRESSURE MODULE</p> <ul style="list-style-type: none"> • Parameter: Non-invasive Blood Pressure and Pulse Rate. • Display Field: (2 zones). • Trends: SYST, DIAST & MEAN • Data SYST, DIAST, MEAN & PULSE • RATE with TIME of reading • Table: Latest 8 value sets. • Alerts : High and Low on SYST, DIAST & MEAN. Validation messages. • Module shall be supplied the following: • Arm cuff for all ages. • 3m hose. <p>CO2/N2O/ FIO2 MODULE</p> <ul style="list-style-type: none"> • Providing Monitoring of CO2, N2O and FIO2. • With Full Trends Display <p>PULSE OXIMETRY SPO2 MODULE</p> <ul style="list-style-type: none"> • Parameters : oxygen saturation and pulse rate from optical transducers. • Display field: (1 zone) • Traces: Pulse waveform and short-term saturation trends • Trends: Saturation and Pulse Rate • Data: % Saturation and Pulse Rate • Alerts: HIGH and LOW on saturation. and rate, fault and Validation messages. • The module shall be supplied with the following: • SpO2 Finger Clip Sensor for adult, pediatric and neonates <p>DUAL TEMPERATURE MODULE</p> <ul style="list-style-type: none"> • Parameter: 2 x Temperature • Display field: • Trends: Temp1 + Temp2 • Data: Temp1, Temp2, Temperature difference 	

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
	<ul style="list-style-type: none"> • Alerts:high and low on Temp1 and Temp2, fault alert • The module shall be supplied with: • Temperature Sensor, Rectal, • Temperature Sensor, Skin <p>INVASIVE PRESSURE X 2 (MODULE SHALL BE TWO SINGLE UNITS)</p> <ul style="list-style-type: none"> • Shall display BP waveforms plus derived parameters, systolic, diastolic & mean pressure • Shall be isolated against defibrillator and electrosurgical interference • The module shall have alarm facility for high and low settings for systolic, mean and faults • Adult and neonatal waveform display • To be supplied with all necessary cables, 2 x pressure transducers and pack of domes. • Shall be supplied with full and comprehensive Operators and Service Manuals • Cardiac Output Module 	
90.	<p>MONITOR MULTIPARAMETER ICU Patient monitoring system for the Intensive Care Unit</p> <ul style="list-style-type: none"> • The unit shall consist of the following components • A 10" colour display unit • The unit shall be "PC" compatible to allow peripheral and operational options. • User selectable formats according to procedural requirements and user preferences. • The control shall be by the use of simple, functional zones & colour-coded wipe-down, tactile feedback keys. • Unit shall have alarms providing visual and audible warnings of alarms, faults and validation messages; all of which shall be individually selected. • Connections for a module enclosure, Nurse-call, 3 x RGB+S and Defibrillator <p>The unit shall included:</p> <ul style="list-style-type: none"> • Power cable • Operators manual • Module housing to hold parameter modules • 3m cabling for connection to module enclosure <p>The unit shall be supplied with the following modules</p> <p>ECG/RESPIRATION MODULE</p> <ul style="list-style-type: none"> • Plug-in module providing ECG + RESP from a 3-lead input • Display field: Traces: ECG (OR RESP), Cardiorespirogram. • Trends: HR + RESP rate • Derived data: HR, RESP rate • Alerts: Heart rate HIGH, LOW, 	60 Nos.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
	<ul style="list-style-type: none"> • Asystole, Irreg., Apnoea, Apnoea rate, Apnoea count, Electrodes or lead fault. • Module shall be supplied with: • ECG Trunk cable • ECG/RESP 3-lead clip set <p>NON INVASIVE BLOOD PRESSURE MODULE</p> <ul style="list-style-type: none"> • Parameter: Non-invasive Blood Pressure and Pulse Rate. • Display Field: (2 zones). • Trends: SYST, DIAST & MEAN • Data SYST, DIAST, MEAN & PULSE • RATE with TIME of reading • Table: Latest 8 value sets. • Alerts : High and Low on SYST, DIAST & MEAN. Validation messages. • Module shall be supplied the following: • Arm cuff for all ages. • 3m hose. <p>CO2/N2O/ FIO2 MODULE</p> <ul style="list-style-type: none"> • Providing Monitoring of CO2, N2O and FIO2. • With Full Trends Display <p>PULSE OXIMETRY SPO2 MODULE</p> <ul style="list-style-type: none"> • Parameters : oxygen saturation and pulse rate from optical transducers. • Display field: (1 zone) • Traces: Pulse waveform and short-term saturation trends • Trends: Saturation and Pulse Rate • Data: % Saturation and Pulse Rate • Alerts: HIGH and LOW on saturation. and rate, fault and Validation messages. • The module shall be supplied with the following: • SpO2 Finger Clip Sensor for adult, pediatric and neonates <p>DUAL TEMPERATURE MODULE</p> <ul style="list-style-type: none"> • Parameter: 2 x Temperature • Display field: • Trends: Temp1 + Temp2 • Data: Temp1, Temp2, Temperature difference • Alerts:high and low on Temp1 and Temp2, fault alert • The module shall be supplied with: • Temperature Sensor, Rectal, • Temperature Sensor, Skin <p>INVASIVE PRESSURE X 2 (MODULE SHALL BE TWO SINGLE UNITS)</p> <ul style="list-style-type: none"> • Shall display BP waveforms plus derived parameters, systolic, diastolic & mean pressure • Shall be isolated against defibrillator and electrosurgical interference • The module shall have alarm facility for high and low settings for 	

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	systolic, mean and faults <ul style="list-style-type: none"> • Adult and neonatal waveform display • To be supplied with all necessary cables, 2 x pressure transducers and pack of domes. • Shall be supplied with full and comprehensive Operators and Service Manuals 	
91.	MONITOR VITAL SIGN The unit shall be a portable bedside monitor with colour display providing E.C.G. Respiration Non Invasive Blood Pressure, Pulse Oximetry, Temperature The unit shall be supplied with the following accessories: <ul style="list-style-type: none"> • ECG Trunk Cable • ECG 3 lead clip end • NIBP cuff • NIBP tubing set • SpO2 Finger Clip Sensor • Adult to Neonatal Accessories • Printer 	20 Nos.
