

S/N o	Name of Item	Specification	Qty
1	Fourier Transform Infrared Spectrometer	<p><u>Optical System</u> The spectrometer should be able to record the spectrum of a sample in the wave number region of 7900 - 400 cm^{-1}. The system should be sealed and desiccated. The desiccant canisters must be rechargeable and accessible with no need to open the spectrometer. The system must have a humidity indicator. Spectrometer must provide a 10 years warranty on the interferometer, laser, and source. Desiccant, power supply, sample compartment windows, infrared source must be user replaceable without opening the cover.</p> <p><u>Interferometer</u> Interferometer must be a with dynamic alignment to provide high spectral resolution and compensate for tilt, shear, temperature effects, and vibrations that alter line shapes and negatively impact spectral results.</p> <p><u>Optics:</u> Diamond turned or equivalent</p> <p><u>Spectral Resolution:</u> 0.55cm^{-1} spectral resolution or better</p> <p><u>Signal to Noise Ratio:</u> better than 34,000:1 (peak-to-peak, one minute)</p> <p><u>Wave Number Precision:</u> better than 0.001 cm^{-1} at 2,000 cm^{-1}</p> <p><u>Wave number accuracy:</u> better than 0.05 cm^{-1} at 2,000 cm^{-1}</p> <p><u>Ordinate Linearity:</u> <0.15 %T</p> <p><u>Detector:</u> deuterated triglycine sulfate (DTGS) detector/DLaTGS</p> <p><u>Source:</u> Spectrometer must have a non-migrating hotspot single-point source with a 5-year warranty.</p> <p><u>Laser:</u> Solid-state, temperature-controlled diode laser with long lifetime with a 5-year warranty</p> <p><u>Real time feedback:</u> The system must have integrated LightBar that provides real-time instrument feedback and visual pass/fail indications of sample quality. The System should be able to collect background while instrument is idle.</p> <p><u>Instrument calibration/ performance verification</u> The system must be provided with internal NIST-traceable 1.5 MIL (38 microns) polystyrene film and should be able to carry out Automated performance verification tests (ASTM E1421)</p> <p><u>Transmission analysis:</u> Transmission accessory must be quoted for solid sample analysis.</p> <p><u>ATR:</u> ATR accessory should include monolithic Diamond ATR crystal with optical base. Both Diamond ATR crystal and optical base must be provided with at least 5 years of warranty.</p> <p><u>Software:</u> Instrument should have Mechanism to automatic atmospheric suppression to remove moisture and CO₂ interferences Advanced data processing options like baseline correction, peak area, peak height measurements, smoothing, spectral</p>	1

		<p>comparison etc. must be available. Software should have tools for Quantification method development using Beers' law, PLS, CLS etc</p> <p>Additional Software should be provided for multi-component search of mixture samples and should have IR interpretation tools.</p> <p><u>Library:</u></p> <p>FTIR spectral libraries must be available with at least 30000 spectra. It should include spectra of organic and inorganic compounds with the below mentioned: -</p> <ul style="list-style-type: none"> • Georgia State Crime Lab Drug • Polymer Additives and Plasticizers Library • Hummel Polymer and Additives Library • Common Materials & White Powders Library • Polymer and Plasticizer by ATR Library • Comprehensive Forensic Library • Inorganics Library • Nicolet Vapor Phase Library. <p><u>Other requirement:</u></p> <p>Branded Desktop PC & Suitable UPS</p> <ul style="list-style-type: none"> ➤ Data System, Mini PC ➤ Specifications: ➤ "Intel" processor, 3GHz or better ➤ 4GB RAM ➤ 500GB HDD or better ➤ CD/DVD writer ➤ 21.5" TFT display ➤ USB 3.0, RJ-45 Network (1 + 1 USB-Ethernet Adapter), DisplayPort ➤ Operating System: Windows 10 Enterprise <p>2 KVA online UPS System with 30 minutes back up.</p> <p><u>Warranty:</u></p> <p>12 Months from the date of installation or 15 months from the date of shipment whichever is earlier. Any part found defective during the warranty period should be replaced free of cost.</p>	
2	<p>Non-Refrigerated Centrifuge</p>	<p>Accelerate microcentrifuge tube sample preparation processes up to 21,100xg with the microcentrifuge. It should have extensive microcentrifuge rotor selection options to provide productivity, versatility, safety and convenience in a compact, easy-to-use lab instrument. It should Support micro-volume separation with:</p> <ul style="list-style-type: none"> • Acceleration of up to 21,000 x g in as little as 12 seconds. • Option to Choose from 7 optional microcentrifuge rotors to find the ideal fit for application: • Outstanding corrosion resistance with lightweight engineered polymer rotors. • Standard rotor to run 24 microcentrifuge tubes in a single row, from 1.5 to 2.0 Ml tubes to mini-preps and spin columns. • Ergonomic one-click rotor opening and closing, as well as transparent design for added safety and convenience with ClickSeal biocontainment lids. • Should eliminate the need for adapters with unique 	1

