

CATEGORY 01 - BIOCHEMISTRY LABORATORY

Item No.	Description of Goods or related services	Qty and unit
01	Auto Clave (Bench top)	02
02	Centrifuge Machine (15 mL and 50 mL Tubes)	01
03	Centrifuge Machine (<i>Eppendorf tubes</i>)	01
04	Micro Pipette Set	04
05	Gel Electrophoresis Apparatus	01
06	Centrifuge – Microhematocrit Centrifuge with Hematocrit Tubes	02

TECHNICAL SPECIFICATIONS

Item No.	Item Name	Listed Specification*
1	Autoclave (Bench top)	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i>
		The equipment shall be warranted for a period of not less than 24 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity.
		<ul style="list-style-type: none"> • It should be microprocessor controlled top loading autoclave for laboratory use such as glass ware, tools and media sterilization
		<ul style="list-style-type: none"> • Should be a floor standing top loading model
		<ul style="list-style-type: none"> • Effective internal capacity should be approximately 50 L
		<ul style="list-style-type: none"> • Operating temperature should be 105 ~ 132°C
		<ul style="list-style-type: none"> • There should be a heating facility approximately starting from 50 to 102°C
<ul style="list-style-type: none"> • It should have digital temperature display while pressure is displayed on pressure gauge 		
<ul style="list-style-type: none"> • The timer display should be digital and range is approximately 0 - 95hours for sterilization 		

		<ul style="list-style-type: none"> • It should consist of a Cooling fan permitting reduction of chamber cool down time on completion of the cycle. (Time saving facility)
		<ul style="list-style-type: none"> • The optimal sterilizing course should be able to select from among five courses, such as the liquid sterilizing course in addition to that for normal sterilization.
		<ul style="list-style-type: none"> • Variable temperature setting such as to 100°C as well as to 121°C should be possible. The temperature should be able to set within the range from 45°C to 135°C in steps of one degree (heating mode up to 104°C).
		<ul style="list-style-type: none"> • A function allowing the exhaust valve to open automatically after completion of sterilization should be provided
		<p>Following safety devices should be available</p> <ul style="list-style-type: none"> i) Water level sensor ii) Lid interlock iii) Over-heat prevention iv) Over pressure switch v) Safety relief value vi) Current leakage breaker
		<ul style="list-style-type: none"> • Power requirement should be 230V/50Hz
		<ul style="list-style-type: none"> • Power consumption should be not higher than 2100W
		<ul style="list-style-type: none"> • Two Stainless steel baskets should be provided
		<p>Documentation</p>
		<ul style="list-style-type: none"> • Manufacture product catalogs with requested information should be supplied
		<ul style="list-style-type: none"> • Manufacture authorization for the bidder to represent the given brand
		<ul style="list-style-type: none"> • User reference list should be attached

		<ul style="list-style-type: none"> • Bidder should have good aftersales facility with trained technicians and parts available locally to carry out any service/ repair immediately
02	Centrifuge Machine (15 mL and 50 mL tubes)	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i>
		The equipment shall be warranted for a period of not less than 24 calendar months from the date of successful commissioning on full "part &labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity
		<ul style="list-style-type: none"> • The centrifuge should be a bench top model which driven through a brushless induction motor that functions on the power supply of 230V ± 10%, 50Hz. • The unit should have a maximum capacity of not less than 400ml and should be supplied with swing out head with glass tubes to centrifuge at least 16 x 15 ml tubes in each load • The unit with above rotor should be capable of giving Relative Centrifugal Force (RCF) of not less than 3,400g at approximately 4,450rpm.

- Cost accessories to meet the following requirements shall be quoted separately.

Sample Capacity	Test tube quantity (not less than)	RPM (not less than)
5ml	16 Nos.	4,500
15ml	16 Nos.	4,450
50ml	4 Nos.	4,450
100ml	4 Nos.	3,900

- The unit should be a microprocessor controlled system with recall facility of last set parameters.
- There should be a 0-60 minute's digital countdown timer with alphanumeric LCD display.
- The unit should be equipped with safety lid interlock to prevent cover opening during centrifugation & imbalance detector with cutoff. It also should have dynamic brake for quick deceleration.
- The supplier should have at least 3years experience in maintaining such equipment preferably in government sector.
- The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part &labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity
- Maximum Speed should be above 13,000 RPM
- Maximum RCF value should be 17,000xg
- Instrument should Supplied with Rotor
- Acceleration and deceleration rates should be less than 9 sec for process more samples in less time
- Noise Level should be 56 dBA or less
- "Conforms to the latest clinical and safety standards,

		<ul style="list-style-type: none"> including In Vitro Diagnostics (IVD) compliance"
		<ul style="list-style-type: none"> Time set range 1 min - 99 min; 1 min increments + HOLD mode
		<ul style="list-style-type: none"> Intuitive controls with easy-to-read large LCD display for make set-up all parameters and operation easy
		<ul style="list-style-type: none"> 0.25/0.4 mL microliter tube adapters, pack of 24 should be supplied
		<ul style="list-style-type: none"> Documentation
		<ul style="list-style-type: none"> Manufacture product catalogs with requested information should be supplied
		<ul style="list-style-type: none"> Manufacture authorization for the bidder to represent the given brand
		<ul style="list-style-type: none"> User reference list should be attached
		<ul style="list-style-type: none"> Bidder should have good aftersales facility with trained technicians and parts available locally to carry out any service/ repair immediately
3	Centrifuge Machine (Eppendorf tubes)	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i>
		<p>The equipment shall be warranted for a period of not less than 24 calendar months from the date of successful commissioning on full "part &labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity</p>
<ul style="list-style-type: none"> The centrifuge should be a bench top model which driven through a brushless induction motor that functions on the power supply of 230V ± 10%, 50Hz. 		

		<ul style="list-style-type: none"> • The unit should be supplied with a suitable rotor head to centrifuge at least 24 eppendorf tubes of capacity 1.5ml. • The unit with above rotor should be capable of giving Relative Centrifugal Force (RCF) of not less than 12,000g at approximately 11,000rpm. • The unit should be a microprocessor controlled system with recall facility of last set parameters • There should be a 0-60 minute's digital countdown timer with alphanumeric LCD display. • The unit should be equipped with safety lid interlock to prevent cover opening during centrifugation & imbalance detector with cutoff. It also should have dynamic break for quick deceleration. • The unit shall supply with the suitable adaptors of 1ml & 0.4ml. • The supplier should have at least 3years experience in maintaining such equipment preferably in government sector. • The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part &labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity
04	Micro Pipette set	Brand Name <i>(Please specify)</i> Model <i>(Please specify)</i> Country of Origin <i>(Please specify)</i> Country of Manufacture <i>(Please specify)</i> Product Brochure <i>(Please specify)</i> Manufacture Authorization & ISO <i>(Please specify)</i>

		<p>Warranty <i>(Please specify)</i></p> <p>The equipment shall be warranted for a period of not less than 24 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity</p> <ul style="list-style-type: none"> • Pipette shall be fully autoclavable • Should have mechanism to reduce Repetitive strain injuries (RSIs) • Pipette shall have mechanism to obtain high level of Precision and Accuracy to obtain correct results. • Pipette shall have mechanism to prevent accidental changes in volume • Shall have Large Display for easy viewing of the set volume. • Pipette shall be UV resistant • Pipette should accept universal pipette tips. • Pipette shall have at least ISO 9001 & CE marked • Shall provide minimum of one-year warranty • There should be authorized local agent for the manufacture in Sri Lanka and shall provide letter of authorization with the tender/Quotation. • Local agent should have facility to calibrate the micropipette.
05	Gel Electrophoresis apparatus	<p>Brand Name <i>(Please specify)</i></p> <p>Model <i>(Please specify)</i></p> <p>Country of Origin <i>(Please specify)</i></p> <p>Country of Manufacture <i>(Please specify)</i></p> <p>Product Brochure <i>(Please specify)</i></p> <p>Manufacture Authorization & ISO <i>(Please specify)</i></p>

		<p>Warranty (<i>Please specify</i>)</p> <p>The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part &labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity</p> <hr/> <p>Gel Dimensions 10 x 10 cm</p> <ul style="list-style-type: none"> • The unit shall have a suitable power supply unit capable of supplying voltage up to 350V and 100mA for standard module and for ISO-focalization module voltage up to 1500V and 10mA. • The unit shall have the highest level of performance in Agarose gel. • Capacity 2 gels/run or better • Maximum samples 20 per gel • Tank (WxDxH) ~19 x 13 x 15 cm • Buffer volume 250 mL 1200 mL 500 mL • 2 ea 10 x 10 notched plates, • 2 ea 10 x 10 plates w/spacers,. • 2 ea 1 mm comb, 12 wells, • PAGE Module, • casting base • Each system includes buffer tank, lid, leads and cooling pack. • Power Unit • Output Voltage Range/Increments 5-250V/1V • Output Current Range/Increments 10-3,000mA/10mA • Output Power Range/Increments 1-300W/1W • Timer 1 min - 99 hr 59 min or continuous
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		<ul style="list-style-type: none"> • Programmable 10 steps/program, 20 program memory • Dimensions (W x D x H) 19 x 25 x 8 • Input Voltage 120 or 230V, 50/60 Hz • The unit shall warrant for a period of not less than 12 months from the date of successful installation on full parts and labour basis. Such warranty shall also include servicing and preventive maintenance during the period of validity. • The bidder shall submit a statement of compliance (or otherwise) in respect of every clause in this specification. The bidder shall also provide printed illustrated original technical literature to substantiate the conformity with the same.
06	Centrifuge – Microhematocrit Centrifuge with hematocrit tubes	Brand Name <i>(Please specify)</i> Model <i>(Please specify)</i> Country of Origin <i>(Please specify)</i> Country of Manufacture <i>(Please specify)</i> Product Brochure <i>(Please specify)</i> Manufacture Authorization & ISO <i>(Please specify)</i> Warranty <i>(Please specify)</i> The equipment shall be warranted for a period of not less than 24 calendar months from the date of successful commissioning on full "part &labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity <ul style="list-style-type: none"> • Minimum/Maximum speed 200/14000/rpm (or better) increment: 10 rpm • Maximum RCF 18620×g or better , increment: 10×g

		<ul style="list-style-type: none"> • Capacity 2ml×24, 0.5ml×36, 4-PCR8 serial tubes, AC24P or better
		<ul style="list-style-type: none"> • Timer 30seconds -99minutes-HOLD, continuous operation
		<ul style="list-style-type: none"> • Driving Motor Brushless DC motor
		<ul style="list-style-type: none"> • Safety devices
		<ul style="list-style-type: none"> • Dual door interlock, Over-speed detector, Over-temperature detector, Automatic
		<ul style="list-style-type: none"> • Internal diagnosis
		<ul style="list-style-type: none"> • Power requirements
		<ul style="list-style-type: none"> • Single-phase, 220V-240V, 50Hz/60Hz, 5A.
		<ul style="list-style-type: none"> • Additional features (optional) Speed/RCF switch, Pulse operation, Processing display, Voice reminder

CATEGORY 02 - GEERAL LABORATORY EQUIPMENT – I

Item No.	Description of Goods or related services	Qty and unit
01	Analytical Balance	03
02	Electronic Balance	08
03	Weight Scale	04
04	Bell (for examination timing)	04
05	Stop Watch (For Examination Timing)	04
06	Distillation Water Plant	03
07	Water Purification System	01
08	Hot Air Oven	04
09	pH Meter	06
10	Refrigerator for Chemicals and Reagent Storing	04
11	Double Beam Spectrophotometer (UV / Visible)	01

TECHNICAL SPECIFICATIONS

Item No.	Item Name	Listed Specification*
01	Analytical Balance	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i>
		The equipment shall be warranted for a period of not less than 24 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity
		<ul style="list-style-type: none"> • It should be an analytical balance to use in general laboratory applications such as chemical weighing
		<ul style="list-style-type: none"> • Capacity should not be less than 210g
		<ul style="list-style-type: none"> • Readability should be 0.1mg
<ul style="list-style-type: none"> • Tare range should be in full capacity 		
<ul style="list-style-type: none"> • Repeatability should be 0.1mg while linearity is +-0.2mg 		

		<ul style="list-style-type: none"> • Stabilization time should be less than 4 Seconds
		<ul style="list-style-type: none"> • Pan size should be not less than 95 mm
		<ul style="list-style-type: none"> • Sensitivity drift should be less than 2.5 ppm/°C in the temperature range of +10 ° - +40 °C
		<ul style="list-style-type: none"> • The balance should be featured with a multiple line LCD Backlit display
		<ul style="list-style-type: none"> • Weigh below hook shall be available for density measurement • The Balance Should have Stability Indicator • The Balance Should have Auto Tare facility • The Balance should have parts counting and percentage weighing application modes. • CE and ISO certificates should be available
		<ul style="list-style-type: none"> • The balance precision and the measurement accuracy should be assured by automatic internal calibration, which analyses temperature changes and time flow
		<ul style="list-style-type: none"> • Balance should be featured with RS232 and USB communication interfaces to transfer data to a PC according to GLP
		<ul style="list-style-type: none"> • Level Indicator should be placed in front panel for easy viewing.
		<ul style="list-style-type: none"> • The housing should have been made of plastic, and the pan is made of stainless steel.
		<ul style="list-style-type: none"> • Platform should be Stainless steel
		<ul style="list-style-type: none"> • Square Draft Shield with all glass panels, including three sliding doors
		Documentation
		<ul style="list-style-type: none"> • Manufacture product catalogs with requested information should be supplied
		<ul style="list-style-type: none"> • Manufacture authorization for the bidder to represent the given brand
		<ul style="list-style-type: none"> • User reference list should be attached
		<ul style="list-style-type: none"> • Bidder should have good aftersales facility with trained technicians and parts available locally to carry out any service/ repair immediately
02	Electronic Balance	Brand Name <i>(Please specify)</i>