	OPERATION THEATER	
92.	CLOCK ELAPSED TIME For OT	10 Nos.
93.	DIATHERMY UNIT MONO & BIPOLAR Microprocessor based electrosurgical unit for normal and under water cutting usages. Automatic self test function. Operation in Radio Frequency range. Controls for cutting, mono/bipolar coagulation, spray and blends. Mono polar cutting power of 300 watts. Mono polar coagulation power of 100 Watts. Bipolar coagulation power of 50 Watts. Spray coagulation mode. Floating output with bipolar coagulation. Different gradations of blending of cutting and coagulation power. Digital display of all controls and set values of cutting and coagulation power. Audio and visual alarms on fault occurrence. Earth free patient circuit. Reusable Silicon patient plate. Double paddle foot switch, explosion proof. Monopolar handle with cord. Bipolar forceps with cord. Trolley with two shelves having 125mm anti static lockable wheels. 220V, 50 Hz. Accessories/ electrodes: Attachment for Monopolar Coagulation (one set). Handle with 2 Activating Buttons	10 Nos.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
	Knife Electrode, 25mm Long Surgical Electrode, Ball-Shaped, 4mm Dia Wire Loop Electrode, 10mm Dia Needle Electrode, Str. Isolated, 125 mm Ball Electrode, 5mm Dia Needle Electrode, 100mm Bipol. Cable for Forceps with Flat Socket Bipolar Coagulation Forceps, 220mm	
94.	FIBRILATOR Mode of operation continuous Rated out put Fully variable 10 Volt,50Hz ,0.10 mA Fuses T 160 ma Permissible operating temperature range +10°c tc+40°c ELECTRODES Fibrillator electrodes with double side electrode Fibrillator with bulldog clip and single plate electrodes Fibrillator Electrodes with two bulldog clips. Complete with Alligator Clamp.	2 Nos.
95.	HEARTLUNG MACHINE Heart lung machine, with central Monitor/Workstation for control, operating and monitoring for 5 DC servo motor driven pumps. The system should have pediatric and adult pumps (For adult and pediatric perfusion) for arterial and vent with precise variable speed control and adjustable pumps head of occlusion to accommodate various tubing sizes, speed of pumps through digital readout, mounted on mobile cart, with oxygenator mounts, temperature module and probes, with provision to drive the pumps head manually in case of power interruption in emergency with low lever and bubble detector alarms. Sensors for temperature, pressure and Air Bubbles. Battery back up for monitoring. Battery back up for pumps. Provision for connection to a PC. Air-Oxygen mixture (Blender). Mains 230 V, 50 Hz, AC, 1 phase operation. On-line arterial and venous PO2 and temperature monitoring.	2 Nos.
96.	HYPOHYPERThERMIA UNIT The Hyper hypothermia unit designed to supply temperature controlled water to oxygenator heat exchangers and cooling blankets. The feed water temperature selected on a temperature controller in the range 5-40 °C .One/ Two external circuits can be connected each with its own flow control. The flow is maintained b a built in pump. The temperature control is obtained by a three way motor valve, selecting water from a cooling or a heating vessel as required, in the cooling vessel a temperature of +2 °C is constantly maintained by a refrigeration system. Heating vessel contains an electrical heater which is automatically switched, as and when required. Hermaticall sealed compressor ½ HP. Temperature accuracy: +/-0.5 deg/ C. Initial cooling capacity 2100 kj/h (500 Kcal/h)	2 Nos.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
	Continuous cooling cap 2800 kj/h (670 Kcal/h) Circulating system: Centrifugal pump. Flow capacity (Total) 10-16 liters/min FIVE blankets with each Hypothermia machine.	
97.	INFUSOR PRESSURE Pneumatic	10 Nos.
98.	LAMP OPERATING MAJOR WITH CAMERA Lighting detail: Type of light source LED type Average bulb life 30,000 hours Light intensity 160,000 lux @ 1 metre Field size 200mm - 355mm Depth of focus 850mm Focused range electronic control 700 - 1,600mm Focus control via sterilised handle Colour temperature 4,3000 k Colour rend. Index 93 minimum Temp increase in light field less than 100c Temp increase below light 10cm less than 20 c Brightness control digital control of illumination. Mechanical detail: Full roatations of movement 360deg Removable steri- isable handles sterilisable at 1340c Satellite light : Type of light source LED Average bulb life 30,000 hours Light intensity 100,000 lux @ 1 metre Field size 180mm - 300mm Depth of focus 850mm Focused range electronic control 700 - 1,600mm Focus control via sterilised handle Colour temperature 4,3000 k Colour rend. Index 93 minimum Temp increase in light less than100c at max field Temp increase 10cm less than 20c below light Brightness control digital control of illumination. Satellite rotates 360deg around main lamp Removable ster- sterilisable at 1340c	9 Nos.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
	Operating voltages 220v, 50 Hz.	