		<ul style="list-style-type: none"> • dual row rotor. • To simplify operation with intuitive controls, easy-to-read displays and fast one-click centrifuge lid closure. • Should Conform to the latest clinical and safety standards, including 98/79/EC In Vitro Diagnostic Directive. • Capacity: 24 x 1.5/2 mL • Max. Speed: 14,800 rpm • Max. RCF: 21,100 x g • Noise Level: 56 dB(A) • Temperature Range: Ambient temperature • Certifications/Compliance: CSA, CE, IVD • Type: Benchtop Centrifuge • Includes: 24 x 1.5/2.0mL rotor with ClickSeal biocontainment lid • Electrical Requirements: 230 V 50/60 Hz • Refrigerated: No • Run Time: 1 to 99 min. (1 min.increments); HOLD • Standards: IEC 61010-1, IEC 61010-2-020 (refer to manual for more details) • Rotor: 24 x 1.5/2 mL Rotor with Clickseal Biocontainment Lid • Dimensions (HWD): 8.9 x 9.6 x 13.8 in.(22.5 x 24.3 x 35.2 cm) • Net Weight: 23.1lb. (10.5 kg) • Frequency: 50/60 Hz • Voltage: 230 V <p>Warranty: 12 Months from the date of installation or 15 months from the date of shipment whichever is earlier. Any part found defective during the warranty period should be replaced free of cost.</p>	
3	<p>Fully Automatic Autoclave</p>	<ul style="list-style-type: none"> • Operation Mode Fully automatic (Digital Controller with Automatic Pressure Release Valve) • Capacity: 35ltrs, Vertical • Inner Dimension (Dia. x Length): 12X20 inch (300X500 mm) • Watt:2KW • Construction: Double Walled • Inner Chamber: Stainless steel 304 • Outer Chamber: Stainless steel 304 • LID: Stainless steel 304 • Ring & Stand: Stainless steel 304 • Door Locking: Radial locking mechanism w/ foot pedal • Door gasket: High temperature silicone rubber gasket • Heating element: Immersion heating element • Timer: Mechanical timer 0-60 min • Pressure: Up to 25 psi • Temperature range: 100°C to 126°C • Pressure display: Dial type pressure gauge • Steam release: Manual steam release after sterilization • Release valve: Open / close type manual valve • Safety features <ul style="list-style-type: none"> ▪ Spring loading pressure safety valve ▪ Automatic pressure control switch ▪ Vacuum breaker valve 	2

