

PROCUREMENT OF MEDICAL & LAB EQUIPMENT

Art and Design Department

Sculpture Studio

S/No	Name of Equipment	Specifications	Required Brand	Quantity				
1.	Revolving Platform for Sculpture Model	3ft.x3.1/2ft (Steel pipe frame with steel Top)	Local	1				
2.	Armature Stools with rotating Top	3ft x16"x16" Sheesham wood with polish	Local	30				
3.	Standing Figure Armature	Iron	Local	10				
4.	Relief Boxes (oval and rectangular)	18"x18"x4" 12"x12"x4" (Sheesham wood with polish)	Local	10 10				

S/No	Name of Equipment	Specifications	Required Brand	Quantity				
5.	Caliper sets	Iron calipers of different sizes	Local	2 sets				
6.	Clay Storage Box with wheels and drawer	12"x12"x30" (Steel 20/22 G)	Local	2				
7.	Heavy wooden Table for stone Sculpture	(3ft x2 ft x 2.6ft)Steel Pipe frame with Sheesham wooden top	Local	5				
8.	Heavy Stool	16"x16"x24" Steel pipe frame, cushioned top	Local	10				
9.	Head Armature	17"x17"x18" Sheesham Wood		30				
10.	Working Table with 3/1 drawers	5ft. x2ft. x2.6ft.1 1/2" pipe, 18G,Full lamination	Local	5				
11.	Working plate with handle	18"x24"	Local	2				
12.	Steel Stools with cushion, long and short	13"x13"x24"	Local	6				

S/No	Name of Equipment	Specifications	Required Brand	Quantity				
Print Making Lab								
1	Tools Set for stone cutting	(Gauges, Cutter, Chisel,	Imported	2				
2	Lithography Press • Refurbishing old Press • New Press	<ol style="list-style-type: none"> 1. Press bed size = 18" x 30" 2. Over All frame length = 50" 3. Scraper width: 18" 4. Frame width including crank handle: 24" 5. Operation: Manual, Hand Crank for bed movement, hand crank size: 36" 6. Printing type: Lithography with rubber Scrapper 7. Weight of system: 400 Kg - 560 Kg (approx.) 8. Major Metallurgy: solid cast iron <p>With repair and upgradation including shipment, logistics, handling and installation. Including shipment, logistics, handling and installation</p>	Imported	1				
3	Levigator	For grinding of Litho	Imported	1				
4	Lime Stone Blocks for traditional lithography	18"x20" 12" x18	Imported	5				

Lab for Communication Design

S/No	Name of Equipment	Specifications	Required Brand	Quantity	Unit Price (w/o GST)	17% GST	Unit Price with GST	G. Total (with GST)
1	Drawing table with Double Top and drawer	2.6'x2x2.6' Sheesham Wood	Local	30				

Painting Studio

S/No	Name of Equipment	Specifications	Required Brand	Quantity	Unit Price (w/o GST)	17% GST	Unit Price with GST	G. Total (with GST)
1	Wooden Easels	24"x67"	Local	30				

		Sheesham wood with polish						
2	Donkey Easels	36"x12"x18" Sheesham wood with polish	Local	30				
3	Stool Steel pipe 1",	12"x12"x18 Sheesham wooden top	Local	20				
4	Spindle chairs for models	12"x12"x18	Local	4				

SUMMARY OF LAB REQUIREMENT

BOTANY DEPARTMENT (BS+MS)

List of Glassware for BS+MS Botany

S/No	Name of Equipment	Specifications	Required Brand	Quantity	Unit Price (w/o GST)	17% GST	Unit Price with GST	G. Total (with GST)
1.	Volumetric Burettes (25ml)	With glass key stopcock	German/England/France	4				
2.	Volumetric Burettes (50ml)	“	German/England/France	4				
3.	Volumetric Burettes (100ml)	“	German/England/France	4				
4.	China dishes (50ml)	Porcelain	German/England/France	4				
5.	China dishes (100ml)	Porcelain	German/England/France	4				
6.	China dishes (250ml)	Porcelain	German/England/France	4				
7.	China dishes (500ml)	Porcelain	German/England/France	4				
8.	Conductivity meter	Temperature Range: 32° to 149°F (0° to 65°C)	German/England/France	1				
9.	Capillary tubes: 200, 250	NIL	German/England/France	4				
10.	Petri plates	100×15 mm shippable	German/England/France	200				
11.	Graduated measuring Cylinders (1000 mL)	Plastic made	German/England/France	5				
12.	Graduated measuring Cylinders (500 ml)	Plastic made	German/England/France	5				
13.	Graduated measuring cylinder (250mL)	Glass made	German/England/France	5				
14.	Graduated measuring cylinder (100mL)	Glass made	German/England/France	5				
15.	Graduated measuring cylinder (50mL)	Glass made	German/England/France	5				

16.	Corks	NIL	German/England/France	30				
17.	Cotton Rolls	Absorbent	German/England/France	5 Packet				
18.	Disposable gloves	Polyvinyl made	German/England/France	10 Box				
19.	paraffin wax	NIL	German/England/France	2kg				
20.	Dropper	Fully refined in packets	German/England/France	5				
21.	Graduated Pipettes (1mL)	Glass made	German/England/France	10				
22.	Graduated Pipettes (2ml)	Glass made	German/England/France	10				
23.	Graduated Pipettes (5ml)	Glass made	German/England/France	10				
24.	Graduated Pipettes (10ml)	Glass made	German/England/France	10				
25.	Reagent Bottles(100,250, 500 and 1000mL)	Stainless steel made 100 ml	German/England/France	5 5 5 5				
26.	Spirit lamps	Steel made	German/England/France	10				
27.	Test tubes racks 24 hole	Graduated Glass made	German/England/France	Each				
28.	Conical Flasks (50 ml)	“	German/England/France	Each				
29.	Conical Flasks (100 ml)	“	German/England/France	Each				
30.	Conical Flasks (250 ml)	“	German/England/France	Each				
31.	Conical Flasks (500ml)	“	German/England/France	Each				
32.	Conical Flasks (1000 ml)	Graduated Glass Made	German/England/France	Each				
33.	Volumetric flask (10ml)	Graduated Glass Made	German/England/France	Each				
34.	Volumetric flask (25ml)	Graduated Glass Made	German/England/France	Each				
35.	Volumetric flask (50ml)	Graduated Glass Made	German/England/France	Each				
36.	Volumetric flask (100ml)	1.3mm -3.00 mm	German/England/France	Each				
37.	Inoculating loops	4.8 m roll	German/England/France	Each				
38.	Litmus papers	Graduated glass made	German/England/France	Roll				
39.	Beakers (50,100,250,500ml)		German/England/France	Each Each Each Each				
40.	Micro pipettes	“	German/England/France	1				

41.	Eppendorf tubes	Graduated plastic made	German/England/France	Packet				
42.	Micro centrifuge tubes	Graduated plastic made	German/England/France	Each				
43.	Pipette tips	Micro volume Plastic made	German/England/France	Packet				
44.	Falcon tubes	Graduated 50ml	German/England/France	Each				
45.	Falcon tubes	Graduated 15ml	German/England/France	Each				
46.	Separating funnel	1000ML	German/England/France	1				
47.	Blue capped glass bottles. 100ml, 250ml, 500ml)	Made from borosilicate glass 3.3	German/England/France	Each Each Each				

List of Lab Equipment for BS+ MS Botany Department

S/No	Name of Equipment	Specifications	Required Brand	Quantity	Unit Price (w/o GST)	17% GST	Unit Price with GST	G. Total (with GST)
1	Bench top shaker	<p><u>Orbital Shaker</u> <u>With digital display of speed and timer separately</u> Compact, flat agitator with ideal swivel motion. Electronic Adjustment of speed and time An LCD display makes it possible to read the speed and time setting. Dimensions: WxHxD mm 430x360x106, Orbital diameter 10 mm</p>	German/England/ France	1				

		<p>Continuous operation working time from 1-999 minutes.</p> <p>Platform size 12 x 12inch</p> <p>Speed range adjustable from 0 –350 rpm.</p> <p>Capacity to hold of various sizes.</p> <p>Germany made.</p>						
2	Centrifuges with rotors and adapters (Temp. controlled)	<p>High Speed Refrigerated Centrifuge Machine</p> <p>230 V 50 Hz, maintenance free brush-less motor with a speed range of 18000 rpm universal speed range,</p> <p>microcontroller with automatic rotor identification, LCD-Display for the pre selection of all centrifuge parameters</p> <p>10 each curves of acceleration and deceleration, simple starting,</p> <p>Temperature control range –20 to +40°C, with</p> <p>built in time display, range 0 – 99hr or infinite, Operated on 220 Volts</p> <p>Made in Germany.</p>	German/England/ France	1				
3	Growth cabinets (chambers)	<u>Plant Growth Chambers</u>	German/England/ France	1				