99.	OPERATING MICROSCOPE Operating Microscope for multipurpose use including, ENT, EYE, Neurosurgery and Vascular Surgery. System quoted shall be modular with attachments for different procedures and relevant accessories / attachments shall be quoted	3 Nos.
100.	PRISM LOUPE OPERATING <ul style="list-style-type: none"> • Operating prism loupes to be supplied on a spectacle frame. • The frames to be supplied in three sizes with five available nose bridges to allow maximum comfort and security for the surgeon. • To be supplied with 2.4X Galilean (60.0 mm Field), 4X Galilean (25.9 mm Field), 3X Panoramic (62.0 mm Field), 4X Panoramic (45.0 mm Field), 6X Panoramic (37.0 mm Field) magnification loupes. • To be easily identifiable by colour coding and simple to clip on when needed. • To have a pocket size halogen light source with rheostat brightness control and a compatible plug in charger to guarantee illumination with all panoramic loupes. 	10 Nos.
101.	SURGICAL PENDANT Single Arm and two to three shelves 16 Electrical Outlets 10 Gas Outlets Scavenging outlet Tool Air Outlet	9 Nos.
102.	TABLE OPERATING 5 SECT + MATRESS Pedestal Type Major Operating Table With 5 Sections. Table Is Mounted On A Solid Base With Casters And Locks. Table Top Surface Is Fabricated From Radio-Translucent, Conductive Panels And The Larger Table Sections Are Equipped With Radiographic Cassette Tunnels. Table Includes Electro-Hydraulic Controls, Side Rail Locking System, Kidney Elevator, Grounding Receptacle And Dual Arm Support Section. Designed For Use In The Operating Room In A Variety Of Surgical Procedures. All options shall be quoted for selection including Orthopaedic attachments Complete with Pads and Clamps and Standard Accessories	9 Nos.
	RADIOLOGY	
103.	C-ARM 9 " A Mobile C-Arm Image Intensifier suitable for use in Operation Theatres for Surgical procedures. The Control Panel should be fully feather touch for easy	1 No.

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	<p>cleaning and disinfections.</p> <p>A) <u>IMAGE INTENSIFIER:</u></p> <ul style="list-style-type: none"> ○ Image Intensifying Tube : 9 Inches, Triple Field. ○ CCD Camera : High Resolution Compact CCD Camera. B/W, Pixels 752 X 582. ○ Monitor (2 Nos.) : 15" or 17" Monitor along with trolley. <p>B) <u>C-ARM MOVEMENTS:</u></p> <ul style="list-style-type: none"> ❖ Rotation : $\pm 180^\circ$. ❖ Motorized Up/Down : 430 mm ❖ Horizontal Travel : 220 mm ❖ Arc Orbital Movement : 125°. ❖ Wig Wag : $\pm 12.5^\circ$. <p>C) <u>X-RAY GENERATOR:</u></p> <p>High Frequency (40 KHz) with Max. Output power 6 KW and Rotating Anode Tube of focal spot 0.3mm (small) & 0.6mm (Large) to be provided.</p> <p>D) <u>CONTROL:</u></p> <ul style="list-style-type: none"> i. LCD display of kV & mA range) ii. Technic Selector switch for Fluoro & Rad. Mode Selection. iii. KV Selection from 40 to 120 KY in steps. iv. An inbuilt Radiographic Timer to select mAs in steps for more than 240mAs. v. A 5 minutes cumulative Timer with Buzzer. vi. Fluoro mA from 0.1-3 mA, continuously variable. vii. Indicators for left/right, up/down Image Rotation should be provided on Control Panel. viii. Thermal Safety cut off'. ix. The unit should be operable on Single Phase 230 Y $\pm 10\%$ AC, 50 Hz 	

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	<ul style="list-style-type: none"> x. Automatic Brightness Stabilizer should be provided. xi. Provision must exist on Control Panel for easy identification of faults, to minimize the downtime. xii. Iris Collimator should be provided. xiii. High Definition mode upto 7.5 mA should be available xiv. Emergency fluoroscopy must be provided xv. Anatomical Programmed should be provided in radiography mode xvi. Emergency stop of mains supply should be provided <p>E) <u>DIGITAL IMAGE MEMORY SYSTEMS</u></p> <p>100 Frame Storage Memory with last image hold, Recursive filter, Pulsed fluoroscopy, Negative image & contrast enhancement. Should be operable from Memory Panel as well as Remote control. Facility to transfer and Store image in Pen Drive as well as through LAN Port should be available. Should display Date and Time.</p>	
