

Lab Equipments

S/N	EquipmentsName	Quantity	Specifications / Grade (or equivalent)
1	Water Bath	7	(temperatures range 30°C to 80°C); CSA and TUV approved; Minimum Height:5 inches; Width:7.5 inches; Depth: 8.75"
2	Microscope	1	BK-1301 or equivalent
3	Microscope	1	Microscope M70003D
4	Training Microscope	4	Observation Multi view Binocular Compound Microscope 40X-1600X Magnification, Nosepiece: Quadruple, Mechanical Tube Length: 6-5/16" (160mm), Heads: five binocular anti-mould viewing heads inclined at 45 degree, Interpupillary Distance: 2-3/16" - 3-0" (55 - 75mm), Eyepieces: WF10X, P16X, Achromatic Objectives: 4X, 10X, 40X (spring), 100X (spring, oil), Stage Dimensions: 5-1/2"x 5-1/2" (140x140mm), Stage Traveling Range: 2-3/4"x 1-3/4" (70x45mm) Focusing Range: 1-3/16" (30mm), Division of Fine Focusing: 0.0000787" (0.002mm) Abbe Condenser: NA=1.25 with rack and pinion focusing control Illumination: halogen lamp, 24V/100W Power Supply: 115VAC 60Hz
5	Simple light microscope	10	Magnification: 10x–50x, Lens: Single convex lens, Light Source: Natural or external light, Stage: Basic platform for specimens, Focus: Manual adjustment.
6	Weight Balance	1	Electronic Balance Electronic balance digital top loading, One single block non-breakable, Readability: 0.01gm, Capacity: 3000gm at least, piece counting function built in, overload protection, windows direct function, operated on battery as well as 220 volts adapter included
7	Light microscope	2	Eyepiece: WH10X/22mm and WH25X/9 Objectives: infinity Plan Achromatic objective 4X, 10X, 40X (spring), 100X (spring, oil) Focusing: low position coaxial focus system Mechanical Stage: 7.1"x5.9" (180mm × 150mm) Stage Traveling Range: 3"x 2" (75x50mm) Condenser: N.A. 1.25, swing with iris diaphragm & filter Illumination: Kohler, halogen 12V/20W Power Supply: 85V-230V wide Camera Specifications: Pixel Size: 2.2 Resolution: 5.1MP Compatibility: Windows (32/64 bit) 10, Mac OSX, Linux LED for display
8	Thermocyclers	1	Gradient Thermal Cycler Sample Capacity: 0.2mL tubes: single (96 wells), dual (2 x 48wells) or triple (3 x 32 wells) block Programmable Temperature Range: 4°C to 99.9°C Temperature Accuracy/Uniformity: ±0.5°C/±0.5°C Gradient temperature range: 30°C to 99°C. Temperature of 6-segment blocks can be set independently. Programmable lid temperature Temp. increments/decrements, Time increments /decrements, Password protected programs, Communication: USB and RS232 ports