	Model <i>(Please specify)</i>
	Country of Origin <i>(Please specify)</i>
	Country of Manufacture <i>(Please specify)</i>
	Product Brochure <i>(Please specify)</i>
	Manufacture Authorization & ISO <i>(Please specify)</i>
	Warranty <i>(Please specify)</i>
	The equipment shall be warranted for a period of not less than 24 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity
	<ul style="list-style-type: none"> • Superior Overload Protection & Practical Stackable Design for Convenient Storage
	<ul style="list-style-type: none"> • Improved Functionality with Bright Backlit LCD and 4 Button Operation
	<ul style="list-style-type: none"> • Lockswitch-can be locked into a specific configuration using the lockswitch
	<ul style="list-style-type: none"> • Integrated security slot prevents theft
	<ul style="list-style-type: none"> • Weighing range 0 -100 g
	<ul style="list-style-type: none"> • Repeatability (Std. Dev.) (g) - 0.01g
	<ul style="list-style-type: none"> • Linearity - 0.02
	<ul style="list-style-type: none"> • Stabilization Time (s) 1s
	<ul style="list-style-type: none"> • Construction - ABS housing and stainless steel pan
	<ul style="list-style-type: none"> • calibration -User-selectable external span or linearity calibration/Digital with external weight
	<ul style="list-style-type: none"> • Tare Range - full capacity by subtraction
	<ul style="list-style-type: none"> • Units of measurement should be available of Gram; Kilogram; Ounce; Pound
	<ul style="list-style-type: none"> • Power Requirement - AC adapter (included) or 4 AA batteries
	<ul style="list-style-type: none"> • Typical Battery Life (Hours) - 80

		<ul style="list-style-type: none"> • Display Type - Liquid crystal display (LCD) with backlight • Overload Capacity - 10 times the rated capacity • After Sales Services: Should have a good after sales service. Please attach details of after sales service personnel, their qualifications and address of the after sales division etc. • Letter of authority required from the manufacturer. • It should be have Backlit liquid crystal display (LCD) display • Construction should be ABS housing, stainless steel platform, up-front level indicator • Platform size should be 9.9 in x 7.1 in (250 mm x 180 mm) • AC Adapter or Rechargeable Battery should be included. • battery life need to be 80 Hours with Rechargeable Battery
03	Weight Scal	Brand Name <i>(Please specify)</i> Model <i>(Please specify)</i> Country of Origin <i>(Please specify)</i> Country of Manufacture <i>(Please specify)</i> Product Brochure <i>(Please specify)</i> Manufacture Authorization & ISO <i>(Please specify)</i> Warranty <i>(Please specify)</i> The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part &labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity <ul style="list-style-type: none"> • Electronic Adult weighting Scale (Platform type) • The Electronic Adult Weighing Scale should incorporate following features for user-friendly Convenience.

		<ul style="list-style-type: none"> • Capacity : 160 kg • Accuracy : 100 g • Platter Size: 350 mm x 300 mm (Tolerance +/- 10%) • The scale should be made up of heavy duty. Cast iron structure Platform with powder coated frames. • Display: LED / LCD: 5 digit with min. height 14 mm. • TARE facility with zero function. • HOLD function to lock the weight. • MEMORY function, to keep the last weight in memory. • The Scale should have inbuilt rechargeable battery backup for minimum of 8 hrs.
		The scale should have ISI mark.
06	Distillation Water Plant	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i>
		The equipment shall be warranted for a period of not less than 24 calendar months from the date of successful commissioning on full "part &labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity
		<ul style="list-style-type: none"> • Automatic distiller and continuous output. High quality distillation with water of high purity and free of metal ions and pyrogens.

		<ul style="list-style-type: none"> • Safety device should protect the water still in the event of water supply failure. • The different parts should be made of borosilicate glass 3.3, and heater protected by a quartz sheathe lengthens its duration. • Small size for easy handling and cleaning. • Distillation Capacity should be at least 4 L/H • Water Consumption should not be higher than 1 L/MIN • Conductivity at 20°C should be 1 µS/cm • Heater power should not be higher than 3000 W • Electricity Supply 230 V. - 50/60 Hz. - 13A • Should have a good after sales service. Please attach details of after sales service personnel, their qualification, and address of after sales division etc. • Letter of Authority required from manufacturer.
07	Water Purification System	Brand Name <i>(Please specify)</i> Model <i>(Please specify)</i> Country of Origin <i>(Please specify)</i> Country of Manufacture <i>(Please specify)</i> Product Brochure <i>(Please specify)</i> Manufacture Authorization & ISO <i>(Please specify)</i> Warranty <i>(Please specify)</i> The equipment shall be warranted for a period of not less than 24 calendar months from the date of successful commissioning on full "part &labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity <ul style="list-style-type: none"> • The system should produce ASTM I & ASTM II type water simultaneously. • It should be suitable to feed with direct tap water

	<ul style="list-style-type: none"> • It consists of a microprocessor control system that will ensure proper working condition
	<ul style="list-style-type: none"> • The system should be supplied with UV-oxidation facility
	<ul style="list-style-type: none"> • Output water rate should be not less than 5.5 L/hr
	<ul style="list-style-type: none"> • Flow rate should be at least 1-1.2 L/min
	<ul style="list-style-type: none"> • Conductivity should be 0.06 μS/cm or better
	<ul style="list-style-type: none"> • Resistivity should be 18.2 Mohm x cm or better
	<ul style="list-style-type: none"> • Particles level should be less than 1 μm/mL
	<ul style="list-style-type: none"> • Bacterial content should be less than 1 CFU/ml
	<ul style="list-style-type: none"> • TOC value should be less than 5 ppb
	<ul style="list-style-type: none"> • "Combination of pretreatment and the reverse osmosis membrane and Polishing cartridge containing high-quality ultrapure resin will ensure
	<ul style="list-style-type: none"> • consistent purity and long cartridge life"
	<ul style="list-style-type: none"> • System should have ion exchange cartridge to remove ions from the pretreated water
	<ul style="list-style-type: none"> • The model should be constructed with pigment-free material
	<ul style="list-style-type: none"> • Conical bottom outlet will allow for complete draining and efficient cleaning and disinfection
	<ul style="list-style-type: none"> • It should consist of a built-in tank with 5-7.5 L
	<ul style="list-style-type: none"> • It should have automatic water recalculation through the dispenser tubing to protect it from internal bacteria growth
	<ul style="list-style-type: none"> • It should have real-time clock and code protected operating system
	<ul style="list-style-type: none"> • There shall be a alphanumeric LCD display
	<ul style="list-style-type: none"> • Conductivity measuring cell will be available to display conductivity of purified water
	<ul style="list-style-type: none"> • It should have an ergonomic controlling unit that can be swiveled for best keypad use
	<ul style="list-style-type: none"> • Power: 230V/50Hz
	<ul style="list-style-type: none"> • A pretreatment filter should be supplied to increase the life time of the cartridges in the water system
	<p>Documentation</p>
	<ul style="list-style-type: none"> • Manufacture product catalogs with requested information should be supplied
	<ul style="list-style-type: none"> • Manufacture authorization for the bidder to represent the given brand

		<ul style="list-style-type: none"> • User reference list should be attached • Bidder should have good aftersales facility with trained technicians and parts available locally to carry out any service/ repair immediately
08	Hot Air Oven	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i>
		The equipment shall be warranted for a period of not less than 24 calendar months from the date of successful commissioning on full "part &labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity
		<ul style="list-style-type: none"> • It should be a oven that can be used in general laboratory applications such as glass ware drying, sterilization, media preparation etc.... • It should have fully stainless steel construction including interior and exterior • Capacity should be not less than 112L • Temperature range should be 5 above ambient to 300 C • Temperature resolution should be 0.1C in full range • It should have two stainless steel wire shelves with minimum seven shelf positions • Temp. controller should be microprocessor with external LCD graphic display and illuminated touch buttons • Forced air circulation should be available for a higher temperature accuracy inside the cabinet

	<ul style="list-style-type: none"> • Fan speed regulation should be possible with 0 to 100% and fan should be automatically shut-down after completing the program
	<ul style="list-style-type: none"> • There should be at least five-segment temperature-time profile
	<ul style="list-style-type: none"> • There should be at least 3 user programs memory
	<ul style="list-style-type: none"> • Adjustable start delay feature should be from 1 min to 99 h
	<ul style="list-style-type: none"> • It should have adjustable ramp functions to use in different laboratory applications
	<ul style="list-style-type: none"> • There should be a facility to overview set and current parameters while operating
	<ul style="list-style-type: none"> • There should be a possibility of temperature calibration by the user
	<ul style="list-style-type: none"> • power failure control system should be available with program continued after restoring power
	<ul style="list-style-type: none"> • Timer should be real time clock with 1 min to 100 days or continuous operation
	<ul style="list-style-type: none"> • Internal memory should be available to store up to 2000 data records
	<ul style="list-style-type: none"> • There should be a automatic air-flap control
	<ul style="list-style-type: none"> • Both RS232 and USB interfaces should be available to transfer data to a PC according to GLP
	<ul style="list-style-type: none"> • There should be audible and visual alarms for sensor fail for maximum safety
	<ul style="list-style-type: none"> • Over temperature protection should be available with class 2.0 according to DIN 12880
	<ul style="list-style-type: none"> • voltage: 230V/50 Hz
	<ul style="list-style-type: none"> • Power consumption should be in between 2350-2450 W
	<p>Documentation</p>
	<ul style="list-style-type: none"> • Manufacture product catalogs with requested information should be supplied
	<ul style="list-style-type: none"> • User reference list should be attached
	<ul style="list-style-type: none"> • After sales services: Should have a good after sales service. Please attach details of after sales service personal, their qualifications and address of the after sales division etc.
	<ul style="list-style-type: none"> • Letter of authority required from the manufacturer.
	<ul style="list-style-type: none"> • Spare parts should be available for 10 years from manufacture and bidder.
	<ul style="list-style-type: none"> • Warranty should be supplied from the manufacture and the bidder for 2 year

09	pH Meter	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i>
		The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part &labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity
		<ul style="list-style-type: none"> • It should be a bench top meter kit designed for Laboratory applications.
		<ul style="list-style-type: none"> • It should have an intelligent probe to automatically recognize the testing parameter, calibration history and method setting to minimize errors and setup time.
		<ul style="list-style-type: none"> • The probe should have at least 1-meter cable length.
		<ul style="list-style-type: none"> • The meter should have a large back-lit LCD display.
		<ul style="list-style-type: none"> • The display should indicate measurement of pH, mV and temperature.
		<ul style="list-style-type: none"> • The meter should have a housing, resistant to water and dust to IP 42 standard
<ul style="list-style-type: none"> • The probe should be water resistant to IP 68 standard. 		
<ul style="list-style-type: none"> • The kit should include Meter, gel-filled pH electrode with 1 m cable, pH Buffer Kit (500 ml), pH storage solution (500 ml), • For pH ~ 2, 4, 7, 9, 10 • electrode stand, 4 AA batteries, power adapter, quick-start guide, user manual, and documentation CD. 		
<ul style="list-style-type: none"> • It should be operative with 4 AA batteries with a battery life of at least 200 hrs. It should also include universal power adapter kit for operation with 230V, 50Hz. 		

		<ul style="list-style-type: none"> • The probe should measure with following specifications; • pH Range: 0-14 pH • Resolution: 0.1/0.01/0.001(selectable) • Accuracy: ± 0.01 pH • mV Range: ± 1200 mV • Resolution: 0.1 mV • Accuracy: ± 0.1mV • Temperature Range: 0-80C (probe temp. range) • Resolution: 0.10C • Accuracy: ± 0.30C • After Sales Services: Should have a good after sales service. Please attach details of after sales service personnel, their qualifications and address of the after sales division etc. • Letter of authority required from the manufacturer. • Documentary evidence of requested specifications should be provided by marking on manufacturer's literature.
10	Refrigerator for Chemicals and reagent storing	Brand Name <i>(Please specify)</i> Model <i>(Please specify)</i> Country of Origin <i>(Please specify)</i> Country of Manufacture <i>(Please specify)</i> Product Brochure <i>(Please specify)</i> Manufacture Authorization & ISO <i>(Please specify)</i>

		<p>Warranty <i>(Please specify)</i></p> <p>The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity</p>
		<ul style="list-style-type: none"> • Laboratory refrigerator to store pharmaceutical and biological products
		<ul style="list-style-type: none"> • The internal capacity should not be less than 250 Lts
		<ul style="list-style-type: none"> • An upright cabinet with a single glass door
		<ul style="list-style-type: none"> • It should have at least four shelves adjustable to keep item of various sizes
		<ul style="list-style-type: none"> • Temperature range of 2-80C
		<ul style="list-style-type: none"> • System should have a forced air circulation system to maintain uniformity of set temperature inside the cabinet
		<ul style="list-style-type: none"> • Temperature variation should not be higher than $\pm 30C$
		<ul style="list-style-type: none"> • It should have a microprocessor temperature control with LED display for easy observation
		<ul style="list-style-type: none"> • Audible and visual alarm for over temperature, under temperature and malfunctioning
		<ul style="list-style-type: none"> • Safety lock to prevent unauthorized access
		<ul style="list-style-type: none"> • Should have a large LED temperature display for easy observation
		<ul style="list-style-type: none"> • It should have an in-built voltage stabilizer to withstand unsteady voltage with a wide voltage tolerance
		<ul style="list-style-type: none"> • Interior/exterior dimensions should not be less than 45x50x100 cm /60 x 60 x 160 cm(WxDxH)
		<ul style="list-style-type: none"> • Power: 220-230V;50-60Hz / 220W or near
		<ul style="list-style-type: none"> • Letter of authority required from the manufacturer.
		<ul style="list-style-type: none"> • Documentary evidence of requested specification should be provided by marking on manufacturer literature.
11	Spectrophotometer (UV/Visible)	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>