104	<p>GAMMA CAMERA with HOTLAB</p> <ul style="list-style-type: none"> 1.1 Two rectangular (> 36 cm x 20 cm FOV) high resolution digital detectors fixed at 90 degrees to each other. 1.2 > 8.5 mm thick NaI crystal 1.3 .PMTs: > 24 PMT tubes per detector 1.4 Static, dynamic, planar, SPECT and gated SPECT capability. 1.5 Microprocessor controlled energy, linearity and uniformity corrections. 1.6 Automated PMT gain stabilization for extended image uniformity 1.7 Intrinsic energy resolution for 99mTc < 9.7% 1.8 Intrinsic spatial resolution: < 3.9 mm at FWHM in UFOV, < 7.6 mm at FWTM in UFOV 1.9 PHA windows: > 3 for simultaneous imaging 1.10 Energy range 60-170 Kev 1.11 Monitor for gantry position and image display <p>2 Collimators</p> <ul style="list-style-type: none"> 2.1 Low energy general all purpose (2) 2.2 Low energy high resolution (2) 2.3 Collimator Storer and Collimator Server <p>3 Table/ Chair</p> <ul style="list-style-type: none"> 3.1 Low attenuating material 3.2 Maximum patient weight capacity > 300 lb. <p>4 Acquisition Console</p> <ul style="list-style-type: none"> 4.1 Computer for cardiac planar, SPECT, gated, static and dynamic 	1 No.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
	<p>acquisitions.</p> <p>4.2 Ability to perform gated studies in “list mode” / “frame mode”</p> <p>4.3 Factory protocols for all type of cardiac and non cardiac studies.</p> <p>4.4 Ability to make user defined protocols and edit factory protocols and acquisition parameters</p> <p>4.5 SPECT acquisition: 64x64, 128x128 word matrix, step and shoot / continuous acquisitions over 180 and 360 degrees</p> <p>5 Gating Device</p> <p>5.1 Gating device with patient leads and camera connection for gated planar and SPECT studies.</p> <p>6 Processing Workstation (2)</p> <p>6.1 64 Bit RISC (700 MHz or higher) / Intel Pentium 4/ Intel XEON processor (3 GHz or higher)</p> <p>6.2 SCSI/ Serial ATA Hard Disk: > 80 GB</p> <p>6.3 1 GB RAM</p> <p>6.4 DVD RW/CD-RW drive</p> <p>6.5 Interface for gamma camera / acquisition computer</p> <p>6.6 10/100/1000 Base T Ethernet card</p> <p>6.7 56 K Fax modem</p> <p>6.8 128 MB graphic card</p> <p>6.9 18 inches flat TFT monitor (1280 x 1024 res.)</p> <p>6.10 Desktop for workstation</p> <p>7 Software</p> <p>7.1 UNIX/ LINUX/ Windows NT/ Windows XP/Solaris operating system</p> <p>7.2 TCP/IP, NFS, FTP software for communication with networked (LAN, WAN) computers.</p> <p>7.3 Patient database management software</p> <p>7.4 Programming tools for making acquisition, processing and display protocols</p> <p>7.5 DICOM 3 convert, DICOM transfer (import, export) and DICOM print software</p> <p>7.6 Postscript printer driver for networked printers (Codonics, Tektronix, HP, Lexmark)</p> <p>7.7 Software for converting and exporting images in common PC formats e. g. GIF, TIFF, JPEG, BMP, AVI.</p> <p>7.8 Quality control software for uniformity, center of rotation, spatial resolution, and linearity correction complying with NEMA</p> <p>7.9 Image Algebra tools</p> <p>7.10 Tools for filter back projection reconstruction and reformatting</p> <p>7.11 Iterative reconstruction software supporting OSEM, MLEM methods</p> <p>7.12 Choice of filters for 2D and 3D filtering</p> <p>7.13 Motion correction software</p> <p>7.14 Cine and 3 D display software</p> <p>7.15 Image analysis tools</p>	

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	7.16 mage and count manipulation tools 7.17 Tools for Scatter Correction 7.18 Standard software for Gated and non-gated Myocardial Perfusion SPECT 7.19 Standard software for gated blood pool and first pass study for assessment of RV / LV function 7.20 Software for cardiac shunt analysis 7.21 Emory Cardiac Toolbox / Michigan University 4D MSPECT with 5 normal databases. 7.22 Cedars-Sinai Autoquant Plus (QGS+QPS+QBS) software.	