9	Latium Battery	1	24V 100 Ah battery, LiFePo4 (Lithium Iron phosphate) Cells High energy density, space saving. Life cycle: 5000 or above, Fast charge capability, High Quality Integrated Battery Manage System (BMS) to ensure battery safety and reliability. LED status and alarm indication.
10	Ultra Centrifuges	1	High Speed Mini Centrifuge Maximum speed: 15000rpm, increment: 100rpm Maximum RCF: 15100×g, increment: 100×g Capacity: 12 x 1.5 / 2 ml or more, rotors included Driving Motor: Brushless DC motor. Timer:30 seconds -99 minutes-HOLD, continuous operation, Door interlock; Over-speed detector; Over-temperature detector; Automatic internal diagnosis, Power requirements: Single-phase, 220V, Speed/RCF switch; Pulse operation; Processing display; Fully autoclavable Aluminum alloy rotor with high mechanical strength
11	Electrophoresis System	1	Horizontal Gel Electrophoresis Midi Dimension 27 x 17.5 x 10cm (LxWxH), Silicone rubber,UV Transparent whole unit included lid, easy lid removal, Run up to 40 samples at once complete system with UV Tray 10 x 15 cm, one Comb for 15 samples thickness 1.00 mm and one Comb for 20 samples thickness 1.00 mm with leads and Power Supply
12	Autoclave	2	Vertical Autoclave: Digital microprocessor controlled, sterilization temperature 135C, heating temperature: 45-104C, warming temperature: 45-95C, max operating temperature 0.25Mpa, digital display, Water level sensor, current leakage breaker, lid interlock, over heating prevention, over pressure prevention, over temperature sensor detection, safety valve, timer 1-99h, capacity: 58liters, cooling fans, sterilization curve selection, top open lid operate able with single hand & foot
13	Heating and Magnetic Stirrer (1-Plate)	2	Hot Plate with Magnetic Stirrer 500ml capacity; 1600 stir speed; 250 oC maximum temperature.
14	Incubator	3	Specifications Temperature Range:Ambient +5° to 75°C Temperature Accuracy:±0.25°C Temperature Uniformity:±0.25°C Temperature Increments:+0.1°C Temperature Stability:+0.1°C Timer:1 min. to 48 hours / continuous Chamber Material:Stainless Steel (316) Electrical:120V or 230V, 50-60Hz Power Consumption:40L: 420W / 70L: 520W / 130L: 670W
15	Laminar flow cabinet	2	Laminar Flow Hood LED Digital Display, HEPA filter with efficiency of 99.997% at 0.3 micro, Disposable, non-washable Polyester fiber pre-filter, <3.5 Granule / L for >0.5 µm, <60db noise level, 0.3-0.5 m/s airflow velocity, air speed adjustable, <5 µm vibration level, Fluorescent Lamp, UV Lamp, Light, Tempered glass, no less than 5mm anti UV Front Window ad side panel, Stainless steel Worktable Material, Work Area Size (120cm * 60cm * 60cm (W*D*H)), Main Body and Base Stand Construction of Adopting Cold-roll steel Plate with corrosion-proof coating, Water and Gas Tap, UV, Light, Base Stand, Power Supply: 220V, 50Hz, along with necessary cables and accessories
16	Rotary Shaker	2	Mechanical orbital Shaker 100-350 RPM shaking speed range; 10mm linear action.
17	Vortex Mixer	4	Vortex Mixer Vibrating motion continuously analog or digital dial speed control Electronic speed regulation 0 – 3000 rpm, Vibration orbit 4.5 mm, operating mode: touch, continuous , high stability, Operated on 220V

18	Water distillation apparatus	2	Features: Horizontal thick wall heat resistant Duran glass boiled fitted with 3 KW chromium heater. High efficiency coil condenser ensures low temperature, high output quality distillate of conductivity 3 to 4μs/cm. Compact construction suitable for bench and wall mounting. Screwthread connectors enable easy fitting or removal of hose safety. Built in constant level device with Schott Vendura – Nova valve for drainage provides easy descaling without dismantling. Safety thermostat built into the heater protects the water still in the event of water supply failure and automatically resets when the water supply is restored. Specifications: Capacity: 4litre/hour Power: 220VAC. 50/60Hz
19	Microscope	1	M70003D or equivalent
20	Micropipette set	4	Micropipettes 0.2-2.0uL, 1-10uL, 2-20uL, 20-200uL, 100-1000uL, 1 to 10 ml Graduation: (0.002, 0.02, 0.02, 0.2, 2.0 respectively) Grease-free sealing system Clip-tip ejector for easy dismantling and secure grip
21	Microwave	3	Microwave Oven Capacity: at least 20 Litre Inside clearance of at least 9 inches for flasks. Digital display with digital control
22	Small Centrifuge	1	Mini Centrifuge Max. Speed: 6000rpm; Two easy change, tool-free rotors: Six-place standard rotor for 1.5/2mL tubes, Eight-place strip rotor for two 0.2mL tube strips or 16 single tubes Six 0.2mL and six 0.5mL adapters for customized use Complete unit with rotors