		<p><u>Microprocessor Controlled Graphic LCD Display</u></p> <p>Features</p> <ul style="list-style-type: none"> • Graphic LCD provides easier operation • Programmable temperature, lighting and humidity functions <p>Specification</p> <p>Temperature control range:5°C to +50°C (light off) +10°C to +50°C (light on)</p> <p>Effective Capacity: 294 litres</p> <p>Internal Dimensions: 520 x 490 x 1135 (mm)</p> <p>Shelves: 4</p> <p>Air circulation: Forced air circulation</p> <p>Compressor: Hermetic type</p> <p>Temperature Accuracy: ±0.3°C</p> <p>Lighting range (Adjustable):0 lx to 20,000 lx Fluorescent lamp 40W x 15, 6 increments (0, 1, 2, 3, 4, 5)</p> <p>Humidity: Ultrasonic humidifier PID control</p>						
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		<p>Humidity control range: 60 to 90%RH (+15°C to +45°C and light off) 55 to 85%RH (+15°C to +45°C and light on).</p> <p>Made in Japan.</p>						
4	Spectrophotometer	<p><u>UV/Vis Spectrophotometer</u></p> <p>Double beam spectrophotometer with fixed spectral resolution</p> <p>Features</p> <p>Outstanding long-term stability, excellent signal-to-noise ratio and best energy throughput</p> <p>Holmium oxide filter for automatic wavelength calibration</p> <p>Mode: Energy, Absorption, Transmission, Reflectance</p> <p>Wavelength range: 190—1100 nm</p> <p>Spectral bandwidth: Fix 1.4 nm</p> <p>Scanning speed: 12000 nm/min</p> <p>Wavelength accuracy (Deuterium line at 656nm): ± 0.1 nm</p> <p>Wavelength reproducibility</p>	German/England/ France	1				

		<p>(with Holmium oxide filter): ≤ 0.02 nm</p> <p>Photometric reproducibility: \leq 0.0005 A</p> <p>Baseline stability at 500 nm: \leq 0.0001 (RMS)</p> <p>Long-term stability a 500 nm: ± 0.0005 A/h</p> <p>Scanning speed: 12000 nm/min</p> <p>Cell holder: Single Cell holder</p> <p>Display: on Computer</p> <p>Cuvettes: 2 glass and 2 Quartz cells</p> <p>Complete with software, Computer & Laser Printer</p> <p>Made in Germany</p>						
5	Laminar Flow Hood	<p>Laminar Flow Cabinet Horizontal Space-saving desk-top type with compact design</p> <p>Open type large air exhaust area for airflow</p> <p>Technical Specifications:</p>	German/England/ France	1				

		<p>Exterior Dimensions: 1220*650*920 (W x D x H (mm))</p> <p>Work Zone Dimensions: 1120*490*575 (W x D x H (mm))</p> <p>Work Zone Height: 40 (cm)</p> <p>Controller Switch</p> <p>Blower: AT Blower</p> <p>Main Power Switch: Yes</p> <p>Foot-pad: Yes</p> <p>Noise dB(A): <65</p> <p>HEPA Filter: H13, ≥99.99% (@≥0.3μm)</p> <p>Made in Germany</p>						
6	Gel Documentation system along with UV	<p>Documentation and analysis fluorescence applications.</p> <p>It features a compact darkroom which has a sliding front door and an internal LED white light. It has a 3m pixel camera and can produce images with 16 bit image depth.</p> <p>A manual zoom lens and manual filter drawer (includes a UV filter) completes the package.</p>	German/England/ France	1				

		<p>The system is controlled by the new Gene Sys Software Capture and Analysis. Using many of the features found on the higher specification Syngene products.</p> <p>Internal LED White light for sample positioning and focusing.</p> <p>Complete with Gene Sys Image Software & Gene Tools Software</p> <p>Made in Germany</p>						
7	Vortex	<p><u>Vortex Mixer</u></p> <p>Vibrating motion continuously analog dial speed control</p> <p>Electronic speed regulation 0 – 3000 rpm,</p> <p>Vibration orbit 4.5 mm,</p> <p>Operating mode: touch, continuous, high stability,</p> <p>Operated on 220 Volts.</p> <p>Made in Italy.</p>	German/England/France					
8	Vertical Autoclave	<p>Autoclave Digital Microprocessor</p> <p>Controlled Vertical Unit</p> <p>Temperature Range 105 to 135° C Interior</p>	German/England/France	1				

		<p>Chamber Stainless steel, capacity 50 Lit interior chamber dimension 300x710 D mm, with Built in Timer 1 to 250 Minutes and Pressure Gauge 0 to 0.4 mpa, Selected Modes for Liquid and Solids and Agar Process, Complete with stainless Steel Baskets operated on 220 Volts with following Features:-</p> <ol style="list-style-type: none"> a. Electromechanical Lock System. b. Dual Sensing Interlock mechanism. c. Pulse Sensing System for Air Exhaust. d. Programmable Auto start e. Process Status Display f. Over Pressure Cutoff. Over Temperature Cutoff, Pressure Safety valve. <p>Complete Unit as above with standard accessories.</p>						
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		Made in Japan.						
9	Eppendorf Micro centrifuge temperature control	<p><u>Centrifuge Machine Micro Refrigerated</u></p> <p>Digital microprocessor controlled with large LCD display, Speed range 200 to 15000 rpm, Maximum RCF 21380 xg With following features:</p> <ul style="list-style-type: none"> - Automatic motor driven lid lock. - Maintenance free induction drive -Active imbalance-identification and cut off - Storage up to 99 programmes. - Pre selection of the running time range 99 hr 59 minutes. - Temperature range -20 to 40°C, - Standstill cooling. - Selection of speed in both rpm and G-force. - Quick Key for short Runs - CFC Free Refrigeration System - Manufactured according to international safety regulations 	German/England/France	1				

		<p>-10 acceleration & deceleration rates</p> <p>-Audible signal at the end of each run</p> <p>1-No. Combi-angle rotor for 24 x 1.5/2.0 ml tubes and 4 x 8place PCR Stripes</p> <p>Speed 15000rpm with adaptors of 0.5ml</p> <p>Complete with above Rotor, Operated on 220 Volts.</p> <p>Made in Germany.</p>						
10	Incubator	<p>Adaptive multifunctional Digital PID-Microprocessor controller with High-Definition TFT-Color Display.</p> <p>Temperature range 10°C above ambient up to +80°C</p> <p>Resolution of display for set point values 0.1°C</p> <p>Double doors (interior glass, exterior stainless steel)</p> <p>Adjustment of pre-heated fresh air admixture by air flap control in 10% steps,</p> <p>digital timer adjustable from 1 minute to 99 days, 23 hours</p>	German/England/France	1				

		adjustable electronic over temperature monitor and mechanical temperature limiter, Made in Germany.						
11	Suction pump	Vacuum pump single stage diaphragm oil less type With 2 cylinders low noise level, compact for Laboratory Vacuum & Pressure control device and gauges fitted with Pump able to use with Evaporators, Filtration and Vacuum Oven etc. Vacuum Controllable Capacity: 60 lit/minute Maximum Flow Rate: 3.8/4.2 m ³ h, Absolute ultimate Vacuum: <100 mbar Maximum Pressure outlet: 4 bar Made in Germany.	German/England/France	1				
12	Ultra Low temperature freezer -80°C	<u>Ultra Low Temperature Freezer (Upright Type)</u> Temperature range:-50°C to -86°C Interior Dimensions:(WxDxH) 630 x 600 x 1380 mm	German/England/France	1				

		<p>Effective capacity: 519 Liters / 18.3cu.ft.</p> <p>Shelves: 3, Stainless steel</p> <p>Access port: 3</p> <p>Compressor: Rotary type (high stage side), Hermetic type (low stage side)</p> <p>Alarm system: High/low Temperature, Power failure, Filter check, Self-diagnostics, Door check, Remote alarm contact</p> <p>Accessories: 1 set of keys, 1 scraper</p> <p>Made in Japan.</p>						
13	Fridge 4°C	<p>Specification:</p> <p>Temperature control: 2°-14°C</p> <p>Temperature display: Digital (1° C increments)</p> <p>Interior dimensions: 720W x 350D x 1435H mm</p> <p>External Dimensions: 800W x 465D x 1800 mm</p> <p>Effective capacity: 340 liters (12.0 cu.ft.)</p> <p>Net Weight: 100Kg (220lbs)</p> <p>Internal cabinet: Stainless steel.</p> <p>Insulation: polyurethane foam</p>	German/England/France	1				