	Country of Origin <i>(Please specify)</i>
	Country of Manufacture <i>(Please specify)</i>
	Product Brochure <i>(Please specify)</i>
	Manufacture Authorization & ISO <i>(Please specify)</i>
	Warranty <i>(Please specify)</i>
	The equipment shall be warranted for a period of not less than 24 calendar months from the date of successful commissioning on full "part &labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity
	<ul style="list-style-type: none"> • It should be a Double beam spectrophotometer with UV/Vis range • It should have front and rear panel USB connection to convenient access • It should have Xenon Flash Lamp to provide years of maintenance-free performance (or compatible) • It should have a reference detector to ensure accurate data measurement from each flash of the lamp. • It should have dual beam configuration to send the light to both sample detector and reference detectors for accurate measurement. • Should have Out-of-Plane monochromator configuration for maximum performance with minimum space requirement • The system should have GLP facility giving time, date, instrument serial number, sample ID and user ID for traceability. • The unit shall operate over the wavelength range of 190 to 1100nm with spectral bandwidth not greater than 1.8nm , wavelength accuracy shall be ± 1 nm and repeatability shall be ± 0.5 nm • Should have scanning speed up to 4200nm per minutes with 0.2, 0.5, 1.0, 2.0, 3.0, 5.0 nm data intervals • The unit shall be capable of performing absorbance, transmittance concentration measurement in the photometric range upto 3.5A, 125%T, ± 9999 C ,± 0.005A accuracy and 0.0002A noise at 0A with atleast 0.0005 A/hr stability

		<ul style="list-style-type: none"> • System should have Xenon Flash Lamp and Dual Silicon Photodiodes as detectors. (or compatible)
		<ul style="list-style-type: none"> • System should have integrated 6 positions cell changer to Increase sample Throughput
		<ul style="list-style-type: none"> • Stray Light: 0.08%T at 220nm
		<ul style="list-style-type: none"> • Display: Large Graphical with LCD backlight to get all the details without using computer
		<ul style="list-style-type: none"> • Power Requirements: 240 V;50 Hz
		<ul style="list-style-type: none"> • 2 Nos of 10mm Quarts and glass cells should be supplied with the system
		<ul style="list-style-type: none"> • After Sales Services: Should have a good after sales service. Please attach details of after sales service personnel, their qualifications and address of the after sales division etc.
		<ul style="list-style-type: none"> • Letter of authority required from the manufacturer.
		<ul style="list-style-type: none"> • Documentary evidence of requested specifications should be provided by marking on manufacturer's literature.

CATEGORY 03 - GENERAL LABORATORY EQUIPMENT – II

Item No.	Description of Goods or related services	Qty and unit
01	Ice Maker	01
02	Cyclo / Vortex Mixer	03
03	Homogenizer	01
04	Magnetic Stirrers	08
05	Water Bath	07
06	Vacuumed Pump	02
07	Heating Mantle (500 ml)	02
08	Heating Mantle (1000 ml)	02
09	Mechanical Mixer	02

TECHNICAL SPECIFICATIONS

Item Number	Item Name	Listed Specification*
01	Ice Maker	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i>
		The equipment shall be warranted for a period of not less than 24 calendar months from the date of successful commissioning on full "part &labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity
		<ul style="list-style-type: none"> • Should be capable of producing high quality ice flakes.
		<ul style="list-style-type: none"> • Ice production per day should be minimum of 90 kg per day
		<ul style="list-style-type: none"> • Should be use CFC free refrigerants and it should be commonly available refrigerant like R 134a
		<ul style="list-style-type: none"> • Should have storage facility of minimum 20kg
		<ul style="list-style-type: none"> • External structure shall be made of corrosion resistant inox
		<ul style="list-style-type: none"> • Should have water output and water in put for the system
<ul style="list-style-type: none"> • Water output connection 20 mm ø or near 		

		<ul style="list-style-type: none"> • Water inlet connection: 3/4" Gas or near • Power requirement should be 230V/50Hz • Power consumption should be less than 450W • After Sales Services: Should have a good after sales service. Please attach details of after sales service personnel, their qualifications and address of the after sales division etc. • Letter of authority required from the manufacturer. • Documentary evidence of requested specifications should be provided by marking on manufacturer's literature.
2	Cyclo / Vortex Mixer	Brand Name <i>(Please specify)</i> Model <i>(Please specify)</i> Country of Origin <i>(Please specify)</i> Country of Manufacture <i>(Please specify)</i> Product Brochure <i>(Please specify)</i> Manufacture Authorization & ISO <i>(Please specify)</i> Warranty <i>(Please specify)</i> The equipment shall be warranted for a period of not less than 24 calendar months from the date of successful commissioning on full "part &labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity <ul style="list-style-type: none"> • Should have techno polymer housing to ensure a high resistance to chemicals and mechanical agents. • Should have 4-hold feet for high stability to avoid vibrations. • Speed range should be up to 3000 rpm • Should have IP42 protection • Should have two operation modes including manual and continuous operation

		<ul style="list-style-type: none"> • After Sales Services: Should have a good after sales service. Please attach details of after sales service personnel, their qualifications and address of the after sales division etc. • Letter of authority required from the manufacturer. • Documentary evidence of requested specifications should be provided by marking on manufacturer's literature
3	Homogenizer	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i>
		The equipment shall be warranted for a period of not less than 24 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity
		<ul style="list-style-type: none"> • Instrument should be manufactured according to the international standards. • System should be suitable for the dispensing, homogenizing and mixing of samples. • Should be able to use volumes up to 8 liters • Shaft should be made of stainless steel and should have high resistance and durability. • Suitable shaft for 0.2 to 50ml volume with Ø 4 mm rotor and Ø 5 mm stator for microbiological applications • Construction material should be techno polymer to resistant for chemicals • Maximum stirring speed should be 30,000 rpm • Maximum viscosity which homogenize should be 1000mPaS

		<ul style="list-style-type: none"> • Power requirement should be 230V/50Hz. • Power consumption should be less than 550W. • After Sales Services: Should have a good after sales service. Please attach details of after sales service personnel, their qualifications and address of the after sales division etc. • Letter of authority required from the manufacturer. • Documentary evidence of requested specifications should be provided by marking on manufacturer's literature.
4	Magnetic Stirrers	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i>
		The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part &labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity
		<ul style="list-style-type: none"> • Heating Magnetic Stirrer with ceramic heating Plate should assuring a high resistance to chemicals and mechanical corrosion • Temperature : Ambient to 540°C or better • Temperature regulator: Should be available • Heating Plate Dia. : 175mm x 175 mm Approx • Magnetic Stirrer : Up to 1200 rpm or better with speed regulator • Timer : Up to 60 minutes or continuous • Automatic switch off :Should be available

		<ul style="list-style-type: none"> • Stirring capacity: Up to 2 liters • Should provide with Magnetic Stirring Bars 40 mm x 4 • After Sales Services: Should have a good after sales service. Please attach details of after sales service personnel, their qualifications and address of the after sales division etc. • Letter of authority required from the manufacturer. • Documentary evidence of requested specifications should be provided by marking on manufacturer's literature.
5	Water bath	Brand Name <i>(Please specify)</i> Model <i>(Please specify)</i> Country of Origin <i>(Please specify)</i> Country of Manufacture <i>(Please specify)</i> Product Brochure <i>(Please specify)</i> Manufacture Authorization & ISO <i>(Please specify)</i> Warranty <i>(Please specify)</i> The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity <ul style="list-style-type: none"> • Should be suitable for biological, clinical research, medical, bio chemical applications • Construction: Stainless Steel Molded (weld free) Square Tank • Capacity: 20 L or better • Temp. Control: PID or better temperature control • Temp. Setting: Digital Temperature setting • Temp. Read out: Digital Temperature read out • Temp. Range: Ambient to 100°C

		<ul style="list-style-type: none"> • Temp. Stability : +0.02°C or better
		<ul style="list-style-type: none"> • Temp. Uniformity: +0.01°C or better
		<ul style="list-style-type: none"> • Timer: Timer should be available
		<ul style="list-style-type: none"> • Power Supply: 230V, 50 Hz
		<ul style="list-style-type: none"> • "Heater: Immersion type Heating Element with Temperature sensor and Water Circulator"
		<ul style="list-style-type: none"> • Should be supplied with Concentric rings and lid.
		<ul style="list-style-type: none"> • Documentary evidence of requested specifications should be provided by marking on manufacturer's literature.
		<ul style="list-style-type: none"> • It should be suitable for applications such as biological, clinical research, medical, bio chemical applications
		<ul style="list-style-type: none"> • Bath with round corners and seamless stainless-steel sides will ensure efficient circulation and easy for cleaning
		<ul style="list-style-type: none"> • Water bath should be equipped with immersion heating element sheathed with stainless steel, corrosion free
		<ul style="list-style-type: none"> • Temperature uniformity should be improved by rotating water stirrer to direct flow to various areas of the bath.
		<ul style="list-style-type: none"> • It should come with built-in microprocessor-based digital controller
		<ul style="list-style-type: none"> • Audible & visible alarm will be activated and shut out power to 3°C above the set point or better
		<ul style="list-style-type: none"> • Digital timer should be available and it should start working when the set temperature has been stabilized
		<ul style="list-style-type: none"> • There shall be alarm and the display with "END" after the completion of the operation cycle
		<ul style="list-style-type: none"> • Temperature setting and read out will be LED digital
		<ul style="list-style-type: none"> • Timer function should be available
		<ul style="list-style-type: none"> • Power Supply: 230V, 50 Hz
		<ul style="list-style-type: none"> • Power should be not higher than 1100W
		<ul style="list-style-type: none"> • It should be supplied a gable lid
		<ul style="list-style-type: none"> • Documentation

		<ul style="list-style-type: none"> • Manufacture product catalogs with requested information should be supplied • Manufacture authorization for the bidder to represent the given brand • User reference list should be attached • Bidder should have good aftersales facility with trained technicians and parts available locally to carry out any service/ repair immediately
06	Vacuumed Pump	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i>
		The equipment shall be warranted for a period of not less than 24 calendar months from the date of successful commissioning on full "part &labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity
		<ul style="list-style-type: none"> • Oil-free vacuum pump to prevent air pollution and easy maintenance • Should drive by motor without belt for low vibration • should have moisture trap in air inlet for increase life time of the pump • unit should have automatic shut off facility when overheat • Maximum vacuum approx. 120mbar at 1450rpm and flow rate should be at least 30L per minute • Capacitor: 3uf/450v • 1/6HPhorse Power capacity with not more than 50dB noise • Power: 220-240V/50Hz

		<ul style="list-style-type: none"> • After Sales Services: Should have a good after sales service. Please attach details of after sales service personnel, their qualifications and address of the after sales division etc.. • Letter of authority required from the manufacturer. • Documentary evidence of requested specifications should be provided by marking on manufacturer's literature
07	Heating Mantle (500 mL)	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i>
		The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity
		The unit shall be suitable to sterilize glassware, unwrapped utensil etc, used in a clinical laboratory.
		The unit shall operate on a power supply of 230V ± 10%, 50Hz
		The chamber of the unit shall be table top type and made out of stainless steel.
		The Volume of the chamber capacity shall not be less than 2 liters.
		The unit shall be equipped with suitable pressure gauge and over heat shutoff switch.

		The unit shall have a door safety holder.
		The unit shall be supplied with an instruction manual in English.
08	Heating Mantle (1000 mL)	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i>
		The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity
		The unit shall be suitable to sterilize glassware, unwrapped utensil etc, used in a clinical laboratory.
		The unit shall operate on a power supply of 230V \pm 10%, 50Hz
		The chamber of the unit shall be table top type and made out of stainless steel.
		The Volume of the chamber capacity shall not be less than 2 liters.
		The unit shall be equipped with suitable pressure gauge and over heat shutoff switch.
		The unit shall have a door safety holder.
		The unit shall be supplied with an instruction manual in English.