23	Spectrophotometer	2	Multiskan Sky Microplate Spectrophotometer with Touch Screen without Cuvette + μDrop Plate (Note : Multiskan Sky can be use as Photometer, UV / VIS Spectrophotometer & Microplate ELISA Reader with shaking & Incubation. Specifications : Wavelength selection : Monochromator Light source : Xenon flash lamp Wavelength range : 200–1000 nm with 1 nm steps Read-out range : Up to 3 Abs Bandwidth : <2.5 nm Linearity @ 450 nm* : 0–2.5 Abs, 2% Accuracy @ 450 nm* : 1.0% + 0.003 Abs (0–2.0 Abs), 2.0% (2.0–2.5 Abs) Precision @ 450 nm* : SD < 0.003 Abs or CV < 1.0% Plates : 96- and 384-well plates Measurement speed (from A1 back to A1) : 6 seconds with 96-well plate 10 seconds with 384-well plate Plate shaking : Linear Spectral scanning speed : 10 seconds from 200–1000 nm with 1 nm steps Incubation range : From ambient + 2°C to 45°C User interfaces : Stand-alone use: 7 in. touch-screen display PC control: SkanIt software Connections : 1 USB B port for PC 1 Ethernet port 3 USB A ports for devices (USB memory device and Wi-Fi dongle) Dimensions (H x W x D) : 265 x 295 x 445 mm, 10.4 x 11.6 x 17.5 in.
24	Colony Counter		Type: Manual or digital, Display: LED/LCD, up to 999+ counts, Counting Method: Touch-sensitive probe with beep/light signal, Magnification: 1.7x to 3x (optional lens), Illumination: LED or fluorescent backlight, Plate Size: Compatible with 90–100 mm Petri dishes
25	PH measuring device	3	pH meter Benchtop pH/mV/°C/°F Meter Standard laboratory pH meter, 1 to 3 points calibration, automatic temperature compensation, Accuracy: 0.01pH. pH Range: -1.00~15.00pH Accuracy: ± 0.01pH Resolution: 0.01pH Calibration Points: 1 to 3 points Calibration Solutions: USA (pH4.01/7.00/10.01) or NIST (pH4.01/6.86/9.18) Temperature Compensation: 0~100°C, 32~212°F mV Range: -1000~1000mV Accuracy: ± 1mV Resolution: 1mV Temperature Range: 0~105°C, 32~221°F Accuracy: ± 1°C Resolution: 0.1°C Calibration Range: Measured value ± 10°C Temperature Units: °C or °F Others Hold Function: Manual or Automatic Power Off: Manual or Automatic Display: LCD Power Requirements: DC, using AC adapter, 220VAC

26	Refrigerator (-20 oC)	2	Refrigerator Capacity: at least 300 Litres, with at least 90 Litre Freezer compartment Voltage: 125-260 Low Voltage operation Freezer Temperature: -20°C Refrigerator Temperature: 5°C Storage Period in Event of Power Failure (h): 100 Hours
27	laptop	1	MacBook Air 15", Apple M4 chip with 10-core CPU, 10-core GPU, 16-core Neural Engine, 32GB unified memory, 1TB SSD storage, Up to 18 hours battery life1, Touch ID, Silver Color, power adapter 70 W, USB C power adapter, Backlit Magic Keyboard with Touch ID - US English
28	Microcentrifuge with temperature control	2	Specifications Speed:200 to 16,000 rpm Max RCF:24,325 xg Max Capacity:4 x 250ml Temp. Range:-20°C to 40°C (-K only) Electrical:120V, 60Hz
29	Digital ultrasonic cleaner	1	Digital display for timer and temperature settings, ultrasonic frequency (typically 40kHz), tank capacity (ranging from 0.6L to 25L or more), and adjustable heating temperature (often up to 80°C).
30	Flame Photo Meter	1	Potassium (K) $\leq 0.004 \leq 0.156$, Sodium (Na) $\leq 0.008 \leq 0.184$, Lithium (Li) $\leq 0.015 \leq 0.104$, Calcium (Ca) $\leq 0.050 \leq 2.00$, Barium (Ba) $\leq 0.044 \leq 6.03$, Reproducibility $\leq 2\%$, Response Time < 8 seconds, Sample Uptake Volume (ml) < 6 ml/minute, Printer Integral Thermal Printer – Optional, USB, Colour LCD Touch Screen display, Languages English, Gases LPG, Natural Gas, Propane Butane Weight 8Kgs
31	Heating and Magnetic Stirrer (1-Plate)	2	range from room temperature to 550°C, with a stirring speed of 100-1500rpm and a heating plate size of 120 x 120 mm or 180 x 180 mm. Digital Display automatic
32	Heating and Magnetic Stirrer (4-Plate)	1	range from room temperature to 550°C, with a stirring speed of 100-1500rpm and a heating plate size of 120 x 120 mm or 180 x 180 mm. Digital Display automatic
33	Hot Air Oven	2	Range: 5°C above ambient to 250°C, with some ovens reaching 300°C or 400°C. Accuracy: Typically $\pm 1^\circ\text{C}$ or $\pm 2^\circ\text{C}$. Uniformity: Typically $\pm 1^\circ\text{C}$ or $\pm 2^\circ\text{C}$. with digital display and 220V, single-phase, 50 Hz
34	Ultra Centrifuges	1	Speed ranging from 60,000 RPM and above with digital display and smart autostop option
35	Antibiotic Zone readers	2	Accuracy: 0.01 mm to 0.2 mm, ensuring precise measurements. 220 V, Integrated illumination systems, 0 to 80 mm
36	Computer System for labs	6	Core i7, 13 Generation, 1TB Ssd, 64GB RAM, 8GD Graphics Card, 27 inch LED, Keyboard, Mouse with pad
37	Split wall mount Inverter AC's 1.5 ton including installation	7	Latest Models, for Temperature and humidity control, airflow, and the type of AC system suitable for the lab's needs.