	8 Imager 8.1 Codonics Horizon SF dye diffusion and direct thermal printer 8.2 320 dpi, 12 bit gray scale, 16.7 million colors 8.3 Media: 8x10 Film; A, A4 Gray scale paper; A, A4 color paper; A, A4 color Film 8.4 10/100 Base T Ethernet Card, 256 MB RAM, 10 GB HD and 100MB Zip Disk 8.5 DICOM, PostScript printing 8.6 100 sheets of ChromaVista color paper with ink sheet 8.7 100 sheets of DV film, DV film tray 8.8 Printer drivers 8.9 Network cable	
	9 OPTIONAL ITEMS 9.1 UPS: 10 KVA Online uninterrupted power supply (Sine wave) for gamma camera, workstations and printers. Minimum backup time = 30 minutes	
	10 Quality Assurance Tools 10.1 Rectangular flood source holder 10.2 Rectangular refillable flood source (detector head size) 10.3 SPECT phantom holder 10.4 SPECT phantom 10.5 IRC source holder 10.6 Bar Phantom (detector head size) 10.7 Rectangular Cobalt 57 flood Source (740 MBq) (detector head size) 10.8 Cobalt 57 disc sources (100 uCi) for COR / IRC correction 10.9 Cobalt 57 Pen point Marker (100 uCi)	
	11 MOD/ EOD/ DV D Writer for data archive	
	12 Color Laser Printer (HP, Lexmark, Xerox) 12.1 Up to 20 pages per minute black and color printing 12.2 4800 Image quality 12.3 160 MB RAM	

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	12.43 paper trays 12.5 PostScript printer drivers for UNIX, LINUX, Windows and MAC 12.6 10/100 Base T Network Card with network cable	
	13 B & W Laser Network Printer (HP, Lexmark, Xerox) 13.1 Up to 24 pages per minute 600 x 600 black & white printing 13.2 128 MB RAM 13.3 2 paper trays 13.4 PostScript printer drivers for UNIX, LINUX, Windows and MAC 13.5 10/100 Base T Network Card with network cable	
	14 Dose Calibrator / Gamma Well Counter 14.1 Console (9 pre-defined isotopes and 5 user defined) 14.2 Ionizing chamber with shielding (1/8 inches) 14.3 Well counter thin wall, deep well, high pressure Argon gas 14.4 Max. Activity = 240 GBq 14.5 Well Detector: Drilled NaI crystal detector, Max count rate 60,000 cps 14.6 Serial port with software 14.7 Auxiliary display with cable 14.8 Data printer 14.9 Ticket Printer	
	15 Survey Meters 15.1 Portable Survey Meter with external GM probe (0-20 mR/h) 15.2 Portable Survey Meter with external GM probe (0-200 mR/h)	
	16 L Shield 16.1 18.5" w x 17.25" d x 26" h 16.2 1/4" Lead Glass 16.3 1/4" Lead shielding	
	17 Lead Bins 17.1 Foot operated waste bins 17.2 1/4" thick lead lining	
	18 Syringe Shields Tungsten (2 mm) Syringe shields with lead glass window and safety lock 18.1 For 3CC Syringes 18.2 For 5CC Syringes 18.3 For 10CC Syringes	
	19 Transporter Shielded Syringe Carrier 19.1 1/8 inch lead lined. Size 7x3x3 inches	

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
	<p>20 Lead Goggles 20.1Lead Equivalent: 0.75mm front; 0.75mm side</p> <p>21 Lead Gloves 21.1Flexible vinyl cover 21.20.5mm Lead protection 21.315" length</p> <p>22 Lead Lined MIBI Boiling Apparatus 22.1Automatic boiling apparatus 22.2¼ inches thick lead casing</p> <p>23 Lead Aprons 23.10.5" front, 0.3" back lead wrap around aprons</p> <p>24 Injection stand with Instruments Tray 24.1Chrome Plated Steel with Adjustable Height (30-45 inches)</p> <p>25 Lead Lined Safe for storage of sealed sources: 25.1Dimensions: 17.4" w x 17" depth x 19" h (44.2 x 43.2 x 48.3cm) 25.2I.D.: 12" w x 12" depth x 12" h (30.5 x 30.5 x 30.5 cm) 25.3Lead Shielding: 2" thick (5 cm) 25.4Finish: Powder coat 25.5 Door: Key-locked</p> <p>26 Lead Castle U shaped: 26.125mm lead protection</p> <p>27 Lead Lined Phantom Cabinet for storage of Flood Sources 27.1Dimensions: 8.2" w x 25.6" depth x 34.2" h (11.6x 25.1x 36 cm) 27.2Lead Shielding: .25" thick (.64 cm) 27.3Door: Key-locked 27.4Countertop: Stainless steel with 4" backsplash and .5" spill proof lip 27.5Finish: Powder coat</p> <p>28 Stainless Steel Top Table: 75x75x45 cm</p> <p>29 Treadmill: 29.1Complete Stress test system as per approved SPECs</p> <p>30 Bicycle Ergometer: 30.1Maximum Energy upto 400 Watts 30.2Programmable protocols with 5-50 Watts increments</p> <p>31 Three Channels ECG machine: 31.1As per approved SPECs</p>	

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
	<p>32 Volumetric Infusion Pump: 32.1 Battery Powered 32.2 Flow rate: 1-999.9 ml/hour 32.3 100 compatible infusion sets</p> <p>33 Cardiac Defibrillator with monitor and ECG recorder: 33.1 As per approved SPECS</p> <p>34 Transcription System 34.1 Desk set with head phone and foot pedals 34.2 Digital Hand Recorder</p> <p>35 Power Requirements: 35.1 Complete electrification work and earthing of equipment. 35.2 All equipment for 220 V 50 Hz power supply</p> <p>36 Documentation 36.1 All English user manuals (Soft and Hard Copies) 36.2 All English service manuals (Hard Copies)</p> <p>37 Upgrades/ Bug Fixes 37.1 Free upgrades and bug fixes in warranty and maintenance contract period. 37.2 The manufacturer will guaranty the availability of all parts for ten years after installation.</p> <ul style="list-style-type: none"> • Network switches (Giga bit) • Isolator for radioisotopes (amercare) • Aluminum Breakthrough Kit • Cardiac Phantom • QC Kit for dose calibrator • Lead lined ventilation apparatus with 100 mobilizing sets • Radioactive decontamination kit • Desktop PCs with licensed Window, MS Office and antivirus software • Sharps container shield • Mobile radiation shield • Fridge for cold kits • Fire extinguisher. • Digital personal radiation monitors • Patient screen • DVDs for data archiving • External Hard Disks for data archiving (1 TB). <p>Note: Complete system with all equipment of hot lab.</p>	

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105.	ILLUMINATOR X-RAY With Dimmer For two films	10 Nos.