09	Mechanical Mixer	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i>
		The equipment shall be warranted for a period of not less than 24 calendar months from the date of successful commissioning on full "part &labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity
		<ul style="list-style-type: none"> • Speed control range of 20 - 200 RPM
		<ul style="list-style-type: none"> • digital operation
		<ul style="list-style-type: none"> • Slow acceleration
		<ul style="list-style-type: none"> • A system to reduce the risk of spillage,
		<ul style="list-style-type: none"> • amotion interrupt safety cut-out.
		<ul style="list-style-type: none"> • Must be supplied with non slip mat, adhesive mat tray tulip clip tray and the universal rack.
		<ul style="list-style-type: none"> • Power requirements 240 VAC/40 watts
		<ul style="list-style-type: none"> • 350 x 350mm platform
<ul style="list-style-type: none"> • maximum capacity 8kg's 		
<ul style="list-style-type: none"> • Mixer control Solid state with optical feedback 		
<ul style="list-style-type: none"> • Motor Brushless 		
<ul style="list-style-type: none"> • Speed range 20-200 rpm through an orbit diameter of 32mm 		
<ul style="list-style-type: none"> • Overall dimensions W370 x D400 x H175 mm (approximately or near) 		

CATEGORY 04 - PHYSIOLOGY LABORATORY EQUIPMENT - I

Item No.	Description of Goods or related services	Qty and unit
01	Hand held Dynamometer	01
02	Ophthalmoscope	04
03	Oroscope	01
04	Osmo – meter	01
05	Perimeter	01
06	Sahli Haemoglobinometer	05
07	Stethoscope	20
08	Audio meter	01
09	BP (Sphygomomanometer) - Mercury	20
10	BP (Sphygomomanometer) – Non - Mercury	04
11	Glucometer with strips	05

TECHNICAL SPECIFICATIONS

Item No.	Item Name	Listed Specification*
01	Hand held dynamometer	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i>
		The equipment shall be warranted for a period of not less than 24 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity
		Measurement scale - 0 – 500 Newton
		Accuracy load cell - 0,1% (maximum)
		Accuracy display - 0,1% (full scale)
Power - 2 pieces 544 6.2 volt batteries		

		Operation - One button (on/reset)
		auto shut-off after 15 seconds
		Display - 4-digit display with low battery-indication
		Dimensions - Ca 150 x 85 x 85 mm
		Weight – 250 grams
		Delivered applicators - - finger applicator (to be used for little surfaces)
		- ‘arm’ applicator (to be used for larger surfaces)
		- flat applicator (to measure flat surfaces)
		Available applicators –
		- fist grip applicator
		- pinch grip applicator
		- pain pressure applicator
02	Ophthalmoscope	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>

		<p>Warranty <i>(Please specify)</i></p> <p>The equipment shall be warranted for a period of not less than 24 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity</p> <ul style="list-style-type: none"> • Should be rechargeable battery with Charger / mains operated. • Should have halogen / LED light source • Should have red-free filters • Should have small and large spot sizes, fixation targets, slit aperture, hemi-spot and cobalt blue filter • Should have wheel control with lens powers ranging from +20D to -35D in single diopter steps up to 10D and 5D steps above that. • Should have illuminated lens dial. • Should have rubber brow rest. • Should have dust free optics and a spherical optical system • Should be supplied with a carrying case. • If halogen lamp is used, then the following additional accessories should be supplied <ul style="list-style-type: none"> ▪ Bulb – 1 no ▪ Bulb holder ▪ Bulb cover
03	Oroscope	<p>Brand Name <i>(Please specify)</i></p> <p>Model <i>(Please specify)</i></p> <p>Country of Origin <i>(Please specify)</i></p> <p>Country of Manufacture <i>(Please specify)</i></p> <p>Product Brochure <i>(Please specify)</i></p>

		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i>
		The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity
		<ul style="list-style-type: none"> • Die-cast housing of copper-aluminum alloy, chrome coated
		<ul style="list-style-type: none"> • Measurement temperature without ATC: 20 °C
		<ul style="list-style-type: none"> • Measurement temperature range with ATC: 10 °C – 30 °C or better
		<ul style="list-style-type: none"> • Packing dimensions WxDxH 215x94x65 mm (depending on the model) • Dimensions of the box: 205x75x55 mm (depending on the model) • Product length: approx. 130 – 200 mm (depending on the model)
04	Osmo - meter	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>

		<p>Warranty (<i>Please specify</i>)</p> <p>The equipment shall be warranted for a period of not less than 24 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity</p> <ul style="list-style-type: none"> • Freezing point Osmometer with linear measuring range between 0 and 3000 mOsmol/kg with LCD screen for convenience in operation • Sample volume range should be 15 - 50 μl. Measurement within a minute for handling higher workloads and serial measurements • Facility for selection of two or three point calibration with provision for automatic calibration. Calibration should be stable for long period. • Should have capability for measurement of crystallization temperature with high resolution for calculation of results precisely and with high repeatability. • Sample cooling with high capacity air cooled peltier, without need for cooling liquid for dissipation of heat, or involving maintenance. • have automation with (i) initiation of the crystallization, (ii) detection of measuring value, (iii) storage and (iv) calibration for reproducible results. • Resolution of measurement should be one mOsmol/kg or better over the entire range of measurement; and reproducibility should be within 2mOsmol/kg or better over the range of 0 to 400 mOsmol/kg, and at least 4 mOsmol/kg in the range of 400 to 3000 mOsmol/kg. • Quality management assistance shall be available for compliance with regulations. • Shall be offered with dedicated external quality control software covering calibration, control and result validation with full audit trail.
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		<ul style="list-style-type: none"> • System should be complete with <ul style="list-style-type: none"> (i) consumables to run 500 samples including sample cups, calibrators, controls and (ii) (ii) recommended maintenance kit for Trouble free operation and (iii) suitable stabiliser.
05	Perimeter	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i>
		The equipment shall be warranted for a period of not less than 24 calendar months from the date of successful commissioning on full "part &labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity
		<ul style="list-style-type: none"> • Maximum temporal range (degrees) - 60° (monocular) / 160° (binocular) or better
		<ul style="list-style-type: none"> • Stimulus duration (ms) – 200 • Stimulus size - Goldmann III • Visual field testing distance (cm) – 25 • Stimulus intensity (maximum) – 10,000 ASB • Background illumination – 31.5 ASB

	<ul style="list-style-type: none"> • Suprathreshold – single stimulus - 3 levels (26, 68, 136 points)
	<ul style="list-style-type: none"> • Suprathreshold – Multiple stimulus - 3 levels (26, 68, 136 points)
	<ul style="list-style-type: none"> • Esterman (Driving) - Groups 1 and 2 (EU standard)
	<ul style="list-style-type: none"> • Customised tests - Test locations can be manually added to all suprathreshold tests
	<ul style="list-style-type: none"> • ZATA Standard – threshold central - 10-2;24/30-2 (extendable in-test)
	<ul style="list-style-type: none"> • ZATA Fast – threshold central - 10-2;24/30-2 (extendable in-test)
	<ul style="list-style-type: none"> • Suprathreshold – single - ~90 seconds per eye
	<ul style="list-style-type: none"> • Suprathreshold – multiple stimulus - <60 seconds per eye
	<ul style="list-style-type: none"> • ZATA Standard – threshold central - ~4 minutes per eye
	<ul style="list-style-type: none"> • Fixation target - Single or 4-point LED diamond pattern
	<ul style="list-style-type: none"> • Heiji-Krakau –
	<ul style="list-style-type: none"> • Video eye monitor –
	<ul style="list-style-type: none"> • Patient management database - MS Windows compatible; networkable
	<ul style="list-style-type: none"> • Practice management integration - EMR compatibility (parameter passing and text file
	<ul style="list-style-type: none"> • Hemifield Analysis –
	<ul style="list-style-type: none"> • Progression Analysis –
	<ul style="list-style-type: none"> • HFA data import –
	<ul style="list-style-type: none"> • Languages - ENG, CHI, key European languages
	<ul style="list-style-type: none"> • DICOM - (images)
	<ul style="list-style-type: none"> • Database backup - Removable, network or cloud storage
	<ul style="list-style-type: none"> • Weight (kg) – 13.5
	<ul style="list-style-type: none"> • Measures (W x D x H / mm) - 440 x 400 x 452
	<ul style="list-style-type: none"> • Mains operated –
	<ul style="list-style-type: none"> • Medical device - Class 1
	<ul style="list-style-type: none"> • Applied part - Type B
	<ul style="list-style-type: none"> • CE
	<ul style="list-style-type: none"> • FDA

06	SahliHaemoglobinometer	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i>
		The equipment shall be warranted for a period of not less than 24 calendar months from the date of successful commissioning on full "part &labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity
		<ul style="list-style-type: none"> • Kit consists of Comparator Holder black. The back of the holder is fitted with milky colour acrylic screen. In front of the holder there are three windows. The two side windows are fitted with colour standard strips. The middle window is meant for the square tube for colour comparison.
		<ul style="list-style-type: none"> • The dimensions of the windows: height 3 cms. Appox, width 0.5 cm appox.
		<ul style="list-style-type: none"> • Square H.B. Tubes : 2
		<ul style="list-style-type: none"> • H.B. Pipettes : 1
<ul style="list-style-type: none"> • Amber colour glass bottle : 1 		
<ul style="list-style-type: none"> • Glass Stirrer : 1 		
<ul style="list-style-type: none"> • Dropper with teat : 1 		
<ul style="list-style-type: none"> • Cleaning Brush : 1 		
<ul style="list-style-type: none"> • Spare latex tubing one meter :1 		

07	Stethoscope	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i>
		The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity
		<ul style="list-style-type: none"> • Chrome-plated. Dual-head chest piece • 48 mm chest-piece has white diaphragm • Complete with 2 spare ear tips and a spare diaphragm
08	Audio meter	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>

		<p>Warranty (<i>Please specify</i>)</p> <p>The equipment shall be warranted for a period of not less than 24 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity</p> <ul style="list-style-type: none"> • Should be Completely Digital - No Frequent Calibrations • Pocket Size compact unit interfaced with pc • Automatic Synchronized Tone & Masking • Automatic calculation of Speech Scoring • TDH 49 Head Phones • With suitable Computer & Printer • Should have facility for AC, BC and Speech Audiometry • No of Channel: 2 • Tone: Normal, Pulsed, Warble (Frequently Modulated 5% rate 5 Hz) • Frequency Range:- Air conduction 125 – 8000Hz Bone Conduction 250 – 80000Hz • Special Tests: - ABLB SISI with increment 1-2-3-4-5 dB DECAY Test BEKESY • Intensity Range (Pure Tone) TDH 49 120db HL/95 db (NBM) • Intensity Range (Speed Audiometry) • TDH 49 100 dB HL/95 dB HL (SN – WN)
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		<ul style="list-style-type: none"> • Optional <p>Should be upgradable to High Frequency Audiometry Should be upgradable to Free Field Audiometry Should have an option to Insert EAR PHONE.</p>
09	BP (Sphygmoma nometer) - Mercury	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i>
		The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity
		<ul style="list-style-type: none"> • Wall type
		<ul style="list-style-type: none"> • Mercury
		<ul style="list-style-type: none"> • Supplied with Bladder, Bandage cuff in Adult size, Control valve & Inflation bulb
		<ul style="list-style-type: none"> • Including basket
		<ul style="list-style-type: none"> • 0-300 mmHg manometer
		<ul style="list-style-type: none"> • Diameter – 150 mm
<ul style="list-style-type: none"> • Steel hinge pivots 		
<ul style="list-style-type: none"> • Lightweight die-cast case 		
<ul style="list-style-type: none"> • Shatterproof plastic manometer tube 		

		<ul style="list-style-type: none"> • Mercury reservoir isolation valve • Warranty – 01 Year
10	BP (Sphygmomanometer))- Non - Mercury	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i>
		The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity
		<ul style="list-style-type: none"> • 0-300 mmHg manometer • Diameter – 150 mm • Supplied with Bladder, Bandage cuff in Adult size, Control valve & Inflation bulb • Newflexibleshockmountresistsdamagetogauge • Clearwhitefacewithsharpblackscale • Dark Colourpointergivespreciseindication • Fittedwithbandagestylelatexfreecuff • ToughbrightwhiteMetalconstructionwithcuffbasketandhandle • Lightweightandalleasytoclean • Warranty – 01 Year

11	Glucometer with Strips	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i>
		The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part &labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity
		<ul style="list-style-type: none"> • Should be a hand held meter
		<ul style="list-style-type: none"> • Should require no routine maintenance
		<ul style="list-style-type: none"> • Should have reading range/linearity from 20 to 600 mg/dl
		<ul style="list-style-type: none"> • Should have a maximum reading time of less than 10 seconds
		<ul style="list-style-type: none"> • Should use electrochemical technology
		<ul style="list-style-type: none"> • Should use a minimum blood sample less than 1.5µl
		<ul style="list-style-type: none"> • Should have a LCD display
<ul style="list-style-type: none"> • Should have measuring unit in mg/dl. 		
<ul style="list-style-type: none"> • Should have wide operating temperature 		
<ul style="list-style-type: none"> • Should have a minimum memory of 50 		
<ul style="list-style-type: none"> • Should have life time replacement offer 		
<ul style="list-style-type: none"> • Should have easy code entry technique 		
<ul style="list-style-type: none"> • Battery should be replaceable without using any tools. 		

		<ul style="list-style-type: none"> • Should have facility to ensure accuracy of measurements.
		<ul style="list-style-type: none"> • Should be supplied with three types of control solutions of each at least 20 ml
		<ul style="list-style-type: none"> • Should have safety certificate from a competent authority CE / FDA (US) / STQC CB
		GLUCOSE STRIPS
		<ul style="list-style-type: none"> • Should be able to use capillary blood samples.
		<ul style="list-style-type: none"> • Should have a minimum 4 months shelf life after opening the strip vial.
		<ul style="list-style-type: none"> • All strips should have at least one year expiry date from the date of supply.
		<ul style="list-style-type: none"> • 50 strips should be supplied along with the equipment.
		<ul style="list-style-type: none"> • Strips should be available in the local market.