		<p>Doors: Sliding glass doors, double-paned glass with heat-reflective film</p> <p>Shelves: Hard Steel Wire</p> <p>Lighting / Casters: LED/2 casters</p> <p>Compressor: Hermetic type, 160 W</p> <p>Refrigerant: HFC</p> <p>Defrosting cyclical defrosting & evaporator temp. detection system</p> <p>Defrosting heaters: 101 W</p> <p>Door ajar alarm: Buzzer/door ajar lamp</p> <p>Made in Japan.</p>						
14	Low temperature freezer - 20°C	<p><u>Biomedical Freezer (Upright type)</u></p> <p><u>Direct Cooling</u></p> <p>Specification</p> <p>Interior Dimension: 490(W) x 485(D) x 1290(H)</p> <p>Capacity: 274 litres / 9.7 cu.ft.</p> <p>Cooling range: -20°C to -30°C</p> <p>Baskets: 4 Large, 1small</p> <p>Insulation: HCFC-Free polyurethane formed-in-place</p> <p>Alarm system: High/low temperature</p>	German/England/France	1				

		<p>alarm (adjustable), Power failure, Remote alarm contact</p> <p>Calibration: Zero adjustment via control panel</p> <p>Accessories: Set of key, 1 scraper, 4 card holders and baskets.</p> <p>Made in Japan</p>						
15	Poly carbonate filters	Pore size, (5µl, 1.2µl, 0.2µl)	German/England/France	1				
16	Sonicator	<p><u>Ultrasonic Cleaning Bath with Plastic Lid</u></p> <ul style="list-style-type: none"> - Cleaning tank made of cavitation-resistant stainless steel. - Casing made of stainless steel, hygienic and easy to clean - Permanent sweep function for an optimised sound field distribution in the cleaning liquid. - Temperature-controlled ultrasonic operation: - Splash water-proof operating panel. - Temperature setting between 30°C, and 	German/England/France	1				

		<p>80°C, variable in 5°C, steps.</p> <p>- Automatic switch-off after 12 hr operation to prevent unintended permanent operation.</p> <p>Technical Specifications:</p> <p>Tank max.(litre) = 2.75</p> <p>Tank internal dimensions = 240x137x100 mm</p> <p>Ultrasound frequency (kHz) = 37</p> <p>Mains voltage = 220V</p> <p>Made in Germany</p>						
17	TOPO-TA cloning Kit	<p>Bacteria or Yeast Strain: Topo-10</p> <p>Product size: 25 reactions</p> <p>Vector Type: TOPO-TA cloning vector</p>	German/England/France	1				
18	Nano drop ND-1000 Spectrophotometer	<p>Spectrometer Micro volume (Nano drop)</p> <p>Measuring microliter and sub microliter volume for content of DNA, RNA or protein</p>	German/England/France	1				

		<ul style="list-style-type: none"> • Fluorescent dye labeling density if nuclear acid microarray samples • General UV-Vis spectrophotometry. • <u>Technical specification</u> <p>Sample Volume: 1–5 µl</p> <p>Standalone Operation: Built-in software</p> <p>User Interaction: Touchscreen and soft keys</p> <p>Protocols</p> <p>Display: 3,7“ color touchscreen</p> <p>Interfaces: 3 USB ports</p> <p>Sensitivity dsDNA: 2–3700 ng / µl</p> <p>Pathlength: 0,2 mm and 1 mm,</p> <p>Auto select function</p> <p>Wavelength Range: 200–850 nm</p> <p>Lamp: Xenon Flash lamp</p> <p>Detector: 2048 pixel array</p> <p>Made in Germany.</p>						
19	Water distillation plant	<p><u>Distillation Apparatus</u></p> <p>All glass Borosilicate Glass fitted with metal element 3 KW capacity 4 Litre per hour, conductivity</p>	German/England/France	1				

		4 µs/cm, PH 5.5 to 6.5. Made in Germany.						
20	Hot plate with stirrer	<p><u>Magnetic Stirrer with Ceramic Hotplate (Digital)</u></p> <p>Ceramic Top plate, extremely resistant to corrosion</p> <p>Dimension (mm) 180 x 180mm, ceramic coated,</p> <p>Temperature range up to 550°C, Stirring volume up to 15 Lit</p> <p>Electronic speed regulation up to 1500 rpm Control knob for stirrer and digital temperature, operated on 220 Volts, 800W.</p> <p>Made in Italy</p>	German/England/France	1				
21	Sony Camera attach with Microscope	<p><u>Trinocular Microscope</u></p> <p>Body: Aluminum die-cast metal frame, protective plastic covering</p> <p>Optical System: Infinity optical system</p> <p>Illumination System: Built-in transmitted illumination system. LED</p>	German/England/France	1				

		<p>power consumption: 0.5 W (nominal value)</p> <p><u>Technical Specs:</u></p> <p>CX23RTFS2 Microscope frame for transmitted microscopy with LED illumination, trinocular tube, a pair of eyepiece 10X with Helicoid adjustment (F.N.20), quadruple revolving nosepiece, right-handle double-plate stage, abbe condenser and plan objectives (4X, 10X, 40X), including field stop adapter, AC adapter, fixing belt for transportation</p> <p>CXPL100XO Plan achromat objective 100X/1.25, WD 0.13 (spring, oil)</p> <p>UYCP-12 Power Cord</p> <p>COVER-015 Dust Cover</p> <p>Made in Japan.</p>						
22	Mesh	Standard	German/England/France	1				
23	Nylon Mesh	<p>Material: Polyamide</p> <p>Size: 25µm</p> <p>Local made</p>	German/England/France	1				

24	pH meter	Digital bench model, microprocessor controlled with parallel temperature indication. -2.0 to 20pH ±0.005 Made in Germany	German/England/France	1					
25	Pipetman set	Stainless steel, PVDF with unique dry sealed technology a) Measuring range: 2 to 20µl. accuracy±0.1µl b) Measuring range: 50-200µl accuracy: ±0.5µl c) Measuring range: 200 to 1000µl Accuracy: ±3.0µl Complete set with three single pipette hangers10, color identification clips. Made in France	German/England/France	1					
26	Vacuum filtration unit	<u>Filtration Assembly With Vacuum Pump</u> • 100% oil-free transfer • Pure transferring, evacuation and	German/England/France	1					

		<p>compression of gases</p> <p>Technical Specifications:</p> <p>Delivery (l/min)¹⁾ : 6</p> <p>Ultimate vacuum (mbar abs.): 100</p> <p>Operating pressure (bar g) 2.4</p> <p>Motor protection: IP 20</p> <p>Operated on 220 Volts, Model N 86 KN.18</p> <p>KNF Lab.</p> <p>with Filtration assembly, consists of filtration flask 1000ml, Glass funnel, aluminium clamp and silicon stopper,</p> <p>Complete set as above.</p> <p>Made in France</p>						
27	Real Time quantitative PCR	<p>(96well plate)</p> <p><u>Technical Specification:</u></p> <p>Sample Capacity: 96 x 0.2mL tubes</p> <p>Programmable Temperature Range: 4°C to 99.9°C</p> <p>Temperature Control: Calculated or block</p> <p>Temperature</p>	German/England/France	1				

		<p>Accuracy/Uniformity: $\pm 0.5^{\circ}\text{C}/\pm 0.5^{\circ}\text{C}$</p> <p>Heating/cooling method: Peltier</p> <p>Gradient temperature range: 30°C to 99°C.</p> <p>Temperature of 6-segment blocks can be set independently.</p> <p>6-segment Temperature blocks: 6 temperature blocks in 4 x 4 well formats</p> <p>Programmable lid temperature: 60° to 65°C, 100° to 115°C</p> <ul style="list-style-type: none"> • Program memory: 200 complete programs • Temp. increments/decrements: Yes • Time increments/decrements: Yes • User program folders: 50 sets • Password protected programs: Yes • Communication: USB and RS232 ports <p>Made in USA</p>							
28	SDS page Horizontal unit Electrophoresis	<p>Mini Gel Electrophoresis Horizontal</p> <p>unit dimension</p> <p>20 x 9.5 x 8.5cm (LxWxH), Silicone rubber prevents any</p>	German/England/France	1					

		<p>leakage, UV Transparent whole unit include</p> <p>to</p> <p>monitor the movement of bands during Electrophoresis,</p> <p>easy lid removal, Run up to 30 samples at o</p> <p>complete system with UV Tray 10 x 7 cm, c</p> <p>Comb for</p> <p>10 samples thickness 1.00 mm and one com</p> <p>15 samples</p> <p>thickness 1.00 mm with leads. USA</p> <p>with Electrophoresis Power Supply,</p> <p>Made in USA</p>						
29	Automated Thermocycler	<p><u>PCR Machine/Thermal Cycler</u></p> <p><u>Gradient</u></p> <p>The Multi Gene Opti Max Thermal Cycler</p> <p><u>Technical Specification:</u></p> <p>Sample Capacity: 96 x 0.2mL tubes</p> <p>Programmable Temperature</p> <p>Range: 4°C to 99.9°C</p> <p>Temperature Control: Calculated or block</p>	German/England/France	1				