106.	MOBILE X-RAY 300 MA 300ma Inverter Type Mobile X-Ray Unit. <u>X-Ray Generator:</u> Kv Range: 40kv To 125kv In 2kv Steps. Mas Range: 0.5mas To 100mas. Ma Range: Max. 300 Ma <u>X-Ray Tube Unit:</u> Focus Size: 1.0 Mm Target Angle: 14 ⁰ <u>X-Ray Beam Limiting Device:</u> Projector Lamp: Halogen Filtration: 1.2mm Al. Eq. (Total Filtration Min. 2.5mm Al. Eq.). <u>Movement Range Of X-Ray Tube (Center Of X-Ray Tube):</u> Vertical: 47cm To 205cm From Floor To Focus.(Approx) Horizontal: Max. 115cm Lateral Pivoting Of X-Ray Tube: ±90 ⁰ Rotating Column: 360 ⁰ Longitudinal Pivoting Of X-Ray Tube: 90 ⁰ Forward, 15 ⁰ Backward Horizontal Rotation Of Arm: ±45 ⁰ <u>Cassette Box:</u> For Storage Of At Least 8 Cassettes	2 Nos.
OPHTHALMOLOGY		
107.	PHACO MACHINE Consisting of: <ul style="list-style-type: none"> • Castroviejo Caliper • Air injection cannula • Kellan hydrodissection cannula • Nichamin hydrodissection cannula • Baby Jones towel clamp • Bishop - Harmon tissue forceps • Blaydes lens holding forceps • Castroviejo suturing forceps, 0.12mm teeth • Colibri corneal utility forceps • Dieffenbach serrefine 	1 No.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
	<ul style="list-style-type: none"> • Dodick nucleus cracker • Faulkner lens folding forceps • Faulkner lens holding forceps • Halstead mosquito forceps • Hartman mosquito forceps • Tennant tying forceps • Tennant tying forceps • Toutman superior rectus forceps • Utrata capsulorhexis forceps • Kuglen iris hook and lens manipulator, cloverleaf tip • Sinsky hook II • Castroviejo needle holder, delicate • OCUTEK micropint needle holder • Bechert nucleus rotator • Koch stop and chiop manipulator • Fine-thornton swivel fixation ring, 13mm • Fine-thornton swivel fixation ring, 16mm • Castroviejo micro corneal scissors • Gills - welsh capsulotomy scissors • Westcott stitch scissors • Westcott tenotomy scissors • Kratz capsule scraper • Castroviejo double ended synechia spatula • Kratz-Barraquer Eye speculum, adult • Kartz-Barraquer Eye speculum, pediatric • Instrument tray, large 	
108.	<p>AB SCAN A SCAN BIOMETER Soft-Touch probe assures low pressure hand-held contact reducing the need for chin rest and reclined immersion measurements.</p> <p>Probes 10MHz, focused, internal fixation; solid tip, Soft-Touch, or immersion</p> <p>Formulas Choice of 3 from Holladay, Regression II, Theoretic / T, Binkhorst and Hoffer-Q</p> <p>Modes Automatic, Manual and Diagnostic; Cataract, Dense Cataract, Aphakic, Pseudophakic</p> <p>Measure ACD, Lens, Vitreous and Axial Length</p> <p>Review Stored A-scan patterns, A-scan measurements and statistics</p> <p>Statistics Average, Standard Deviation, Range, and Maximum Difference from average</p> <p>Calculations</p>	1 No.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
	<p>2 tables of 9 operator selected IOL powers vs. refraction. Personalized A-constants and Surgeon Factors</p> <p>Displays Multiple screens available for tabled, summarized and compared calculations</p> <p>Memory Stores 5 scans and measurements, selected formula, IOL constants and users name</p> <p>Accuracy Electronic $\pm 0.0375\text{mm}$ Clinical $\pm 0.1\text{mm}$</p> <p>Range Automatic Mode 18 to 33mm Manual Mode 0.5 to 35mm</p> <p>Calibration Automatic with built-in calibration cylinder</p> <p>Report data Patients Name, ID, Eye examined, K-readings, Users Name, Date and Time</p> <p>A-Scan options • Immersion capability • Alphanumeric keyboard controller • Soft-Touch A-scan probe • Adjustable tilt handle</p> <p>Unit 2 Portability B-scans including electronic measurement capabilities for area and distance to an accuracy of 0.12mm. Sealed, oil-filled B-scan probe provides smooth scanning.</p> <p>Features</p> <p>Probe 10MHz. focused, 30 frames per sec., 128 lines, (256 interpolated)</p> <p>Measurements Distance: Axial 0.12mm., Lateral 0.24mm</p> <p>Area 0.12mm²</p> <p>Amplifiers Logarithmic, Linear, and S-Curve</p> <p>Magnification Continuous Zoom, and Pan, joy stick controlled from 0.5X to 2.0X</p> <p>Resolution 1024 x 480 pixels, with optimal tissue resolution of 0.15mm axial and 0.3mm lateral</p> <p>Processing Reject below level, saturate above or selected level, enhance contour and texture, and smooth image</p> <p>Memory Dual for real-time and processed image</p> <p>Freeze Foot pedal or control panel activated</p> <p>Image B-scan with simultaneous selectable vector A-scan</p> <p>Gray scale</p>	

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
	128 levels Display 60° sector fan, Gray Scale, B/a presentation (B emphasized) or A/b (A emphasized), Gain, Electronic Scale, TVG, Amplifier, OD/OS, Velocity, Probe Orientation, Patient Name, Date B-Scan options • Color coded image generation (RGB) • Mobile instrument cart w/ keyboard shelf • Adjustable tilt handle • Alphanumeric keyboard controller	