CATEGORY 05 - PHYSIOLOGY LABORATORY EQUIPMENT – II

Item No.	Description of Goods or related services	Qty and unit
01	Bicycle Ergo Meter	02
02	Treadmil	01
03	Evoke Potential Recording System	
04	Neubauer Counting Chamber	
05	Patient Bed	
06	Peak Flow Meter	
07	Set of Pseudo-Isochromatic Plates	
08	Spiro meter	
09	Stadio meter	
10	Two point Discriminator / Divider	
11	Urine Strip Reader	
12	Tuning Form Set	
13	Scalpels 10,000/pack	
14	Slide Forceps 1 set	

TECHNICAL SPECIFICATIONS

Item Number	Item Name	Listed Specification*
01	Bicycle Ergo meter	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i> The equipment shall be warranted for a period of not less than 24 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity
		Console 7.5" Blue Backlit LCD w/ Integrated Reading Rack
		Console feedback RPM, Calories, Time, Distance, Pulse, Level, Speed, Segment Time, Program Name, Watts, and Laps
		"Heart Rate Contact & Telemetric; Heart Rate Strap included Resistance 20 Levels"

		Drive Train Poly-V Belt w/Self-Tensioner
		Power Plug-In, 24V
		Fly Wheel 30 lbs., Steel
		Seat Adjustment High density foam Easy-Ratchet w/ full Fore/Aft Seat
		Crank 3-Piece, Cold-Forged Steel, Case-Hardened Axle & Commercial-Grade Sealed Bearings
		Frame Heavy-Gauge, High-Strength Steel w/ Durable Powder-Coat Paint
		Dimension 42" x 21" x 53"
		Product Weight 115 lbs
		Maximum User Weight 325 lbs
02	Treadmill	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>

		<p>Warranty (<i>Please specify</i>)</p> <p>The equipment shall be warranted for a period of not less than 24 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity</p> <p>Console Feedback Time, Distance, Speed, Elevation, Calories, Pace,</p> <p>Altitude, Laps, Segment Time, and Heart Rate</p> <p>Console 9" Blue Backlit LCD w/ Tablet Friendly Reading Rack</p> <p>Heart Rate Contact & Telemetric; Heart Rate Strap included</p> <p>Quick Access Keys</p> <p>Speed .5 to 12 mph</p> <p>Incline 15 Levels</p> <p>Drive Motor 3.5 HP – DC Motor</p> <p>Deck 1" Waxed Deck, Double Sided, Non-Folding</p> <p>Belt 22" x 60", 2 ply (2.5mm)</p> <p>Rollers 3.0" / 3.0" (Crowned)</p> <p>Cushioning 6 Cushions (rear rigid mount)</p> <p>Handrails Short Lateral, Incline & Speed controls on handlebars</p> <p>Frame Commercial-Grade Structural Steel w/ Durable Powder-Coat Paint</p>
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		Dimensions 78" x 31.9" x 56.1"
		Product Weight 269 lbs.
		Max.User Weight 425 lbs.
03	Evoked Potential recording system	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i>
		The equipment shall be warranted for a period of not less than 24 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity
04	Neubauer Counting Chamber	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>

		<p>Warranty <i>(Please specify)</i></p> <p>The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity</p> <p>Inside cell of Chamber: An area of 9 Sq. mm (3x3 sq.mm) divided into 9 squares of one mm side by means of triple lines. The central small square should be further divided by triple lines into 5x5 = 25 smaller squares each with side 1/5 of a mm. Each of the square is further divided into 4 x 4 = 16 smallest squares with side equal to one twentieth of a mm. Thus Dimension of individual cellof 0.05 x 0.05 = 0.0025 mm²</p> <p>Gap between cover: 0.1 mm. Slip and grid area</p> <p>Pipettes: RBC and WBC pipettes</p> <p>Accessories: Rubber suckers for RBC & WBC pipettes</p> <p>Cover slips: 22 x 25 mm one box</p> <p>Box for storage (preferably wood)</p>
05	Patient Bed	<p>Brand Name <i>(Please specify)</i></p> <p>Model <i>(Please specify)</i></p> <p>Country of Origin <i>(Please specify)</i></p> <p>Country of Manufacture <i>(Please specify)</i></p> <p>Product Brochure <i>(Please specify)</i></p>

		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i>
		The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity
		Size 2030*900*500mm
		Structure Material: plastic-sprayed steel or powder coated steel
		Bed surface: cold-rolling steel
		Angle of backrest: 0-75
		Castor: optional, dia. 125mm individual brake castor
		Handle crank: 1 pc steel handle crank
		Certificate: ISO9001,ISO13485
		OEM Acceptable
		06
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>

		<p>Warranty (<i>Please specify</i>)</p> <p>The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity</p>
		PEF :Range 15 - 999 L/min (1 L/min resolution) or better
		FEV1 /FEV6 :Range 0.15 - 9.99 Litre (0.01 Litre resolution)
		Accuracy :PEF: $\pm 5\%$ or 20 L/min (whichever is greater)
		FEV1 : $\pm 3.5\%$ or 0.1 Litre (whichever is greater)
		FEV6 : $\pm 4\%$ or 0.1 Litre (whichever is greater)
		Sensor :Pressure/flow sensor technology
		Non-volatile Memory : 96 patient test scores or better
		Colour zone :3 colour zone (green, yellow, red or similar)
		Reference values :User settable
		Quality factor :Warning& indicator for cough or abnormal blow
		Communication :Bi-directional IR port (RS232 format)
		Manufacturing Standard ISO9001 EN 13485 Power Supply batteries must be provided
		Disposable Mouthpieces must be provided (100 x2)
07	Set of Pseudo- isochromatic plates	Brand Name (<i>Please specify</i>)
		Model (<i>Please specify</i>)

		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i>
		The equipment shall be warranted for a period of not less than 24 calendar months from the date of successful commissioning on full "part &labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity
		Ishiharas Type Tests For Colour - Blindness 38 plates Latest Edition
08	Spirometer	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>

		<p>Warranty (<i>Please specify</i>)</p> <p>The equipment shall be warranted for a period of not less than 24 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity</p> <ul style="list-style-type: none"> • Power - AC power and battery backup required • Dimension - Should be specified able to keep on a trolley • Interface - USB and Bluetooth • Display - Should be touch and color Display • Working Condition - Temp 0 - 40 °C/ 32 - 104 °F <ul style="list-style-type: none"> a. Rel. Humidity 5 - 90% b. Athmosph. Pressure 700 - 1060 hPa • Printer - Direct to printer or with software • Paper width - 112/A4 trough USB • Paper type - roll/A4 • Printer type – Laser Printer • Tests - FVC Pre/post <ul style="list-style-type: none"> FVL SVC Pre/Post MVV DLCO MBW RV TLC FRC • BTPS correction – Required • Inspire/Expire – Required • Pre-Post broncho test – Required • Stored Record – Required
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	<ul style="list-style-type: none"> • Interpretation – Required • Child incentive - Should be have child incentive and can be done test above age 04 years • Type - Ultrasonic transit time • Flow Range - ± 16 l/s • Flow Resolution – 4 ml/s • Flow Accuracy (except PEF) - $\pm 2\%$ or 0.020 l/s • PEF Accuracy - $\pm 5\%$ or 0.200 l/s • MVV Accuracy - $\pm 5\%$ or 5 l/min • Volume Range - ± 12 l • Volume Resolution – 1 ml • Volume Accuracy - $\pm 2\%$ or 0.050 l • Resistance - 0.3 cm H₂O/l/s at 16 l/s • Safety Standard - EN ISO 9001, EN ISO 13485 <ul style="list-style-type: none"> i. EN ISO 14971, EN 62366, ii. EN 62304, EN ISO 26782, iii. EN ISO 23747, IEC 60601-1 , iv. IEC60601-1-2, ATS/ERS 2005, v. NIOSH/OSHA, SSA Disability • SPIROMETRY Standard - ATS/ ERS 2005, NIOSH, OSHA • US FDA - 510K market clearance • Calibration and warm-up time - the machine should be no calibration, no warm-up time, no moving parts • Predicted values - indicate Sri Lankan /Asian population predicted values • Warranty after commissioning - not less than 3 years • Cart - Epoxy coated cart with wheels and brake system should be provided with the equipment • Gas Cylinders and Regulators - Please specify • Technical literature and Soft ware - Original Technical • Literature and software should be provided with the unit • CDDA Certificate - should be available • Language - English
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09	Stadiometer	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i>
		The equipment shall be warranted for a period of not less than 24 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity
		Simple and easy to set up without no wall fastening
		Large floor plate
		clear visible measuring.
		Measuring range in cm:20 - 205 cm
		Measuring range in inch:8 - 81 "
		Graduation [Measuring Rod]:1 mm / 1/8 inch
Measure (W x H x D): 337 x 2165 x 590 mm , 13,3 x 85,2 x 23,2 inch		
Net weight: 2,4 kg , 5,3 l		
10	Two point	Brand Name <i>(Please specify)</i>

	discriminator / Divider	Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i>
		The equipment shall be warranted for a period of not less than 24 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity
		To Accurately tests static and moving two-point discrimination of fingers, toes or sensory flaps.
		Easy rotating,
		Comfortable plastic disks
		standard testing intervals from 1 to 15mm apart. A 20 and 25mm spacing are also given.
		One disk setting tests from 1 to 8mm.
		And 9 to 15mm disk setting
		Easy to read and use.
Instructions manual in English		
11	Urine Strip Reader	Brand Name <i>(Please specify)</i>

	Model <i>(Please specify)</i>
	Country of Origin <i>(Please specify)</i>
	Country of Manufacture <i>(Please specify)</i>
	Product Brochure <i>(Please specify)</i>
	Manufacture Authorization & ISO <i>(Please specify)</i>
	Warranty <i>(Please specify)</i> The equipment shall be warranted for a period of not less than 24 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity
	Urine Strip Reader
	Ability to detect the following Leukocytes, Nitrite, Urobilinogen, Protein, pH, Blood, Specific Gravity, Ketone Bilirubin, Glucose and Ascorbic Acid
	Type Manual
	Methodology- Reflectance Photometry
	Detection- Photosensitive Diode
	Throughput- Single Test Option: atleast 50 tests/hour
	Continuous Test Option: 100 tests/hour
	Test Categories- Routine, STAT and QC
	Memory Last 1000 results

	Strip Incubation Time around 1 Minute or better
	Wavelength of Monochromatic LED 525 nm and 635 nm (be able to detect the above mentioned parameters)
	Default Strips for the above parameters
	USB Port for Data Transfer
	25 Pin Parallel Port for External Printer
	Data Entry Capabilities Operator/Patient ID – Manual Entry and Barcode Reader (Up to 20 characters)
	Connection Capabilities Internal Thermal Printer (included) Calibration Automatic
	Available Languages on the Screen must be English
	Operating Conditions 0-40°C (32-104° F); < 85% RH
	Power Source 100-240 VAC, 50-60 Hz
	High quality color chart ensures accurate visual reading
	Compatible for visual and analyzer reading
	Must be supplied with at least 200 strips
	• at least 2 year shelf life for unopened canisters
	• 3 month shelf life for strips in opened canisters

		<p>Pouch Packaging of strips preferred- individually packaged strips available in kits of 5 or 10 strips for visual reading only (includes 1 color chart)</p> <p>2 year warranty</p>
12	Tunning Folk Set	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i>
		<p>The equipment shall be warranted for a period of not less than 24 calendar months from the date of successful commissioning on full "part &labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity</p> <p>Material: Aluminium Alloy or stainless steel 128, 256, 512 Hz</p> <p>With a box or bag, and rubber hammer</p>
13	Slide forceps 1 set	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>

		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i>
		The equipment shall be warranted for a period of not less than 24 calendar months from the date of successful commissioning on full "part &labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity
		(S/S) 6mm , 12 mm Pointed & blunt)
14	Scalpels 10,000/pack	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i>
		The equipment shall be warranted for a period of not less than 24 calendar months from the date of successful commissioning on full "part &labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity
		Handle No. 4 & 24 Scalpel blades for above10,000/pack each

CAREGORY 06 - ANATOMICAL MODELS

Item No.	Description of Goods or related services	Qty and unit
01	Full Size Skeleton	02
02	Skeletal Components- Upper Extremities - Loose Hand Skeleton	02
03	Skeletal Components- Upper Extremities- Hand Skeleton	02
04	Skeletal Components- Lower Extremities- Foot Skeleton	02
05	Skeletal Components- Lower Extremities – Loose Foot Skeleton	02
06	Sectional Spinal Columns – Cervical Section	01
07	Sectional Spinal Columns – Thoracic Section	01
08	Sectional Spinal Columns – Lumber Section	01
09	Spinal Cord with Nerve Endings	01
10	Bone Structure Model- Enlarged 80 times	01
11	Classic Flexible Spine with Femur Heads and Painted Muscles	01
12	Skull with Facial Muscles	01
13	Mini Torso – 12 parts	01
14	Skin Model – 3 part	01

15	Half head with Musculature	01
16	Deluxe Brain with Arteries on Base of Head – 10 parts	02
17	Deluxe Head Model – 6 part	01
18	Classic Eye – 3 times Full Size – 6 part	01
19	Giant Eye – 5 times full size – 6 part	01
20	Classic Eye in Orbit – 3 times full size – 7 part	01
21	Nose with Paranasal Sinuses – 5 Parts	02
22	Giant Ear – 5 times full size – 3 parts	01
23	Giant Ear Advanced Version – 3 times Life Size – 6 part	01
24	Classic Giant Ear – 3 times Life Size – 4 part	01
25	Giant Heart – 2 times Life Size – 4 part	01
26	Functional Larynx – 2.5 times full size	01
27	Functional Larynx	01
28	Intestinal Villi – 100 times Life Size	01
29	Kidneys with rear Organs of Upper Abdomen – Combo Model – 3 part	01
30	Female and Male Pelvis – 2 part	02
31	Stage of Fertilization and the Development of the Embryo – 2 times life size	01
32	Embryonic Development Model in 12 Stages	01
33	Manniquin	03

TECHNICAL SPECIFICATIONS

Item Number	Item Name	Listed Specification*
01	Full Size Skeleton	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i>
		The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity
		<ul style="list-style-type: none"> • The classical muscle skeleton must contain Standard benefits of a 3B scientific skeleton. • It should show the structural interaction between bones and muscles. • It should depicts over 600 structures of medical/ Anatomical significance including muscle organs in two deferent colures on the left side as well as hand numbered bones.

		<ul style="list-style-type: none"> • It should contain fissures and foramina on the right side and should be with hanging stand.
		<ul style="list-style-type: none"> • Height ~ 175 cm
		<ul style="list-style-type: none"> • Weight ~ 10 Kg
02	Skeletal Components- Upper Extremities - Loose Hand Skeleton	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i>
		The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity
		<ul style="list-style-type: none"> • Loose Hand Skeleton should threaded very loosely on nylon and both left and right hand.
03	Skeletal Components- Upper Extremities- Hand Skeleton	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>

		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i>
		The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part &labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity
		<ul style="list-style-type: none"> • Hand skeleton must contain wire mounted slightly flexible fingers and both left and right hands.
04	Skeletal Components- Lower Extremities – Foot Skeleton	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>

		<p>Warranty <i>(Please specify)</i></p> <p>The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part &labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity</p>
		<ul style="list-style-type: none"> • Foot skeleton should mount on wire and it must contain both left and right foot.
05	Skeletal Components-Lower Extremities- Loose Foot Skeleton	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		<p>Warranty <i>(Please specify)</i></p> <p>The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part &labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity</p>
		<ul style="list-style-type: none"> • Loose foot skeleton should thread very loosely on nylon and must contain both left and right foot.