		<p>Temperature Accuracy/Uniformity: ±0.5°C/±0.5°C</p> <p>Heating/cooling method: Peltier</p> <p>Gradient temperature range: 30°C to 99°C.</p> <p>Temperature of 6-segment blocks can be set independently.</p> <p>6-segment Temperature blocks: 6 temperature blocks in 4 x 4 well formats</p> <p>Programmable lid temperature: 60° to 65°C 100° to 115°C</p> <ul style="list-style-type: none"> • Program memory: 200 complete programs • Temp. increments/decrements: Yes • Time increments/decrements: Yes • User program folders: 50 • Password protected programs: Yes • Communication: USB and RS232 ports 							
30	Polyacrymlyl Gel (Vertical)	<p>Vertical Gel Electrophoresis able to make and runs two gels simultaneously.</p> <p>Maximum gel size 8 x 11cm, gel thickness 0.75 mm, minimum buffer</p>	German/England/France	1					

		<p>volume internal 250 ml, and _minimum buffer volume external 500 ml, gel tank dimension: 20 x 13 x 16.5cm. Injection moulded unit, compact design, complete unit includes Electrophoresis tank casting module 2-set, glass plates 5-sets, 0.75mm spacer 4-Nos., 0.75 mm 10 teeth combs 2-Nos., one gel plate, alignment cord, Glass plate separator and instruction manual Model V-Ges, USA. With Electrophoresis Power Supply Made in USA.</p>						
31	Buchi Rotavapor (R-100 Rotary Evaporator)	<p><u>Rotary Evaporator Model Hei-VAP Value HL Digital</u> Technical Specification: - Hand / Motor lift Hand lift Rotation speed (rpm) 20</p>	German/England/France	1				

		<p>280</p> <p>Rotation speed setting Scale</p> <p>Brushless DC motor with electronic speed control</p> <p>Heating capacity (W)</p> <p>1,300</p> <p>Temp. Range heating bath (°C)</p> <p>210</p> <p>Temperature range accuracy (°C)</p> <p>Overheat protection bath (°C): Cut-off at 5° over set</p> <p>Temperature, Via separate PT 1000</p> <p>Bath temperature setting</p> <p>Digital</p> <p>Heating bath temperature control: Electronic</p> <p>Digital</p> <p>Secondary over temp. Cut off (°C)</p> <p>Material heating bath (mm): Stainless steel 316L</p> <p>Volume heating bath (l)</p> <p>4.5Liters</p> <p>Instrument is supplied with 1Litre evaporati</p>						
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		<p>and Receiving flask as standard. With Glassware set opera 220 Volts, Model Hei-VAP HL, Value G1 Heidolph, a. Vacuum Pump <u>Technical Specification</u> Number of Head / Stages 2 Maximum Pumping Speed 0.75 m³h/0.9 Ultimate Vacuum 12 mb Ultimate Vacuum with Gas Ballast 20 mb Operated on 220 Volts Model MZ1C Vacuu brand</p> <p>b. Chiller: with air-cooled refrigerating unit circulation pump. Evaporator (cooler), tank and housing of sta steel.</p> <p><u>Technical Features:</u> Temperature range: -20...40 (80)°</p>					
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		Temperature adjustment: Digital Temperature indication: Digital Internal temperature sensor: PT100 Resolution of display: 0.1K Max. Delivery 14 l/m Made in Germany						
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DEPARTMENT OF CHEMISTRY

LAB EQUIPMENT FOR BS+MS PROGRAMME

S/No	Name of Equipment	Specifications	Required Brand	Quantity	Unit Price (w/o GST)	17% GST	Unit Price with GST	G. Total (with GST)
1.	UV visible Double Beam Spectrophotometer	<p><u>UV/Vis Spectrophotometer</u> Double beam spectrophotometer with fixed spectral resolution Mode: Energy, Absorption, Transmission, Reflectance Wavelength range: 190—1100 nm Spectral bandwidth: Fix 1.4 nm Scanning speed: 12000 nm/min Wavelength accuracy (Deuterium line at 656nm): ± 0.1 nm (with Holmium oxide filter): ≤ 0.02 nm Photometric reproducibility: ≤ 0.0005 Baseline stability at 500 nm: ≤ 0.0001 (RMS) Long-term stability a 500 nm: ± 0.0005</p>	German/England/France	1p				

		<p>A/h Scanning speed: 1 2000 nm/min Cell holder: Single Cell holder Display: on Computer Cuvettes: 2 glass and 2 Quartz cells Complete with software, Computer & Laser Printer COUNTRY OF ORIGIN GERMANY</p>						
2.	Cyrosopic apparatus	<p><u>Gerber Machine with Rotor for 8 Butyrometer Tubes</u> Speed range up to 1350rpm, RCA 350gm and effective radius 170 mm, built in digital timer and heating regulated up to 65°C, with safety lid lock COUNTRY OF ORIGIN GERMANY</p>	German/England/France	1				
3.	Calorimeters	Differential Scanning Calorimeter (TA instruments)	German/England/France	1				
4.	Dilatometers	TA instruments	German/England/France	1				
5.	PH meter	<p><u>PH Meter</u> Digital Bench Model Microprocessor Controlled With parallel Temperature indication, PH Range -2.0 to 20.0 ±0.005pH, PH Resolution 0.005pH, MV Range ±1200.0mV, Accuracy mV ±- 0.3mv, COUNTRY OF ORIGIN GERMANY</p>	German/England/France	2				
6.	Conductivity meters	<p><u>Conductivity Meter Portable</u> The Cond 3110 is an easy-to-use, reliable conductivity meter with automatic nF temperature compensation</p>	German/England/France	1				

		<p>for routine measurements in natural water and wastewater.</p> <p>Specification: Conductivity 0.0 ... 1000 mS/cm \pm0.5 % of value Temperature -5.0 °C ... +105.0 °C \pm0.1 °C Salinity 0.0 ... 70.0 (nach IOT) Reference temperature 20 °C or 25 °C, selectable</p> <p>COUNTRY OF ORIGIN GERMANY</p>																				
7.	Polarimeter	<p>Polarimeter Digital</p> <ul style="list-style-type: none"> • High Precision • Patented XPC Technology • Up to 3.0 OD measurement • Tube lengths up to 200mm • High definition 4“ full color display • US/EP/BP/JP compliant <p>Specifications</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 60%;">Specifications</td> <td style="text-align: right;">Angular</td> </tr> <tr> <td>(°A)</td> <td></td> </tr> <tr> <td>Range</td> <td style="text-align: right;">-355 to</td> </tr> <tr> <td>+355</td> <td></td> </tr> <tr> <td>Resolution</td> <td style="text-align: right;">0.01/0.001</td> </tr> <tr> <td>(selectable)</td> <td></td> </tr> <tr> <td>Accuracy</td> <td style="text-align: right;">\pm 0.010</td> </tr> </table> <p>Operated on 220Volts Complete with 200mm Tube</p> <p>COUNTRY OF ORIGIN ENGLAND</p>	Specifications	Angular	(°A)		Range	-355 to	+355		Resolution	0.01/0.001	(selectable)		Accuracy	\pm 0.010	German/England/France	1				
Specifications	Angular																					
(°A)																						
Range	-355 to																					
+355																						
Resolution	0.01/0.001																					
(selectable)																						
Accuracy	\pm 0.010																					
8.	Centrifuge Machine	<p>Centrifuge Machine Angle Rotor Capacity 12 x 15ml tubes, and 6x 50ml digital microprocessor controlled Speed range 200 to 6000 rpm, digital display of preset and actual speeds, timer range 0 – 99hr 59 minutes and continuous Operated on 220 Volts,</p>	German/England/France	1																		

		COUNTRY OF ORIGIN GERMANY						
9.	Thermostat Circulating water bath	Shaking Water Bath Basic class for standard temperature <ul style="list-style-type: none"> • Temperature range min. 5 °C above ambient up to +95 °C with additional boiling mode +100 °C • integrated digital timer from 1 min. to 99,59 hours • Over temperature Protection (double) • Interior Stainless Steel Tank & Textured Stainless Steel Casing • Fitted With Gabled Cover Operated on 220volts, WNB Series. Capacity 14 Lit., interior dimension 350x290x140mm, shaking speed 10-150 stroke/minute Capacity to holds 6 Flasks of 250ml	German/England/France	1				
10.	Conductivity Meter	Conductivity Meter Digital Bench Top Microprocessor Controlled with parallel temperature indication, Conductivity Range 0.0 us/cm to 1000 ms/cm, Accuracy 0.5%, Temperature Range -5.0 to +105.0°C, Salinity 0.0-70.0, TDS 0-1999 mg/l, Reference Temperature 20 or 25°C Selectable with following accessories.	German/England/France	1				
		a) Conductivity Electrode with built in Temperature Sens b) Electrode Stand with Base c) Standard solution 50 ml Complete package						
11.	Filter funnel	COUNTRY OF ORIGIN GERMANY Borosilicate glass 3.3/ ROBU	German/England/France	2				
12.	Distillation plant	Distillation Apparatus all glass Borosilicate Glass fitted with metal element 3 KW capacity 4 Litre per hour, conductivity	German/England/France	1				