		<ul style="list-style-type: none"> • Power supply: 220 Volts 50Hz • Basket: Stainless steel Wire basket <p><u>Fittings</u></p> <ul style="list-style-type: none"> • Water level indicator glass type • Water drain valve • Low water level safety cut-off • Automatic steam release w/ advanced controller & timer supported with solenoid release valve <p><u>Warranty:</u> 12 Months from the date of installation or 15 months from the date of shipment whichever is earlier. Any part found defective during the warranty period should be replaced free of cost.</p>	
4	Sonicator System	<ul style="list-style-type: none"> • Controller: Microcontroller Based • Technology: Latest IGBT Based • Display: 6-digit Large LED Display for time & temperature • Timer: 99 minutes and 59 seconds • Transducers: PZT sandwich type, bonded at the base of SS tank. • Transducer Frequency: 33 ± 3 KHz (40 KHz will be available optionally) • Frequency Display: Yes • Temperature Range: 5°C above ambient to 80°C • Type of Heater: Silicon / Cartridge • Heater Power: Upto 1000 watts • Auto Degassing: Yes, user adjustable time • Unit & Tank MOC: Stainless Steel • Drain Valve: ½” Ball Valve will be provided to clean the tank. (6.5 Liters & Above) • Power Supply: 230VAC ± 10%, 50Hz • Tank Capacity Liter: 10 • Tank Size (L X W X H): 300 X 228 X 150 mm.(12" X 9" X 6") • Basket Size (L X W X H): 270 X 190 X 100 mm • Ultrasonic Power Watts: 240 <p><u>Warranty:</u> 12 Months from the date of installation or 15 months from the date of shipment whichever is earlier. Any part found defective during the warranty period should be replaced free of cost.</p>	1

<p style="text-align: center;">5</p>	<p style="text-align: center;">Stereo Microscope System With Camera:</p>	<p>Type of Microscope: Stereo microscope, Greenough design</p> <ul style="list-style-type: none"> • Design Principle: Two zoom systems, tilted by the stereo angle • Stereoscopic View: Three-dimensional observation through eyepieces <p>Optical Data Basic System (Eyepieces 10×, No Front Optics)</p> <ul style="list-style-type: none"> • Magnification Range: 8× – 40× • Free Working Distance: 110 mm • Maximum Resolution: 200 Lp/mm – 2.5 μm • Maximum Object Field Diameter: 29 mm <p>Optical Data with Interchangeable Optics (Eyepieces, Front Optics)</p> <ul style="list-style-type: none"> • Accessible Magnification Range 4× – 200× • Free Working Distances 43 – 185 mm • Maximum Resolution 400 Lp/mm – 1.25 μm • Maximum Object Field Diameter 58 mm <p>Microscope Bodies</p> <ul style="list-style-type: none"> • Manual Zoom, Zoom Range 5:1 (0.8× - 4.0×) • Quality of Zoom Optics Low distortion, crisp in contrast • Parfocality of Zoom Optics : Object remains focused while zooming • Viewing Angle 45° • Adjustment of Interocular Distance 55 - 75 mm • Zoom Click Stops Five positions: 0.8×, 1×, 2×, 3×, 4× • Maximum Field Number 23 mm • Integrated near Vertical LED Illumination Integrated in microscope body, powered by stands H EDU/LAB/MAT or controller K LED, illumination angle 10° towards optical axis • Documentation Features Stemi 305 trinoPhotoport with 50% split to the left, integrated camera adapter 0.5×, c-mount interface • Documentation Features Stemi 305 cam Integrated 4 Megapixel Wi-Fi/Ethernet camera, wireless or wired transmission of image signal* Interfaces (*For Stemi 305 cam W body, please ask your local contact for approval in your country. For Stemi 305 cam E body, it can be sold worldwide.) • Front Optics and Polarization Analyzer M52 • Eyepieces d = 30 mm • Stemi Mounts d = 76 mm • Illuminators d = 66 mm • Each Microscope Body incl. Eyepieces 10×/23 Br. Foc and Spiral Cable RJ12 <p>Stand:</p> <ul style="list-style-type: none"> • Working surface D195xW160 mm • Built-in LED transillumination brightfield/darkfield • Separate RL/TL controls for on/off/ and intensity control • Glass plate and Dust cover • Double spot LED Illumination <p>Camera</p> <p>Color camera 8 Megapixels or better, pixel count – 3840*2160, exposure range of 0.06 ms to 1 s with a frame rate of 30 fps with a passive cooling system with pixel size of 1.80um x1.80 um or better. And should have interfaces – HDMI, USB 3.0 Type C , Ethernet ,</p>	<p style="text-align: center;">1</p>
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