06	Sectional Spinal Columns - Cervical Section	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i>
		The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part &labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity
		<ul style="list-style-type: none"> • It should consist of occipital plate, the 7 vertebrae with discs, cervical nerves, vertebral arteries and spinal cord on stand. • Height ~ 20 cm • Weight ~ 0.5 Kg
07	Sectional Spinal Columns - Thoracic Section	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>

		<p>Warranty <i>(Please specify)</i></p> <p>The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity</p> <ul style="list-style-type: none"> • It should consist of the 12 thoracic vertebrae with discs, thoracic nerves and spinal cord. • It must flexibly mount on stand. • Height ~ 35 cm • Weight ~ 0.5 Kg
08	Sectional Spinal Columns - Lumbar Section	<p>Brand Name <i>(Please specify)</i></p> <p>Model <i>(Please specify)</i></p> <p>Country of Origin <i>(Please specify)</i></p> <p>Country of Manufacture <i>(Please specify)</i></p> <p>Product Brochure <i>(Please specify)</i></p> <p>Manufacture Authorization & ISO <i>(Please specify)</i></p> <p>Warranty <i>(Please specify)</i></p> <p>The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity</p> <ul style="list-style-type: none"> • It should consisting of the 5 lumbar vertebrae with discs, sacrum with flap, coccyx, spinal nerves and spinal cord on stand. • Height ~ 35 cm

		<ul style="list-style-type: none"> • Weight ~ 0.5 Kg
09	Spinal Cord with Nerve Endings	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i>
		The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity
		<ul style="list-style-type: none"> • The construction of the spinal cord should show through accurate representations of two different colure matter, fissures, nerve roots, the spinal ganglia, the spinal nerve with its four branches and the three layers of the spinal column. • The modal should mount on a base which has illustrations comparing cross sections from the cervical, thoracic, lumber and sacral regions of the spinal column.
		<ul style="list-style-type: none"> • Weight ~ 0.5 Kg
10	Bone Structure Model – Enlarged 80 times	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>

		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i>
		The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part &labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity
		<ul style="list-style-type: none"> • Bone structure model must show the typical structure of tubular bone.
		<ul style="list-style-type: none"> • Planes must show in cross and longitudinal section through all levels of the bone and bone marrow.
		<ul style="list-style-type: none"> • Typical elements should easily identified and help in understanding the structure and function of the Haversian systems.
11	Classic Flexible Spine with Femur Heads and Painted Muscles	Weight ~ 1 Kg
		Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>

		<p>Warranty <i>(Please specify)</i></p> <p>The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity</p> <ul style="list-style-type: none"> • Muscle organs and insertions should paint in two deferent colures on left innominate, femur and vertebrae. • It must be with stand. • Height ~ 90 cm • Weight ~ 2 Kg
12	Skull with facial muscles	<p>Brand Name <i>(Please specify)</i></p> <p>Model <i>(Please specify)</i></p> <p>Country of Origin <i>(Please specify)</i></p> <p>Country of Manufacture <i>(Please specify)</i></p> <p>Product Brochure <i>(Please specify)</i></p> <p>Manufacture Authorization & ISO <i>(Please specify)</i></p> <p>Warranty <i>(Please specify)</i></p> <p>The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity</p> <ul style="list-style-type: none"> • The face and mastication muscles must illustrated on the right half of this skull model.

		<ul style="list-style-type: none"> • The face musculature should be easily and precisely be differentiated from the mastication musculature by using two different colures.
		<ul style="list-style-type: none"> • On the left half the muscle origins and insertions should marked with two different colures.
		<ul style="list-style-type: none"> • The jaw must movable and due to the flexible musculature the rudimentary chewing motion can be demonstrated.
		<ul style="list-style-type: none"> • Cranium and m. masseter should detachable.
		<ul style="list-style-type: none"> • Weight ~ 1 Kg
13	Mini Torso – 12 parts	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i>
		The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part &labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity
		<ul style="list-style-type: none"> • Mini masterpiece should half-life size so even short hands can quickly disassemble the torso.
		<ul style="list-style-type: none"> • All parts must numbered and identified on the included product manual.

		<ul style="list-style-type: none"> Removable parts should contain, Two head halves Brain half Two part lung Two part heart Liver with gall bladder Stomach Two part intestinal tract
		<ul style="list-style-type: none"> Weight ~ 2 Kg
14	Skin Model – 3 parts	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>

		<p>Warranty <i>(Please specify)</i></p> <p>The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity</p> <ul style="list-style-type: none"> • It should contain three parts. • All three models should be located on a common base, can be removed individually, and can be attached together via magnets to show the interrelationships. • Distinctions within the skin should illustrate with regard to the position on the human body such as the palm of the hand, back of the hand and scalp. • Weight ~ 2 Kg
15	Half Head with Musculature	<p>Brand Name <i>(Please specify)</i></p> <p>Model <i>(Please specify)</i></p> <p>Country of Origin <i>(Please specify)</i></p> <p>Country of Manufacture <i>(Please specify)</i></p> <p>Product Brochure <i>(Please specify)</i></p> <p>Manufacture Authorization & ISO <i>(Please specify)</i></p> <p>Warranty <i>(Please specify)</i></p> <p>The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity</p>

		<ul style="list-style-type: none"> • It must representation of the outer, superficial and internal structures of head and neck. • It must be on removable stand. • Weight ~ 1.1 Kg
16	Deluxe Brain with Arteries on based of head – 10 parts	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i>
		The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part &labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity
		<ul style="list-style-type: none"> • Deluxe brain should come with an opened head to allow detailed study of the brain's position in the skull. • The head should horizontally divide above the skull base. • The brain must divide medially, with a removable basilar artery. • Both halves should be divided into frontal parietal lobes, temporal with occipital lobes and half of cerebellum. • Weight ~ 1.5 Kg
17	Deluxe Head Model – 6 parts	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>

		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i>
		The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity
		<ul style="list-style-type: none"> • This head should mount on a base and features a removable 4- part brain half with arteries. • The eyeball with optic nerve should be removable. One side should expose the nose, mouth cavity, and pharynx, occiput and skull base. • Weight ~ 1 Kg
18	Classic Eye – 3 times full size – 6 parts	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>

		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i>
		The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity
		<ul style="list-style-type: none"> • This model should dissect into the following parts, Both halves of sclera with cornea and eye muscle attachments.
		<ul style="list-style-type: none"> • Both halves of choroid with iris and retina.
		<ul style="list-style-type: none"> • Lens
		<ul style="list-style-type: none"> • Vitreous humour
		<ul style="list-style-type: none"> • Weight ~ 0.1 Kg
19	Giant Eye – 5 times full size – 6 parts	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>

		<p>Warranty <i>(Please specify)</i></p> <p>The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity</p> <ul style="list-style-type: none"> • It must be 5 times full size and this model should dissect into the following parts, • Both halves of sclera with cornea and eye muscle attachments. • Both halves of choroid with iris and retina. • Lens • Vitreous humour • Weight ~ 0.5 Kg
20	Classic Eye in orbit – 3 times full size – 7 parts	<p>Brand Name <i>(Please specify)</i></p> <p>Model <i>(Please specify)</i></p> <p>Country of Origin <i>(Please specify)</i></p> <p>Country of Manufacture <i>(Please specify)</i></p> <p>Product Brochure <i>(Please specify)</i></p> <p>Manufacture Authorization & ISO <i>(Please specify)</i></p> <p>Warranty <i>(Please specify)</i></p> <p>The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity</p>

		<ul style="list-style-type: none"> This model should show the optic nerve in its natural position in the bony orbit of the eye on square base. Weight ~ 1 Kg
21	Nose with Paranasal Sinuses	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i>
		<p>The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity</p>
<ul style="list-style-type: none"> The upper right half of the face should enlarge 1.5 times to illustrate the structure of the nose with paranasal sinuses. The following structures should be differentiated by colour and visible through the transparent removable skin, <ul style="list-style-type: none"> Outer nasal cartilages Nasal, maxillary, frontal, and sphenoidal sinuses <p>Opened maxillary sinus when the zygomatic arch should be removed</p>		

		<ul style="list-style-type: none"> The following structures should show in median section Nasal cavity, Lined with mucosa, with the nasal conchae Arteries of the mucous membrane Olfactory nerves Innervation of the lateral wall of the nasal cavity, the nasal conchae and the plate.
		<ul style="list-style-type: none"> Weight ~ 1 Kg
22	Giant Ear – 5 times full size – 3 parts	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i>
		The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part &labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity

		<ul style="list-style-type: none"> • It must representation of outer, middle, and inner ear with removable auditory ossicles, labyrinth with cochlea, and vestibulocochlear nerve.
		<ul style="list-style-type: none"> • Weight ~ 3 Kg
23	Giant Ear Advanced version – 3 times life size – 6 parts	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i>
		<p>The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity</p>
	<ul style="list-style-type: none"> • The model should representation of the outer, middle, and inner ear. • It must have removable eardrum with hammer, anvil, and stirrup as well as 2 part labyrinth with cochlea, and auditory/ balance nerve. It should have two removable bone sections to close the middle and inner ear. 	
	<ul style="list-style-type: none"> • Weight ~ 1.5 Kg 	
24	Classic Giant Ear – 3 times life size – 4 parts	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>

		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i>
		The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity
		<ul style="list-style-type: none"> • The model should representation of the outer, middle, and inner ear. • It must have removable eardrum with hammer, anvil, and stirrup as well as 2 part labyrinth with cochlea, and auditory/ balance nerve. • Weight ~ 1.5 Kg
25	Giant Heart – 2 times life size – 4 part	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>

		<p>Warranty <i>(Please specify)</i></p> <p>The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity</p> <ul style="list-style-type: none"> • The anatomy of the human heart should show in great detail with ventricles, atria, valves, veins and the aorta. • The front heart wall should be removed to reveal the chambers and valves inside. • It should come with a removable base and a multilingual product manual. • Weight ~ 1.5 Kg
26	Functional Larynx – 2.5 times full size	<p>Brand Name <i>(Please specify)</i></p> <p>Model <i>(Please specify)</i></p> <p>Country of Origin <i>(Please specify)</i></p> <p>Country of Manufacture <i>(Please specify)</i></p> <p>Product Brochure <i>(Please specify)</i></p> <p>Manufacture Authorization & ISO <i>(Please specify)</i></p> <p>Warranty <i>(Please specify)</i></p> <p>The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity</p> <ul style="list-style-type: none"> • The epiglottis, vocal cords, and arytenoid cartilage are movable.

		<ul style="list-style-type: none"> • Additionally it should have, Hyoid bone Cricoid cartilage Thyroid cartilage Thyroid Parathyroid glands
		<ul style="list-style-type: none"> • Weight ~ 1 Kg
27	Functional Larynx	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i>
		The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity
		<ul style="list-style-type: none"> • Epiglottis, vocal cords and arytenoid cartilage should be movable and can be rotated on base.
		<ul style="list-style-type: none"> • Weight ~ 1 Kg

28	Intestinal Villi – 100 times life size	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i>
		<p>The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity</p> <ul style="list-style-type: none"> • It should consist of one entire villus, one longitudinally sectioned villus showing the arterioles and venules and one sectioned villus to show the lymphatic vessels. • Also it should include a longitudinal section of the crypt of Lieberkuhn's on base.
29	Kidneys with rear organs of upper abdomen – Combo model – 3 parts	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>

		<p>Warranty <i>(Please specify)</i></p> <p>The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity</p> <ul style="list-style-type: none"> • It should contain 3 parts and this 3 part model should include upper abdominal organs which should be attached in their natural positions and are removable from the kidneys. • Weight ~ 1.5 Kg
30	Female and male pelvis – 2 parts	<p>Brand Name <i>(Please specify)</i></p> <p>Model <i>(Please specify)</i></p> <p>Country of Origin <i>(Please specify)</i></p> <p>Country of Manufacture <i>(Please specify)</i></p> <p>Product Brochure <i>(Please specify)</i></p> <p>Manufacture Authorization & ISO <i>(Please specify)</i></p> <p>Warranty <i>(Please specify)</i></p> <p>The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity</p> <ul style="list-style-type: none"> • It should present a median section to show the normal position of organs within the adult pelvis. • One half of the reproductive organs along with the bladder and rectum should be removable. • Weight of Female pelvis ~ 2 Kg • Weight of Male Pelvis ~ 2.5 Kg

31	Stage of Fertilization and the development of the Embryo – 2 times life size	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i>
		<p>The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity</p> <ul style="list-style-type: none"> • Schematic illustrations should show how an ovum matures, how ovulation and fertilization occur and how the fertilized ovum develops to the point of embedding itself in the womb wall to begin growth into an embryo. • The various stages should show in larger than life model from in an ovary, fallopian tube and womb. • Weight ~ 1.5 Kg
32	Embryonic Development model in 12 stages	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>

		<p>Warranty <i>(Please specify)</i></p> <p>The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity</p> <ul style="list-style-type: none"> • The model should represent the development of the human germ cells from fertilization until the end of the second month of pregnancy in 12 stages. • Each stage can be removed from the common stand as an individual part and can be purposefully used for teaching and tests for the embryological specialist field. • Weight ~ 1.5 Kg
33	Manikin	<p>Brand Name <i>(Please specify)</i></p> <p>Model <i>(Please specify)</i></p> <p>Country of Origin <i>(Please specify)</i></p> <p>Country of Manufacture <i>(Please specify)</i></p> <p>Product Brochure <i>(Please specify)</i></p> <p>Manufacture Authorization & ISO <i>(Please specify)</i></p> <p>Warranty <i>(Please specify)</i></p> <p>The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity</p> <ul style="list-style-type: none"> • Made of durable, unbreakable, water resistant plastic • Flexible natural movement of arm, legs and joints • Internal organs must be removable and fitted with drainage seals for easy cleaning bladder and intestinal sections must be water tight. Catheterization must be possible

CATEGORY 07 – HISTOLOGY LABORATORY EQUIPMENT

Item No.	Description of Goods or related services	Qty and unit
01	Rotary Microtome with Disposable blades	01
02	Automatic Tissue processor	01
03	Disposable embedding cassettes 50,000/pack	01
04	Thermometers	10
05	Fume Cupboard	01
06	Embedding Station	01
07	Water Bath (Floating water bath)	01
08	Oven (Oven for Histology)	01

TECHNICAL SPECIFICATIONS

Item Number	Item Name	Listed Specification*
01	Rotory Microtome with Disposable Blades	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i> The equipment shall be warranted for a period of not less than 24 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity
		<ul style="list-style-type: none"> • The unit should provide facilities for accurate specimen sectioning with following features.
		<ul style="list-style-type: none"> • (I). Three - Axis specimen orientation of X- and Y-axes universal 8°, Z-axis up to 360°
		<ul style="list-style-type: none"> • (II). Specimen retraction - Retraction during return travel of 60 µm, with the disengage able facility to make safe sectioning of small biopsies.
		<ul style="list-style-type: none"> • (III). Specimen trimming feature – should be in the range of 1 – 60 µm with the facility to directly select 10µm / 30µm thickness.
<ul style="list-style-type: none"> • A sliding cover should be available to prevent debris getting inside the instrument. 		
<ul style="list-style-type: none"> • A universal cassette clamp should be available. 		