		4 µs/cm, PH 5.5 to 6.5 COUNTRY OF ORIGIN GERMANY						
13.	New benchmark digital hot plate combination	Multiple-position hot plate stirrer with four separately GENERAL FEATURES Construction material: epoxy painted metal structure Heating plate: aluminum alloy coated with a special protection Heating plate diameter: 155 mm Stirring positions: 4 Power: 2550 W Weight: 8.3 Kg (18.2 lb) Dimensions (WxHxD): 715x115x246 mm (28.1x4.5x9.7 in) Operated on 220 Volts COUNTRY OF ORIGIN ITALY	German/England/France	4				
14.	Vacuum drying oven	<u>Vacuum Drying Oven</u> <ul style="list-style-type: none"> • Temperature range 5°C above ambient up to +200°C • Vacuum control range: 5 to 1100 mbar • Temperature sensors Pt100 Class A in 4-wire circuit individually for each thermo shelf • Setting accuracy 0.1°C for set point and actual value • Digital over- and under temperature monitor • Temperature monitoring band automatically linked to the Set point (ASF) • Multi-Level-Over temperature-Protection 	German/England/France	1				

		<p>(MLOP) for each thermo shelf Programmable, digitally controlled inlet for air. Operated on 220volts, VO Series. Capacity 29Lit, Interior dimension: 385 x 305 x 250 mm, Operated on 220volts, WITH Vacuum pump single stage diaphragm oil less type ,With 2 cylinders low noise level, compact for Laboratory Vacuum & Pressure control device and gauges fitted with Pump able to use with Evaporators, Filtration and Vacuum Oven etc. Vacuum Controllable Capacity: 60 lit/minute Maximum Flow Rate: 3.8/4.2 m³h, Absolute ultim Maximum Pressure outlet: 4 bar Complete unit operated on 220 Volts COUNTRY OF ORIGIN GERMANY</p>						
15.	China bench top fume cupboard hood	<p><u>Fume Hood with built in Gas & Water Valves Specifications:</u> External Dimensions 1200 x 873 x 1500 mm(W x D x H) Internal Dimensions 1120 x 682 x 1435 mm(W x D x H) Construction Main Body EG steel with aluminum and oven-baked Epoxy-polyester hybrid Isocide™ powder coating Airfoil Stainless Steel grade 304 Sash Specification</p>	German/England/France	1				

		Sash Material Tempered Laminated and Framed Sash Glass Sash Configuration: Vertical Complete unit with base storage cabinet COUNTRY OF ORIGIN SINGAPORE						
16.	Kern analytical balance ABT series	Electronic Analytical Balance Digital Microprocessor Controlled with Latest Uni Block Technology, Uni Block designs replaces 70 parts of Electromagnetic balances and ensures stable results. Technical Specification: Weighting Capacity: 220gm Minimum display: 0.1mg Pan size (mm): Ø91 approx. Complete unit, operated on 220Volts COUNTRY OF ORIGIN JAPAN	German/England/France	2				
17.	Rotary evaporators/ lab tech	Rotary Evaporator Technical Specification: - Hand / Motor lift Hand lift Rotation speed (rpm) 20 – 280 Rotation speed setting Scale Drive Brushless DC motor Heating capacity (W) 1,300 Temp. Range heating bath (°C) 20 – 210 Temperature range accuracy (°C) ±1 Overheat protection bath (°C) Cut-off at 5°C, over set temperature Via separate PT 1000 Bath temperature setting Digital Heating bath temperature control Electronic/ Digital Secondary	German/England/France	1				

		<p>overtemp. Cut off (°C) 250 Material heating bath (mm) Stainless steel AISI 316L Volume heating bath (l) 4.5L Instrument is supplied with 1Litre evaporating and Receiving flask as standard. With Glassware set operated on 220 Volts, a. Vacuum Pump <u>Technical Specification</u> Number of Head / Stages 2 Maximum Pumping Speed 0.75 m³/h/0.9 m³/h Ultimate Vacuum 12 mbar Ultimate Vacuum with Gas Ballast 20 mbar b. Chiller <u>Technical Features:</u> Temperature range: -20...40 (80)°C Temperature adjustment: Digital Temperature indication: Digital Internal temperature sensor: PT100 Resolution of display: 0.1K Max. Delivery 14 l/min Complete unit as above COUNTRY OF ORIGIN GERMANY</p>						
18.	DMP-100 Digital melting point(100) apparatus	<p><u>Melting Point Apparatus Digital Technical Specification:</u> Number of samples 2 Temperature range Ambient to 300°C Temperature accuracy ± 1.0°C at 20°C, ± 2.5°C at 300°C Display Three digit LED Temperature resolution 1°C Sensor Platinum resistance</p>	German/England/France	2				

		<p>PT100 Ramp rates 20°C per minute to plateau 20°C per minute to melt Dimensions (w x d x h) 160 x 220 x 170 mm Net weight 1.8 kg Electrical supply 230V, 50Hz, 75W Complete unit with pack of 100 melting point tubes, closed at both ends COUNTRY OF ORIGIN ENGLAND</p>						
19.	Potentiometer (digital)	<p><u>Potentiometric Titrator</u> Features pH/mV measuring input with reference input: 1 Wireless electrode recognition Dead stop measuring input (2 x 4 mm socket) Temperature measuring input (2 x 4 mm socket) Interfaces 3 USB, 2 RS232 Titration to mV and pH endpoint 2 EP Dynamic and linear titration to equivalence point (EQ), mV and pH 2 EQ Especially suitable for non aqueous titration Dead stop titration pH-stat titration Manual titration Dosing tasks Preparation of solvents (manual or automatic with connected balance)</p>	German/England/France	1				

		<p>Formulae for miscellaneous calculations Standard methods Number of methods: 50 COUNTRY OF ORIGIN GERMANY</p>						
20.	Electrophoresis Gel Type	<p>Mini Gel Electrophoresis Horizontal unit dimension 20 x 9.5 x 8.5cm (LxWxH), Silicone rubber prevents any leakage, UV Transparent whole unit included lid to monitor the movement of bands during Electrophoresis, easy lid removal, Run up to 30 samples at once complete system with UV Tray 10 x 7 cm, one Comb for 10 samples thickness 1.00 mm and one comb for 15 samples thickness 1.00 mm with leads, WITH Electrophoresis Power Supply, compact, space saving & light weight design, touch panel, audible & visible alarm, status alarm, constant voltage or current, safety features includes, no load detection, over voltage protection, automatic recovery after power failure, dimension 320x240x73mm, digital voltage range 10 – 300V in 1 Volt step, current 4–400 mA in 1mA steps 75 Watt max, design4 parallel outputs, with timer control 0–999minute, Operated on 220 Volts, COUNTRY OF ORIGIN USA</p>	German/England/France	1				

(IT LABS)

Hardware Lab CS/IT

S/No	Name of Equipment	Specifications	Required Brand	Quantity		
1	Logical Gates	AND, OR, NOT, XOR, XNOR, NAND, NOR AND (7408) Qty 100 OR 7432 Qty 100 NOT 7404 Qty 100 NAND 7400 Qty 100 NOR 7402 Qty 100 XOR 7486 Qty 100 XNOR 74266 Qty 100 Half adder Qty 100 Full adder Qty 100 2 to 4 decoders Qty 100 3 to 8 decoders Qty 100 4 input Priority Encoder Qty 100	Local	01 Job		

		BCD to 7 segment driver Qty 100 BCD to Excess 3 Code IC Qty 100 3-bit Ripple Counter Qty 100 Ring Counter and Johnson Counter Qty 100 7 Segment Display (Common Anode) Qty 100 7 Segment Display (Common Cathode) Qty 100 DLD Trainer RIMS DEV-2765 or latest version of any other company Qty 100						
2	Power Supply	Power Supply	Local	15				
3	Electric Items	Electric Miscellaneous items for Labs Double tap Role Qty 1 Fuse 5A 2 boxes Jumper wires Qty 5 Dusting Cloth Qty 20 Air Freshener Qty 2 LED Screen Cleaner Qty 4 Wire Stripper Qty 5 Extension Board Qty 10 Tweezer Qty 50 Multimeters Qty 15 RJ-45 Connector Qty 100 RJ-11 Connector Qty 100 Ethernet Cable Role Qty 1 Network Cable Tester Qty 10 Cable Crimper Qty 10 Cable Peeler/ Puncture tool Qty 10 RJ-45 female Connector Qty 100	Local	01 Job				

DEPARTMENT OF MASS COMMUNICATION

Demand for TV Studio and NLE

S/No	Name of Equipment	Specifications	Required Brand	Quantity			
1.		Acoustic panels, 2x2 wooden frame, 12 mm MDF with jumbolon and jute fabric on top and glass wool filling Studio Size New 34'x26' x10' (Complete panel surface would be (8'x4')		1,400			
2.		Total partition for PCR (approx		300			
3.		Ash vinear doors with complete installation and polish		3			
4.		Drop down/curtain Backdrop draping (Black/white)		1			
5.		Chroma wall 15'x15' MDF wooden structure with floor with specially textured mix green color		1			
6.		Floor carpeting with jumbolon with installation		1			
7.		Double glazed glass windows for PCR 6'x4'		1			