109.	OPHTHALMIC OPERATING CHAIR	2 Nos.
110.	AUTOCLAVE FOR INSTRUMENTS	1 No.
111.	AUTOCLAVE FOR INSTRUMENTS	1 No.
112.	MICRO SURGICAL CATRACT SET i. Corneal Forceps (Zomex) 10 Nos. ii. Suture Tying Forceps (Zomex) 10 Nos. iii. Macphurson Forceps (Zomex) 10 Nos. iv. Micro Needle Holder (Zomex) 10 Nos. v. Corneal Scissor (Zomex) 10 Nos. vi. Vanna Scissor (Zomex) 10 Nos. vii. Lens Dialor (Zomex) 10 Nos. viii. Wire Eye Speculum (Zomex) 10 Nos. ix. Simco Canula (Zomex) 10 Nos. x. Utrata Forceps (Zomex) 10 Nos. xi. Chopper (Zomex) 10 Nos. xii. Instrument Box (Frimen) 10 Nos. xiii. Lens Glide (Zomex) 05 Nos.	1 Set
113.	MICRO SURGICAL TRAB SET i. Artery Forceps (Zomex) ii. Coreal Forcep (Zomex) iii. Suture Tying Forcep (Zomex) iv. Tooth Forcep (Zomex) v. Silcock (4/0) Needle Holder (Zomex) vi. Micro Needle Holder (Zomex) vii. Corneal Scissor (Zomex) viii. VANNA Straight (Zomex) ix. VANNA Curved (Zomex) x. Conjectival Scissor (Zomex) xi. B. P. Handle (Zomex) xii. Adjustable Eye Speculum (Zomex) xiii. Trabeculectomy Punch (Titanium Frimen) xiv. Instrument Box (FFrimen)	1 Set
114	INSTRUMENTS TROLLEY	2 Nos.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
DENTAL SECTION		
115	<p>PANORAMIC DENTAL X-RAY Panoramic Dental X-Ray Up-gradable to 3D With two dedicated sensors Movement Technology Multi-motor with digital trajectory Patient Alignment Through Two Laser pointers to locate Reference plane: mid-sagittal, Frankfurt Standard Examination Programs Adult Panoramic/Ceph Child Panoramic/Ceph TMJ Open/Close mouth Maxillary Sinus P-A Corpus view Adult half-panoramic (right and left) Child half-panoramic (right and left) Improved orthogonality dentition: panoramic projection limited to the dentition obtained Frontal dentition: Low dose panoramic: panoramic with reduced angle of rotation to exclude the ascending ramus from the image. “IMPLANT “ Package – Linear tomography for implantology Software: System to be supplied with a Software for image acquisition, storage and Processing with following functions. - Image contrast adjustment - Image brightness adjustment - Gamma factor adjustment - Filter for edge enhancement, with possibility to adjust the filter level - Gray scale equalization to improve the image definition - Hi contrast - Embossed view - 3-D view - Image rotation (90° and 180°) - Image horizontal inversion - Pseudo-colors - Gray scale inversion (Negative/Positive) - Magnification (up to X32) - Distance measurement - Drawing and annotation</p> <p>Virtual Keyboard Availability of virtual keyboard console to reproduce image on the workstation/PC screen,</p>	1 No.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
	<p>to set the exposure parameters directly from PC. Use of the Virtual keyboard and of the on-board console is possible at the same time.</p> <p>Image Acquisition Direct acquisition through Ethernet connection Acquisition on USB peripheral</p> <p>Image Hardcopy. Images can be printed on any Window compatible Printer Images are printed with following parameters Patient data and examination date Exposure parameters</p> <p>DICOM CONNECTIVITY The system equipped with the “DICOM Gateway” and images can be printed on any Dicom 3 printer</p> <p><u>Technical Specification:</u> Exposure Time : PAN 7.3-13.8 sec Ceph: 4.5- 15 sec Image Area (approx.) : Pan: 14.6x30cm Ceph: 18x22, 24x22cm Image Transfer Ethernet, USB memory stick Sensor Technology : CCD with high resolution Cs-I (Cesium Iodide) Scintillator CCD Pixel Size : 48µm Effective Image resolution: 5.2lp/mm Image size : 1536x2800 (standard PAN) -3000x2305 (CEPH, max) Acquisition depth : 12 bit (4096 levels) DICOM connectivity (option); Print Store, Work list Generator : High Frequency 200kHz constant potential High Voltage : 60-86kV Current : 6-12mA Focal spot : 0.5IEC 336 Spine compensation : Automatic kV modulation Power Supply : 220-240V 50/60Hz Absorbed Current : 6.6A @ 220-240V</p> <p>DICOM PRINT</p>	
116	<p>COMPUTER AIDED DESIGN – COMPUTER AIDED MILLING FOR DENTAL PROSTHETIC (CAD CAM). Machine should be able to work on zirconia blocks and will specific NRC (Nano Resin Ceramic) block</p>	1 Set