		<ul style="list-style-type: none"> • Parameters
		<ul style="list-style-type: none"> • There shall be section thickness range of 0.5 - 60µm
		<ul style="list-style-type: none"> • The Rotary Microtome shall be capable of following section Thickness with selected increments. <ul style="list-style-type: none"> i. 0.5 µm for 0.5 - 2 µm ii. 1 µm for 2 - 10 µm iii. 2 µm for 10 - 20 µm iv. 5 µm for 20 - 60 µm
		<ul style="list-style-type: none"> • The System should have a blade holder which should be able to accommodate both High Profile & Low-profile blades with the same, without changing blade holder time to time.
		<ul style="list-style-type: none"> • The horizontal feed of the unit shall be of minimum 25 mm horizontally (East/West).
		<ul style="list-style-type: none"> • Vertical specimen stroke length should be 64 mm.
		<ul style="list-style-type: none"> • System should have Electronic section counters of four-digit LC-display with reset & specimen backward, forward Limit alarm.
		<ul style="list-style-type: none"> • There should be a provision to connect or upgrade to a cool cut specimen & cool cut specimen transfer system for quality sectioning & to avoid the wrinkle/ribbon sectioning.
		<ul style="list-style-type: none"> • Each unit must supply with following accessories as standard. <ul style="list-style-type: none"> i. A Blade holder for both high and low profile. ii. High profile blades 100 Nos. iii. Low profile blades 100 Nos. iv. Microtome oil v. Waste tray vi. Brushers vii. Dust cover
		<ul style="list-style-type: none"> • Each unit shall be supplied with one set of operation manual and service manual
		<ul style="list-style-type: none"> • Bidder shall furnish the documentary evidence to meet the following financial requirement. <ul style="list-style-type: none"> a. Annual Turnover not less than Rs. 100 million ii. Net profit shall not be negative for the last three years

		<ul style="list-style-type: none"> • Bidder shall furnish the documentary evidence to demonstrate that it meets the following experience requirement. <ul style="list-style-type: none"> a. At least four full time technicians shall be available. (Minimum of two technician trained by manufacturer) b. Fully equipped workshop facility shall be available with all tool & equipment required to maintain the machine. • At least five years' experience in supplying and maintaining medical equipment. • Bidder shall furnish the documentary evidence to demonstrate that the good it offers meet the following usage requirement. <ul style="list-style-type: none"> a. ISO, CE certificate for good manufacturing practice b. Availability of the brand in Government hospitals. • Availability of spare parts, consumables and reagent ex-stock. • The equipment shall be warranted for a period of not less than 12 calendar months from the date of delivery. Services on full "part &labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity. Tenders must specify in detail, the means available to them to implement such a warranty. • Should quote for post warranty service and maintenance charges inclusive of full parts and labour basis for five years on annual basis. • IMPORTANT • Your offer must address specifically and individually the specifications given • Above by providing original printed, illustrated technical literature to substantiate conformity with the same.
02	Automatic Tissue Processor	Brand Name <i>(Please specify)</i> Model <i>(Please specify)</i> Country of Origin <i>(Please specify)</i> Country of Manufacture <i>(Please specify)</i>

		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i>
		<p>The equipment shall be warranted for a period of not less than 24 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity</p>
		<ul style="list-style-type: none"> • The unit shall operate on power supply of 230V + 10%, 50Hz.
		<ul style="list-style-type: none"> • Tissue Processor shall be a "double load" type.
		<ul style="list-style-type: none"> • It shall comprise with the following:
		<ul style="list-style-type: none"> • The instrument needs to have unbreakable plastic beakers of 1.5 L or more capacity and two insulated wax bath. The temperature of wax bath should be able to adjusted from 50-70°C
		<ul style="list-style-type: none"> • The system should be equipped with charcoal-enhanced ventilation for operator and environmental safety.
		<ul style="list-style-type: none"> • The basket or basket carrier should have at least 110 cassette capacity with single load type and it should be able to deliver at least 200 cassettes capacity with the double load type.
		<ul style="list-style-type: none"> • The system should have selectable spin speed.
		<ul style="list-style-type: none"> • The system should have the capability to store 10 programs.
		<ul style="list-style-type: none"> • Programmable immersion time in each station should be adjustable from 1 minute to 99 hours
		<ul style="list-style-type: none"> • Instrument should have immediate and delayed-start processing modes.
		<ul style="list-style-type: none"> • The system should have cassette baskets which can spin counterclockwise and clockwise within reagent container to improve processing.
		<ul style="list-style-type: none"> • The system need to have automatic safety devices, For loading system, For agitator motor, current failure and final stay at the end of a program.
		<ul style="list-style-type: none"> • The System should be able to monitor the usage of Carbon/charcoal filter and notify to operator the replacement requirement.
		<ul style="list-style-type: none"> • Unit price and replacement frequency of the filter to be mentioned in the offer clearly and it would be calculated and considered for the 5years life cycle cost analysis in the evaluation.

	<ul style="list-style-type: none"> • The system should have the ability to activate final wax bath enhanced wax infiltration.
	<ul style="list-style-type: none"> • The system should need to supply with a battery back up in case of power failure.
	<ul style="list-style-type: none"> • The offer shall include cost of consumables to be used with a unit.
	<ul style="list-style-type: none"> • The unit cost of all the available accessories and fittings shall be quoted together with a set of fast moving spares.
	<ul style="list-style-type: none"> • The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "parts and labour" basis. Such a warranty shall also include servicing and maintenance during the period of validity. Tenderers must specify in detail the means available to them to implement such a warranty.
	<ul style="list-style-type: none"> • IMPORTANT
	<ul style="list-style-type: none"> • Bidder shall furnish the documentary evidence to meet the following financial requirement. <ul style="list-style-type: none"> a. Annual Turnover not less than Rs. 100 million b. Net profit shall not be negative for the last three years
	<ul style="list-style-type: none"> • Bidder shall furnish the documentary evidence to demonstrate that it meets the following experience requirement. <ul style="list-style-type: none"> a. At least four full time technicians shall be available. (Minimum of two technician trained by manufacturer) b. Fully equipped workshop facility shall be available with all tool & equipment required to maintain the machine. c. At least five years' experience in supplying and maintaining medical equipment.
	<ul style="list-style-type: none"> • Bidder shall furnish the documentary evidence to demonstrate that the good it offers meet the following usage requirement. <ul style="list-style-type: none"> a. ISO, CE certificate for good manufacturing practice b. Availability of the brand in Government hospitals. c. Availability of spare parts, consumables and reagent ex-stock.
	<ul style="list-style-type: none"> • Your offer must address specifically and individually the specifications given

		<ul style="list-style-type: none"> Above by providing original printed, illustrated technical literature to substantiate conformity with the same
03	Disposable Embedding Cassettes 50,000/pack	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		<ul style="list-style-type: none"> Disposable Embedding Cassettes 50, 000/pack
04	Thermometers	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>

		<p>Warranty <i>(Please specify)</i></p> <p>The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity</p> <ul style="list-style-type: none"> • Thermometers should be in 0-150 °C and 0- 200 °C ranges
05	Fume Cupboard	<p>Brand Name <i>(Please specify)</i></p> <p>Model <i>(Please specify)</i></p> <p>Country of Origin <i>(Please specify)</i></p> <p>Country of Manufacture <i>(Please specify)</i></p> <p>Product Brochure <i>(Please specify)</i></p> <p>Manufacture Authorization & ISO <i>(Please specify)</i></p> <p>Warranty <i>(Please specify)</i></p> <p>The equipment shall be warranted for a period of not less than 24 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity</p> <ul style="list-style-type: none"> • Dimension: 1500 *900 *2400 mm with base storage cabinet (L *D *H) approx • Fume cupboard exterior should made from galvanized steel with chemical resistant epoxy powder coating • Double walled construction for more aerodynamic inner chamber • Worktop should be epoxy resin with marine edge and fully Phenolic Resin inner lined interior. • Exhaust system with minimum exhaust volume of 1000CMH at 0.5m sash opening

		<ul style="list-style-type: none"> • Should have external light box to prevent any corrosion and turbulence • Counterbalanced poly carbonate front sash with 6mm thickness • System should have 1 No remote-control water supply with Polypropylene sink and Polypropylene bottle trap to prevent any solid material blocking the waste line • System should have 1 No remote-control gas tap (suitable for LPG) • Should have 2 nos power receptacle to provide power supply for any instrument used within fume hood • fume hoods Should comply with ASHRAE 110-95 safety standard or better • Letter of authority from the manufacturer. • After sales service details including work shop facilities and technician's details should be attached. • supplier should process minimum 5 years experience in supply and installation of fumehoods specially for high corrosive environment. (Acid digestion) • "Documentary evidence of requested specifications should be provided by marking on manufacturer's literature." • Installation should be carried by the supplier using UV resistant PVC pipe minimum of 225mm diameter with volume control damper and non-return damper
06	Embedding Station	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>

		<p>Warranty (<i>Please specify</i>)</p> <p>The equipment shall be warranted for a period of not less than 24 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity</p> <ul style="list-style-type: none"> • The system shall operate on the power supply of 240 + 10%, 50 Hz. • The system should have 2 separate sections/ consoles for embedding & cold plate with large, easy-to-read touch screen display allows quick access to the temperature controls and other parameters. • The consoles should have identical height working surface, so that the transfer of specimen from one console to other is easy. • Thermal console & chamber should have the operating temperature from 50 to 70°C. • System should have different sizes of heated holders for forceps with right & left-hand operation. • The system should have at least 5L Paraffin chamber capacity to save time to refill. Also, it should with over temperature protector. • Flow rate of the Volume adjustable dispensing system should be 2-6g/s • The system should be supplied with built-in tray for report storage. • The system should have the facility to collect waste wax by waste wax tray & it should be easy to discard as an operator safely. • The system should be incorporated with an adjustable paraffin dispenser paddle to accommodate even large, medium & small mold if required. • Intensity adjustable LED lighting should provide 5 levels of illumination for both the specimen & accessory areas. • The system should facilitate with heated wax trimmer built directly into the work space. • The unit should be able to hold at least 200 processing cassettes capacity at the storage compartment.
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		<ul style="list-style-type: none"> • The cryo console unit should include with following features; <ul style="list-style-type: none"> i. Ability to -adjustable cold plate temperature from - 5° C to -12° C to reduce the occurrence of cracked blocks. ii. Should be able to hold at least 70 embedded blocks at a time.
		<ul style="list-style-type: none"> • Should be consist with separate tray for melted water collection when machine is switched off.
		<ul style="list-style-type: none"> • The quotation shall include separately the cost of fast moving spares.
		<ul style="list-style-type: none"> • Each unit shall be supplied with one set of operation manual and service manual
		<ul style="list-style-type: none"> • The equipment shall be warranted for a period of not less than 12 calendar months from the date of delivery. Services on full "part &labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity. Tenders must specify in detail, the means available to them to implement such a warranty.
		<ul style="list-style-type: none"> • Should quote for post warranty service and maintenance charges inclusive of full parts and labour basis for five years on annual basis.
		<ul style="list-style-type: none"> • IMPORTANT
		<ul style="list-style-type: none"> • Your offer must address specifically and individually the specifications given
		<ul style="list-style-type: none"> • Above by providing original printed, illustrated technical literature to substantiate conformity with the same.
		<ul style="list-style-type: none"> • Bidder shall furnish the documentary evidence to meet the following financial requirement. <ul style="list-style-type: none"> a. Annual Turnover not less than Rs. 100 million
		<ul style="list-style-type: none"> • Net profit shall not be negative for the last three years
		<ul style="list-style-type: none"> • Bidder shall furnish the documentary evidence to demonstrate that it meets the following experience requirement. <ul style="list-style-type: none"> a. At least four full time technicians shall be available. (Minimum of two technician trained by manufacturer) b. Fully equipped workshop facility shall be available with all tool & equipment required to maintain the machine.
		<ul style="list-style-type: none"> • At least five years' experience in supplying and maintaining medical equipment.