Physics Department

Apparatus List for Experimental Labs (BS 4 years)

S/No	Name of Equipment	Specifications	Required Brand	Quantity				
1	Determine wavelength of sodium light by Newton's Rings	Compact Set with <ul style="list-style-type: none"> ➤ Plano Convex Lens ➤ Plane Glass Plate ➤ Travelling microscope for measuring diameter of rings (Imported) ➤ Sodium lamp with power supply ➤ Spherometer ➤ Complete set with all other necessary accessories Sensitive component, Vacuum photo- tube. ➤ Light source: 12V/35W halogen tungsten 	Imported	3				
2	Determination of Planck's constant by studying photoelectric effect	Lamp <ul style="list-style-type: none"> ➤ Length of Guide: 395mm ➤ Dark current $\leq 0.003\mu\text{A}$ ➤ Precision of accelerated voltage $\leq 2\%$ ➤ Set of 5 different color filters 	Imported	2				

		<p>Complete set with all other necessary Accessories</p> <ul style="list-style-type: none"> ➤ Imported: China 						
3	BH Curve / Hysteresis Curve	<ul style="list-style-type: none"> ➤ Hysteresis curve kit consisting of Base plate with coil and holders for Hall sensors, Samples of iron, Measuring resistor, 4mm ground socket for connecting Oscilloscope, 4mm socket for connecting function generator ➤ Magnetic Field sensor ➤ Tesla meter ➤ Safety Experiment Leads ➤ Analog Oscilloscope ➤ Function Generator ➤ Digital multi meter ➤ DC Power Supply (20V, 5A) ➤ Imported: Germany 	Imported	2				
4	Resonance frequency of acceptor circuits	Compact Set	Imported	6				
5	Resonance frequency of rejecter circuits	Compact Set	Imported	6				

6	To determine ionization potential of Mercury	Compact Set	Imported	3					
7	To determine characteristics of G.M Tube. To find out the maximum energy and range of β particles	<ul style="list-style-type: none"> ➤ Radiation counter with RADEM and LABLINK ➤ GM Probe (35mm) and stand. ➤ USB Cable ➤ Calibrated Absorber Set (20) ➤ At least 3 radioactive sources for α, β and gamma. ➤ Imported: USA 	Imported	2					
8	Determine the Cauchy's Constant using Spectrometer	<ul style="list-style-type: none"> ➤ Spectrometer / Goniometer with 2 vernier scales ➤ Mercury Source ➤ Diffraction Grating ➤ Prism: flint glass (60 degree) ➤ Imported: Germany 	Imported	2					
9	Franck Hertz Experiment	<ul style="list-style-type: none"> ➤ Franck Hertz Experiment Heater (230V, 50/60 Hz) <ul style="list-style-type: none"> • Heater voltage: 4 – 12 V • Grid voltage: 0 – 70 V • Suppressor voltage: 1.5 V approx. • Tube dimensions: 130 mm x 26 mm dia. approx. • Heater output: 400W • Temperature range: 160° – 240°C 	Imported						

		<ul style="list-style-type: none"> • Temperature constancy: $\pm 1^\circ\text{C}$ approx. ➤ Power Supply (230V, 50/60 Hz) ➤ Digital Oscilloscope ➤ Digital Multi-meter ➤ HF Patch Cord(1m) ➤ HF Patch Cord (BNC/4mm Plug) ➤ Set of experiment leads ➤ Imported: Germany 		2				
10	Millikan's Oil Drop Experiment	<ul style="list-style-type: none"> ➤ Basic apparatus with experiment chamber and display unit consisting of Cover, Hole for oil Atomizer, Top capacitor plate, Observation window, Vertical adjustment knob for head of microscope, Standrod for measuring microscope ➤ Measuring microscope ➤ Eye piece WF 15x with scale ➤ Oil Atomizer ➤ Rubber bulb withhose ➤ Spirit level ➤ Adjustment needle ➤ Plug-in power supply, 12V AC, 200 mA ➤ Oil for Millikan's apparatus, 50ml 	Imported	2				

		➤ Imported: Germany						
11	Determination of velocity of light	<ul style="list-style-type: none"> ➤ Speed of light circuit unit ➤ Digital storage oscilloscope ➤ 20m and 15cm optical fiber cables ➤ 50 ohm splitter ➤ Oscilloscope Probe ➤ AC Adapter ➤ Imported: China 	Imported	1				
12	Passage of electricity through gases at low pressure	<p>Compact Set consisting of</p> <ul style="list-style-type: none"> ➤ Gas filled tube (Ne gas) with power supply ➤ Micrometer and Voltmeter ➤ All necessary accessories 	Imported	2				
13	Zeeman Effect	<ul style="list-style-type: none"> ➤ Electromagnet with accessories ➤ Tunable DC power supply 6 amperes ➤ Mercury Pen lamp. ➤ Polarizer. ➤ Convex Lens on Stem ➤ Interference Filter ➤ Fabry-Perot interferometer ➤ USB CMOS Camera ➤ Optical Precision Bench 	Imported	2				

		<ul style="list-style-type: none"> ➤ Support for Optical Bench ➤ Optical Rider ➤ Optical Base ➤ Complete Set with all other accessories ➤ Imported: USA 						
14	Hall Effect Experiment	<ul style="list-style-type: none"> ➤ Hall Probe Unit, n-Semiconductor (GaAs) ➤ Hall Effect Power Supply ➤ U-Core Electromagnetic Coil ➤ Track, Length 40 cm ➤ Optical Carrier (2) ➤ Adjustable Post Holder with 9 cm post (2) ➤ Banana Cords (6) ➤ Connecting Cables for 550/850 Interface (2) ➤ Magnetic Field Sensor ➤ 550 Universal Interface ➤ Imported: USA 	Imported	2				
15	Surface tension of water by capillary tube method	<ul style="list-style-type: none"> ➤ 6 capillary tubes of uniform bore and uniform diameters ➤ 2 glass strips ➤ Travelling microscope ➤ Wooden Block 	Imported	2				

		➤ Imported: China						
16	Measure work function of a metal and verification of Richardson's equation	<ul style="list-style-type: none"> ➤ Compact apparatus consisting of ➤ Directly heater type diode valve ➤ DC Power Supply ➤ Ammeter, Voltmeter ➤ All other accessories 	Imported	2				
17	Diffraction grating of different ranges	<ul style="list-style-type: none"> ➤ 15000-20000 lines / inch (3) ➤ 300-600 lines / inch (3) ➤ Imported: Germany 	Imported	6				
18	To determine modulus of rigidity by dynamics method (Maxwell needle method)	<ul style="list-style-type: none"> ➤ Maxwell's needle ➤ Rigid support with torsion head ➤ Telescope ➤ Stop watch ➤ Wire of suitable length and radius ➤ Screw gauge 	Imported	4				
19	Glass Prism	Standard laboratory glass prism	Imported	24				
20	Determination of Rydberg Constant from Spectrum of Hydrogen	<ul style="list-style-type: none"> ➤ Hydrogen Tube with Power Supply ➤ Diffraction Grating (15000 lines/inch) ➤ Spectrometer (Germany) 	Imported	1				

21	Michelson Interferometer	<p>Machined Base fitted with</p> <ul style="list-style-type: none"> ➤ 3-point adjustable mirror ➤ Pointed beam splitter ➤ Mounted movable mirror ➤ Accessory Mounts ➤ Viewing Screen ➤ Diffuser ➤ Double Convex lens (18mm) ➤ Compensator Lens ➤ Fitted Case ➤ Vacuum pump with gauge ➤ Gas cell ➤ Calibrated polarizer ➤ Glass Plate ➤ Rotating component holder ➤ Twyman-Green Lenses ➤ Mini laser with bracket ➤ Laser alignment bench ➤ Imported: USA 	Imported	2				
22	e/m of an electron	<ul style="list-style-type: none"> ➤ Fine beam tube filled with gas 						

	using fine beam tube	<ul style="list-style-type: none"> ➤ Helmholtz coil pair ➤ Tunable DC (Constant Current) Power Supply ➤ Tunable DC (Constant Voltage) Power Supply II ➤ Red and Black Patch Cords ➤ Imported: USA 	Imported	1					
23	Potentiometer	Comprising 4 constantan wires, each 1m long, clamped under heavy brass strips, and fitted by screws in such a manner so that it is easily replaceable. Provided with a meter rod and whole is mounted on a polished hard wood base board, supplied with jockey.	Imported	12					
24	Sono-meter	Comprising of a wooden resonance box with one meter rod fitted on it. 2 wires of different materials are attached to the wooden resonance box and tensioned by fine adjustment pegs, 2 movable wooden bridges, pulleys, slotted weights each of half kg.	Imported	12					
25	Determination of Spring constant by constant and dynamics method	<ul style="list-style-type: none"> ➤ Spiral spring ➤ Hanger with slotted weights ➤ Heavy retort stand ➤ Rectangular metallic bar 	Imported	4					
26	Cathode Ray Oscilloscope, Analog	<ul style="list-style-type: none"> ➤ Band Width: 20MHz ➤ Dual Channel 	Imported						