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
	<p data-bbox="316 271 1026 304">A. <u>MILLING MACHINE</u> (01 Unit)</p> <p data-bbox="316 342 475 376">GENERAL</p> <p data-bbox="316 383 826 416">Fields of application: dental technology</p> <p data-bbox="316 421 1225 454">Machinable materials: plastics, zirconium oxide, nanocomposites, wax</p> <p data-bbox="316 492 555 526">BASIC SYSTEM</p> <p data-bbox="316 533 531 566">x/y/z positioning</p> <p data-bbox="316 571 675 604">Range: 100 x 100 x 40 mm</p> <p data-bbox="316 609 1257 676">Drives: precise ball screw spindles for the 3 linear axes with 4 mm lead · motor resolution < 1 µm · ground steel precision guide rails</p> <p data-bbox="316 680 770 714">Repetition accuracy: ± 0.005 mm</p> <p data-bbox="316 719 1321 786">Housing: complete encapsulation of working area with closable front cover · front lid switch (when opened, the machine switches into the halt mode)</p> <p data-bbox="316 824 539 857">ROTARY AXIS</p> <p data-bbox="316 864 1305 965">Rotary axis with highest true running accuracy for processing workpieces on their full circumference of 360 degrees · harmonic drive free from backlash with circular spline diameter 40 mm</p> <p data-bbox="316 969 1265 1037">Axis measurement: automatic measurement of rotary axis and automatic axis compensation for absolutely exact results</p> <p data-bbox="316 1041 1257 1108">Fixing device: integrated fixing device for round universal blanks with a thickness of 10 to 25 mm and a diameter of 98 mm</p> <p data-bbox="316 1146 547 1180">CONTROLLER</p> <p data-bbox="316 1187 1265 1332">Type CNC 300 · synchronic interpolation of 4 axes · great smoothness of running, powerful and accurate due to microstep operation · high processing speed due to exponential acceleration ramps · look-ahead feature for continuous velocity along the path</p> <p data-bbox="316 1370 459 1404">SPINDLE</p> <p data-bbox="316 1411 1297 1556">High frequency spindle SF 170 · nominal power under constant load (S1): 170 W · maximum power output (Pmax): 240 W · rotational speed range up to 60,000 RPM · collet chuck 3 mm · radial deviation at internal cone of the precision shaft < 1 µm</p> <p data-bbox="316 1561 1129 1594">Collect chuck: pneumatic for tools with 3 mm shank diameter</p> <p data-bbox="316 1632 627 1666">DUST EXTRACTION</p> <p data-bbox="316 1673 1305 1774">openings in the rear panel of the working area for dust extraction · connector for hose at the side of the housing · 24 Volt output for connecting the switching unit</p> <p data-bbox="316 1812 547 1845">ACCESSORIES</p> <p data-bbox="316 1852 1233 1919">Switching unit PSW 01 for automatically switching a vacuum cleaner · cabinet (W/D/H: 950 x 600 x 1.160 mm approx.)</p>	

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	<p>B. <u>FURNACE (01 Unit)</u></p> <p>Temperature in the firing chamber: 50 bis 1560 °C Lift position: 0 bis 9 --- open to closed Time: 1 bis 64000 --- s Acoustic signal: 1 bis 9 --- number of tones Temperature change rate: 1 bis 100 °C/min Time-controlled temperature change: 50 bis 1560 °C/time interval Time-controlled lift movement: 1 to 9 -- lift position/time interval Autodry: 50 bis 1000 °C</p> <p>C. <u>DIGITAL SCANNER FOR CAD CAM (03 Units)</u></p> <p>OPTICAL Light Source: laser, class 2, FCC registered Measuring cameras: 2 Video camera: 1</p> <p>MECHANICAL Number of axes: 5(X, Y, Z, Rx, Rz) Scanning volume: 140 X 140 X 140 (mm) With Full arch scans Output format: STL & supported partner formats Scannable materials: Plaster (all colors), Wax – up, Silicone & Alginates Accuracy : 15 um With Simultaneous Scan & Design With All Impression scans Multi-di mode: 30 Number of elements: With Articulator Scan Software Modules: i. Crown & Bridge ii. Implants custom abutments / bars iii. Partial frameworks iv. Virtual model builder v. CAM vi. Rapid-prototyping</p> <p>D. <u>DIGITAL SCANNING SOFTWARE (03 Units)</u></p> i. Multi-die scan ii. Advanced Full-Contour design. iii. Advanced flexibility in general design. iv. Advanced order management. v. Parallel design. vi. Multi-die scan. ¹ vii. Rescan options. viii. Full wax-up scanning	