		<ul style="list-style-type: none"> • Bidder shall furnish the documentary evidence to demonstrate that the good it offers meet the following usage requirement. <ul style="list-style-type: none"> a. ISO, CE certificate for good manufacturing practice b. Availability of the brand in Government hospitals. c. Availability of spare parts, consumables and reagent ex-stock.
07	Water Bath (Floating Water Bath)	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i>
		The equipment shall be warranted for a period of not less than 24 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity
		<ul style="list-style-type: none"> • The unit shall operate on power supply of 230 +10 %, 50 Hz, with safety features including a power indicator when the element is ON.
		<ul style="list-style-type: none"> • The unit shall work in the range 40 °C to 90°C with a minimum accuracy of +1 °C • The unit shall incorporate a Digital temperature control with a bright & Clear display • The Bowl shall be of Matt Black Polytetrafluoroethylene coating to provide visual contrast against wax sections & made of durable stainless steel.

		<ul style="list-style-type: none"> • The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "parts and labour" basis. Such a warranty shall also include servicing and maintenance during the period of validity. Tenderers must specify in detail the means available to them to implement such a warranty. • Bidder shall furnish the documentary evidence to meet the following financial requirement. <ul style="list-style-type: none"> a. Annual Turnover not less than Rs. 25 million b. Net profit shall not be negative for the last three years • Bidder shall furnish the documentary evidence to demonstrate that it meets the following experience requirement. <ul style="list-style-type: none"> a. At least four full time technicians shall be available. (Minimum of two technician trained by manufacturer) b. Fully equipped workshop facility shall be available with all tool & equipment required to maintain the machine. c. At least five years' experience in supplying and maintaining medical equipment. • Bidder shall furnish the documentary evidence to demonstrate that the good it offers meet the following usage requirement. <ul style="list-style-type: none"> a. ISO, CE certificate for good manufacturing practice b. Availability of the brand in Government hospitals. c. Availability of spare parts, consumables and reagent ex-stock.
08	Disposable Embedding Cassettes Histology Laboratory oven	Brand Name <i>(Please specify)</i> <hr/> Model <i>(Please specify)</i> <hr/> Country of Origin <i>(Please specify)</i> <hr/> Country of Manufacture <i>(Please specify)</i> <hr/> Product Brochure <i>(Please specify)</i>

		<p>Manufacture Authorization & ISO <i>(Please specify)</i></p>
		<p>Warranty <i>(Please specify)</i></p>
		<p>The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity</p>
		<ul style="list-style-type: none"> • The unit shall operate on power supply of 230 +10 %, 50 Hz
		<ul style="list-style-type: none"> • The unit shall be thermostatically controlled and designed with a large capacity surface to quickly evaporate water from slides and solvents used in mounting media.
		<ul style="list-style-type: none"> • The unit shall incorporate a digital control panel to enable the user to select an operating temperature in the range of 40o to 90oC.
		<ul style="list-style-type: none"> • Slides rest should be above the surface of the Hotplate and there should be moveable support rails to allow air passing underneath slides.
		<ul style="list-style-type: none"> • The top of the hotplate should have a matt-black epoxy coating providing visual contrast against the wax sections. The lower casing should be finished in an epoxy coating.
		<ul style="list-style-type: none"> • The unit shall have the following <ol style="list-style-type: none"> 1. A thermal safety cut-out indicator 2. A mains rocker switch
		<ul style="list-style-type: none"> • Dimensions should be approx. (D x W x H): 50 x 16.8 x 7.9cm to accommodate not less than 37 slides.
		<ul style="list-style-type: none"> • The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "parts and labour" basis. Such a warranty shall also include servicing and maintenance during the period of validity. Tenderers must specify in detail the means available to them to implement such a warranty.

	Slide forceps 1 set	<p>Brand Name (Please specify) Model (Please specify) Country of Origin (Please specify) Country of Manufacture (Please specify) Product Brochure (Please specify) Manufacture Authorization & ISO (Please specify) Warranty (Please specify)</p> <p>The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part &labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity</p> <ul style="list-style-type: none"> • (S/S) 6mm , 12 mm Pointed & blunt)
	Scalpels 10,000/pack	<p>Brand Name (Please specify) Model (Please specify) Country of Origin (Please specify) Country of Manufacture (Please specify) Product Brochure (Please specify) Manufacture Authorization & ISO (Please specify) Warranty (Please specify)</p> <p>The equipment shall be warranted for a period of not less than 12 calendar months from the date of successful commissioning on full "part &labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity</p> <p>Handle No. 4 & 24 Scalpel blades for above10,000/pack each</p>

CATEGORY 08 - MICROSCOPES

Item No.	Description of Goods or related services	Qty and unit
01	Trinocular Microscope with Camera	02
02	Binocular Microscope	20
03	X-ray Illuminator	02

TECHNICAL SPECIFICATIONS

Item Number	Item Name	Listed Specification*
01	Trinocular Microscope with Camera	Brand Name <i>(Please specify)</i>
		Model <i>(Please specify)</i>
		Country of Origin <i>(Please specify)</i>
		Country of Manufacture <i>(Please specify)</i>
		Product Brochure <i>(Please specify)</i>
		Manufacture Authorization & ISO <i>(Please specify)</i>
		Warranty <i>(Please specify)</i> The equipment shall be warranted for a period of not less than 24 calendar months from the date of successful commissioning on full "part & labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity
		Trinocular tube
		<ul style="list-style-type: none"> • An ergonomically designed trinocular tube in 30° or lower inclination with the light path distribution of 50:50 for eyepieces and camera.
		<ul style="list-style-type: none"> • The binocular tube shall have wide interpupillary distance adjustments approximately 55-75 mm for comfortable viewing
Eyepieces		

	<ul style="list-style-type: none"> • Eyepieces with 10x magnification, field of view 20mm suitable for spectacle wearers with front soft rubber cup. • Focusable both eyepieces are with ± 5 diopter adjustment for fatigue free observation.
	Nosepiece
	<ul style="list-style-type: none"> • The nose piece should be back tilted 5x revolving objective nosepiece and mounted on precision ball bearing mechanism with click stops for reproducible para-centricity of fields in all magnifications.
	Objectives
	<ul style="list-style-type: none"> • The microscope should be offered Objectives with infinity colour contrast corrected optics. The magnification / numerical aperture of the objectives should be: 5x/0.12, 10x/0.25, 40x/0.65 and 100x/1.25 oil. • 10X shall be Phase contrast objectives. • 20X and 40X shall be dedicated objectives for fluorescent microscopy and supplier confirmation need to be provided.
	Condenser
	<ul style="list-style-type: none"> • Abbe condenser 0.9/1.25 with built-in aperture diaphragm, Phase contrast and Dark field. • Vertical adjustment facility and centering screws for the Abbe condenser (100% Koehler setting) should be available to obtain well resolved image.
	Stage and Focusing
	<ul style="list-style-type: none"> • The stage should be ball bearing mounted X-Y mechanical with low positioned ergonomic co-axial knobs, right handed, with scanning area of 75x30 mm.

		Illumination
		<ul style="list-style-type: none"> The illumination for transmitted light should be with Koehler illumination technique with high power 12V/35W Halogen illumination for high demanding illumination needs with built-in power supply unit for mains connection to 220V, 50Hz.
		<ul style="list-style-type: none"> The illumination should have a facility to use 3W LED (day light or warm light) with the same system.
		Fluorescent
		<ul style="list-style-type: none"> Microscope shall be provided LEDfluorescence for FITC. This is to obtained the benefit low maintenance cost and reduce the time gap between heating and cooling gap.
		General requirements
		<ul style="list-style-type: none"> The offer shall address specifically and individually the specification by providing original printed, illustrated technical literature to substantiate conformity the same.
		<ul style="list-style-type: none"> The unit shall be warranted for a period of 12 calendar months from the date of successful commissioning from the manufacture. Letter of guarantee that after sales service is available from the local agent.
		<ul style="list-style-type: none"> Tendered shall provide Manufacturers authorization letter.
		<ul style="list-style-type: none"> The unit price for all spare parts and accessories shall be quoted separately. A ten years guarantee letter from manufacturer on availability of spare parts shall be supplied.
		Camera & Software
		<ul style="list-style-type: none"> System should supply 5 mega pixel or better CCD scientific color camera and the camera adapter from the microscope manufacturer (same Brand) for proper compatibility.

		<ul style="list-style-type: none"> • The camera operating software should be supplied from the microscope manufacturer and should have live image display capability through software.. • Software should be capable of Interactive measurement: length, contour-based measurement data (area, box, perimeter, gray values), angle and should also be able to do the text annotations in the captured image. • Software should have facility to acquire images, edit CZI files and export into various formats • Suitable Computer, UPS and LED monitor shall be quoted optionally
02	Binocular Microscopes	<p>Brand Name <i>(Please specify)</i></p> <p>Model <i>(Please specify)</i></p> <p>Country of Origin <i>(Please specify)</i></p> <p>Country of Manufacture <i>(Please specify)</i></p> <p>Product Brochure <i>(Please specify)</i></p> <p>Manufacture Authorization & ISO <i>(Please specify)</i></p> <p>Warranty <i>(Please specify)</i></p> <p>The equipment shall be warranted for a period of not less than 24 calendar months from the date of successful commissioning on full "part &labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity</p> <ul style="list-style-type: none"> • The unit shall be binocular type inclined maximum at 30o for ergonomic viewing with Sidentopf design swiveling eyepiece tube

		<ul style="list-style-type: none"> • Should have facility to adjust in to different veiwing height for same observer while observing for relaxation of neck.
		<ul style="list-style-type: none"> • Microscope should be made of maximum metallic parts with less plastic materials and less sharp edges for robustness, durability and ergonomics
		<ul style="list-style-type: none"> • The unit shall be easily portable with carrying handle integrated into the microscope body.
		<ul style="list-style-type: none"> • A quadraple click stop with ball and socket revolving nosepiece with an backward tilt preventing accedental damage to objectives and for facilitation of the easy identifying the working objective magnification.
		<ul style="list-style-type: none"> • Four Plan Acromatic Objectives of 4x/0.1, 10x/0.25, 40x/0.65 and Oil immersion objective of appoximately 100x/1.25.
		<ul style="list-style-type: none"> • All its optical lenses with infinity and color corrected optics.
		<ul style="list-style-type: none"> • Paired wide field focusable eye pieces (10x) shall also be supplied with each unit.
		<ul style="list-style-type: none"> • Both eyepieces should be equipped with diopter adjustment and suitable for insert graticule and spectacle wearers.
		<ul style="list-style-type: none"> • Eye pieces should be secured with set screws against unauthorized removal, objectives fixed to the nosepiece to prevent removal and possible fungus infection within the tubes. (Special tools shall be provided for removal.)
		<ul style="list-style-type: none"> • The unit shall have wide interpupiliary distance adjustments approximately 48-75 mm for comfortable veiwing by students.
		<ul style="list-style-type: none"> • The image of the field of view should be approximately 18 mm.
		<ul style="list-style-type: none"> • The unit shall have anti-fungal coated optical lenses. Certificate should be attached.
		<ul style="list-style-type: none"> • The condenser shall be Abbe type of NA 1.25 approximately and filter holder and the unit shall be supplied with three (Blue, Yellow, Green) filters according to the WHO standards
		<ul style="list-style-type: none"> • There should be a tension adjustment ring for course adjustment.
		<ul style="list-style-type: none"> • Stage size shall be not less than 140 x 130 mm. Movement range of the stage shall be approx 75 mm(x-direction)X30 mm (Y-direction).
		<ul style="list-style-type: none"> • X,Y,Z movements of the satge shall be able to handle single handedly
		<ul style="list-style-type: none"> • Scale gradation shall be white lettering on a blackground for better visibility.
		<ul style="list-style-type: none"> • There shall be an modular type white light HAL illumination facility(30W/6V) which shall operate on mains supply of 230+_ 10%, 50 Hz.

		<ul style="list-style-type: none"> • Same system shall be able to upgrade for LED illumination. With easy change over from HAL to LED. • Single Illumination control facility with integrated on/off switch to increase the life time of the bulb. • Intensity indicator light shall be available either side of microscope for remote detection of intensity of light. • Should have an external power supply unit for easy repair and the prevention of electric shock in case of power leakage. • Different types of adapters should be supplied with the system and that should be compatible for existing power cords in the laboratory. • Microscope should be upgradeable for Phase Contrast, Dark field, LED fluorescence and digital imaging with trinocular phototube. • The offer shall address specifically and individually the specification by providing original printed, illustrated technical literature to substantiate conformity the same. • The unit shall be warranted for a period of 12 calendar months from the date of successful commissioning from the manufacturer. Letter of guarantee that after sales service is available from the local agent. • Tenderer shall provide Manufacturers authorization letter for sale from the manufacturer. • The unit price for all spare parts and accessories shall be quoted separately. A ten-year guarantee letter from manufacturer on availability of spare parts shall be supplied.
03	X-ray Illuminator	Brand Name <i>(Please specify)</i> Model <i>(Please specify)</i> Country of Origin <i>(Please specify)</i> Country of Manufacture <i>(Please specify)</i> Product Brochure <i>(Please specify)</i>

		Manufacture Authorization & ISO <i>(Please specify)</i>
		<p>Warranty <i>(Please specify)</i></p> <p>The equipment shall be warranted for a period of not less than 24 calendar months from the date of successful commissioning on full "part &labour" basis. Such a warranty shall also include servicing and preventive maintenance during the period of validity</p>
		<ul style="list-style-type: none"> • 2 part viewers.(Double)
		<ul style="list-style-type: none"> • Power 220 V, 50/60 HZ
		<ul style="list-style-type: none"> • Fluorescent light