		➤ Imported: China		6				
27	Digital Cathode Ray Oscilloscope	<ul style="list-style-type: none"> ➤ Band Width: 100 MHz ➤ Dual Channel ➤ Sample Rate: 1 GSa/s ➤ Screen size: approx. 7.5’’ ➤ Color: TFT LED Display ➤ Storage Capacity: 25 kB ➤ Memory Depth: upto2Mpts ➤ Imported: China 	Imported	4				
28	Sextant	<ul style="list-style-type: none"> ➤ Brass made with stand ➤ Imported: China 	Imported	3				
29	Resonance Tube Apparatus	Consisting of a resonance tube mounted on a wooden polished stand. The resonance tube is graduated in mm and cm. A meter rod is also fitted on wooden stand. The resonance tube is connected by rubber tubing to a large water reservoir. The water reservoir can be raised or lowered according to adjustment.	Imported	12				
30	To study damping features of an oscillating system	<ul style="list-style-type: none"> ➤ Complete Set 	Imported	6				

DEPARTMENT OF PHYSICS

LIST OF EXPERIMENT FOR MS LABORATORY (MATERIAL SCIENCE)

S/No	Name of Equipment	Specifications	Required Brand	Quantity	Unit Price (w/o GST)	17% GST	Unit Price with GST	G. Total (with GST)
1.	Spectrophotometer	Mode: Energy, Absorption, Transmission, Reflectance Wavelength range: 190—1100 nm Spectral bandwidth: Fix 1.4 nm Scanning speed: 12000 nm/min Wavelength accuracy (Deuterium line at 656nm): ±0.1 nm Wavelength reproducibility (with Holmium oxide filter): ≤0.02 nm Photometric reproducibility: ≤0.0005 A Baseline stability at 500 nm: ≤0.0001 (RMS) Long-term stability a 500 nm: ±0.0005 A/h Scanning speed: 12000 nm/min Cell holder: Single Cell holder Display: on Computer Cuvettes: 2 glass and 2 Quartz cell, Complete with software, Computer & Laser Printer Country of Origin Germany	Imported	1				
2.	FURNACE	Furnace Muffle digital temperature range up to 1100°C/ 2012°F digital single set point, large Chamber Size: 180x230x230mm (7" x 9" x 9") fitted with high performance HYBRID Muffle longer Life, Operated on 220v, 1300	Imported	2				

		Watt, 6 Amp. Country of Origin USA						
3.	Probe Sonicator	<u>SONICATION APPARATUS SPECIFICATIONS</u> Power Supply: Net power output: VCX 500 - 500 Watts. Frequency: 20 kHz Remote actuation compatible Dimensions (H x W x D) 9 1/4" x 7 1/2" x 13 1/2", (235 x 190 x 340 mm) Weight: 15 lbs. (6.8 kg) Converter Cable: Cable length: 6' (1.8 m). Part No. 201-0300 Standard Probe: Tip diameter: 1/2" (13 mm) with and replaceable tip Part No. 630-0220 Operated on 220 Volts Country of Origin USA	Imported	1				
.	FTIR	<u>FT-IR Spectrometer with built in Zinc Seleni optics</u> Specifications: Spectral range: 375 – 7500 cm ⁻¹ with standard KBr beam splitter 500-6000 cm ⁻¹ with high humidity ZnSe Optics Signal-to-noise ratio: typically > 50,000:1 Spectral resolution: better than 2 cm ⁻¹ , optional better than 0.8 cm ⁻¹ Wavenumber accuracy: <0.05 cm ⁻¹ @ 2000 cm ⁻¹ Wavenumber precision: <0.0005 cm ⁻¹ @ 2000 10 repeat measurement) Photometric accuracy: better than 0.1% T Interferometer: Rock Solid, Permanent aligned, high stability Optics: Sealed and desiccated, all mirrors gold coated Detector: High sensitivity DLATGS Computer interface: Ethernet	Imported	1				

		<p>Operating system: Windows XP Spectrometer power: 100 – 240 VAC, 50 – 60 Hz, 20 W (low energy consumption) <u>O/MENTOR+ OPUS/Mentor Software Package</u></p> <ul style="list-style-type: none"> • Package With • Computer and Printer <p>Country of Origin USA</p>						
5.	CENTRIFUGE	<p>Centrifuge Machine Angle Rotor Capacity 12 x 15ml tubes, and 6x 50ml digital microprocessor controlled Speed range 200 to 6000 rpm, digital display of preset and actual speeds, timer range 0 – 99hr 59 minutes and continuous run with lid lock system, automatic imbalance indication with safety shut off, ABS housing Country of Origin Germany</p>	Imported	1				
6.	Analytical Balance	<p>Electronic Analytical Balance Digital Microprocessor Controlled with Latest Uni Block Technology, Un iBlock designs replaces 70 parts of Electromagnetic balances and ensures stable results. Technical Specification: Weighting Capacity: 220gm Minimum display: 0.1mg Pan size (mm): Ø91 approx. Country of Origin, Japan</p>	Imported	2				
7.	Fume Hood	Local made for nano lab	Imported	2				
8.	OVEN	<p>Universal Oven Precise drying, Adaptive Multifunctional Digital PID-microprocessor Controller with High-Definition TFT-Color Displays</p>	Imported	1				

		Temperature range 5°C above ambient up to +300°C Single DISPLAY natural convection. Operated on 220volts: Capacity 108 Lit, interior dimension: 560 x 480 x 400 mm, with two stainless steel trays Country of Origin Germany						
9.	DIGITAL HOT PLATE	<u>Magnetic Stirrer with Ceramic Hotplate (Digital)</u> Ceramic Top plate, extremely resistant to corrosion Dimension (mm) 180 x 180mm, ceramic coated, Temperature range up to 550°C, Stirring volume up to 15 Lit Electronic speed regulation up to 1500 rpm Control knob for stirrer and digital temperature, operated on 220 Volts, 800W. Model AREC.X, With PT1000 Probe Country of Origin Italy	Imported	3				

Psychology Department

List of Testing Lab Equipment for BS/MS

S/No	Name of Equipment	Specifications	Required Brand	Quantity
1	Depth Perception Box		Imported	10

2	Memory Drum		Imported	10				
3	Illusion Cards		Imported	30				
4	Pencil Maze		Imported	10				
5	Techistoscope		Imported	3				
6	Phi-Phenomena		Imported	3				
7	Metronome		Imported	2				
8	Stop Watch		Imported	10				
9	Spiral Color Rotol		Imported	2				
10	Interval Timer		Imported	10				
11	Aesphesio meter		Imported	5				
12	Audio Signal Recorder		Imported	5				
13	Polygraph		Imported	2				
14	Critical Frequency App		Imported	10				
15	Audio Meter		Imported	5				
16	Human Skelton		Imported	5				

17	T-Maze		Imported	5				
18	Field Maze		Imported	5				
19	Audio Visual Lab		Imported	1				
20	Toner		Imported	4				
21	Animal Experiments		Imported	5				
22	Blind Spot Apparatus		Imported	20				
23	Exposure Board		Imported	30				
24	Iron Maze		Imported	20				
25	Perimeter		Imported	10				
26	Stop Watch		Imported	10				
27	After Image Cards		Imported	50				
28	Form Boards		Imported	20				
29	Brain Model		Imported	5				
30	Ear Model		Imported	5				
31	Eye Model		Imported	5				

32	Mirror Drawing Apparatus		Imported	10				
33	TAT Cards		Imported	2				
34	Muller lyer cards		Imported	20				
35	Reaction Time (Electrical)		Imported	20				

CLINICAL/ PERSONALITY TESTS REQUIREMENT

S/No	Name of Equipment	Specifications	Required Brand	Quantity	Unit Price (w/o GST)	17% GST	Unit Price with GST	G. Total (with GST)
1.	Beck Depression Inventory	Inventory, manual and scoring sheet	Imported					

2.	Depression Anxiety Stress Scale DASS	Scale manual and scoring sheet	Imported						
3.	Modern Language Aptitude Test	Scale, manual and scoring sheet	Imported						
4.	Draw-A-Person Test	Test sheet, manual and scoring sheet	Imported						
5.	Differential Aptitude Test Battery (DAT)	Test, manual, response sheet and scoring keys	Imported						
6.	Wechsler Adult Intelligence Scale -IV	Complete Test, manual, response sheet and scoring keys	Imported						
7.	Wechsler Intelligence Scale for Children	Complete Test, manual, response sheet and scoring keys	Imported						
8.	Wechsler Preschool and Primary Scale of Intelligence	Complete Test, manual, response sheet and scoring keys	Imported						
9.	Wonderlic Test	Complete Test, manual, response sheet and scoring keys	Imported						
10.	Cattell Culture Fair	Complete Test, manual, response sheet and scoring keys	Imported						
11.	Otis-Lennon School Ability Test	Complete Test, manual, response sheet and scoring keys	Imported						
12.	Stanford-Binet IQ test	Complete Test, manual, response sheet and scoring keys	Imported						
13.	California Psychological Inventory	Complete Test, manual, response sheet and scoring keys	Imported						
14.	Minnesota Multiphasic	Complete Test, manual, response sheet and	Imported						

	Personality Inventory (MMPI)	scoring keys						
15.	Myers-Briggs Type Indicator (MBTI)	Complete Test, manual, response sheet and scoring keys	Imported					
16.	Rorschach inkblot test	Complete Test, manual, response sheet and scoring keys	Imported					
17.	Sixteen Personality Factor Questionnaire or 16PF Questionnaire (16PF)	Complete Test, manual, response sheet and Scoring keys	Imported					
18.	Thematic Apperception Test	Complete Test, manual, response sheet and scoring keys	Imported					
19.	The Hand Test	Complete Test, manual, response sheet and scoring keys	Imported					
20.	Raven's progressive Matrix Colored Progressive Matrix	Complete Test, manual, response sheet and scoring keys	Imported					
21.	Standard progressive Matrix	Complete Test, manual, response sheet and scoring keys	Imported					
22.	Advanced progressive Matrix	Complete Test, manual, response sheet and scoring keys	Imported					
23.	Bender Visual Motor Gestalt (BVMG) Test	Complete Test, manual, response sheet and scoring keys	Imported					
24.	Benton visual retention test	Complete Test, manual, response sheet and scoring keys	Imported					
25.	Halstead-Reitan	Complete Test, manual, response sheet and scoring keys	Imported					

	Neuropsychological Battery								
26.	Luria-Nebraska Neuropsychological Battery	Complete Test, manual, response sheet and scoring keys	Imported						
27.	Mooney Problem Checklist	Complete Test, manual, response sheet and scoring keys	Imported						
28.	Rey-Osterrieth Complex Figure Test	Complete Test, manual, response sheet and scoring keys	Imported						
29.	SCL-90 (Symptom Checklist 90)	Complete Test, manual, response sheet and scoring keys	Imported						
30.	Wisconsin Card Sort Test	Complete Test, manual, response sheet and scoring keys	Imported						
31	Columbia Mental Maturity Scale	Complete Test, manual, response sheet and scoring keys	Imported						
32	Children Apperception Test	Complete Test, manual, response sheet and scoring keys	Imported						
33	The neonatal behavioral assessment scale	Complete Test, manual, response sheet and scoring keys	Imported						
34	ACTeRS, parent, teacher and self-report KIT	Manuals, scoring sheets, rating scales	Imported						
35	ABLLS-R Kit	Manual, response sheets, scoring sheets, rating scale	Imported						
36	Speech Cards	Cards with Manual	Imported						

Department Of Sports Sciences
LIST OF SPORTS ITEMS

S/No	Name of Equipment	Specifications	Required Brand	Quantity	Unit Price (w/o	17% GST	Unit Price with	G. Total (with
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1	Basket balls	China (Imported) Standard	Imported	3				
2	Hand Balls	China (Imported) Standard	Imported	3				
3	Volley Ball's	China (Imported) Standard	Imported	3				
4	Net Balls	China (Imported) Standard	Imported	3				
5	Volley Ball Net	Standard	Local	2				
6	Lawn Tennis Net	Standard	Local	2				
7	Lawn Tennis Poles	Standard	Local	2				
8	Netball Poles	Standard	Local	2				
9	Table Tennis Balls	China (Imported)	Imported	4 Dozen				
1 0	Lawn Tennis Racket (Steel)	China (Imported)	Imported	4				
1 1	Badminton Racket (Steel)	China (Imported)	Imported	6				
1 2	Badminton Net	Standard	Standard	2				
1 3	Shuttlecock	China (Imported)	Imported	12 Dozen				
1 4	Lawn Tennis Ball	China (Imported)	Imported	1 Dozen				
1 5	Cricket Kit	Standard		2				
1 6	Hockey	China (Imported)	Imported	16				
1 7	Hockey Ball	China (Imported)	Imported	12				
1 8	Footballs	China (Imported)	Imported	6				

1 9	Archery Equipment	Standard	Standard	-				
2 0	Chuck Ball	Standard	Standard	6				
2 1	Chuck Ball Net with Stand	Standard	Standard	2				
2 2	Gymnastic Mat	Japan	Japan	-				
2 3	Jump Board	Standard	Standard	1				
2 4	Horse For Gymnastic	Standard	Standard	1				
2 5	Karate Set	Standard	Standard	-				
2 6	Player Kit	Standard	Standard	30				
2 7	Basket Ball Net	Standard	Standard	6				
2 8	Table Tennis Racket	China (Imported)	Imported	6				

SUMMARY OF LAB REQUIREMENT

ZOOLOGY DEPARTMENT (BS+MS)

Demand for Slides (Zoology)

S/No	Name of Equipment	Specifications	Required Brand	Quantity				
1.	Epithelial tissue	Squamous	Imported	2				
2.	Epithelial tissue	Cuboidal	Imported	2				
3.	Epithelial tissue	Columnar	Imported	2				
4.	Connective tissue	Adipose	Imported	2				
5.	Connective tissue	Cartilage	Imported	2				
6.	Connective tissue	Bone	Imported	2				
7.	Connective tissue	Blood	Imported	2				
8.	Nervous tissues	Neuron	Imported	2				
9.	Muscle tissue	Skeletal	Imported	2				
10.	Muscle tissue	Smooth	Imported	2				
11.	Muscle tissue	Cardiac	Imported	2				
12.	Euglena	Whole mount	Imported	2				
13.	Plasmodium,	Whole mount	Imported	2				
14.	Trypanosoma,	Whole mount	Imported	2				
15.	Entameoba	Whole mount	Imported	2				
16.	Paramecium	Whole mount	Imported	2				
17.	Ameoba	Whole mount	Imported	2				
18.	Thyroid gland	T.S	Imported	2				
19.	Pancrease	T.S	Imported	2				
20.	Ovary	T.S	Imported	2				
21.	Testis	T.S	Imported	2				

Specimen's cost for BS/MS

S/No	Name of Equipment	Specifications	Required Brand	Quantity
1.	Leucosolenia	Preserved	Imported	1
2.	Sycon	Preserved	Imported	1
3.	Euplectella	Preserved	Imported	1
4.	Cliona	Preserved	Imported	1
5.	Spongilla	Preserved	Imported	1
6.	Hydra	Preserved	Imported	1
7.	Physalia	Preserved	Imported	1
8.	Aurelia	Preserved	Imported	1
9.	Red coral	Preserved	Imported	1
10.	sea pen	Preserved	Imported	1
11.	Sea anemone	Preserved	Imported	1
12.	Liver fluke	Preserved	Imported	1
13.	Tapeworm	Preserved	Imported	1
14.	Planaria	Preserved	Imported	1
15.	Ascaris	Preserved	Imported	1
16.	Wucheria	Preserved	Imported	1
17.	Rhabditis	Preserved	Imported	1
18.	Trichninella	Preserved	Imported	1
19.	Brachious	Preserved	Imported	1
20.	Chiton	Preserved	Imported	1
21.	Helix	Preserved	Imported	1
22.	Mussel	Preserved	Imported	1
23.	Scallop	Preserved	Imported	1
24.	Squid	Preserved	Imported	1
25.	Cuttle fish	Preserved	Imported	1

26.	Octopus	Preserved	Imported	1				
27.	Nautilus	Preserved	Imported	1				
28.	Neries	Preserved	Imported	1				
29.	Leech	Preserved	Imported	1				
30.	Earthworm	Preserved	Imported	1				
31.	Prawn	Preserved	Imported	1				
32.	Cray	Preserved	Imported	1				
33.	Rock crab	Preserved	Imported	1				
34.	Centipede	Preserved	Imported	1				
35.	Millipede	Preserved	Imported	1				
36.	Scorpion	Preserved	Imported	1				
37.	Spider	Preserved	Imported	1				
38.	Horseshoe crab	Preserved	Imported	1				
39.	Cockroach	Preserved	Imported	1				
40.	Grasshopper	Preserved	Imported	1				
41.	Dragon fly	Preserved	Imported	1				
42.	Star fish	Preserved	Imported	1				
43.	Feather star	Preserved	Imported	1				
44.	Brittle star	Preserved	Imported	1				
45.	Sea urchin	Preserved	Imported	1				
46.	Sand dollar	Preserved	Imported	1				
47.	Sea cucumber	Preserved	Imported	1				
48.	Balanoglossus	Preserved	Imported	1				
49.	Rhabdopleura	Preserved	Imported	1				
50.	Cephalodiscus	Preserved	Imported	1				
51.	Ciona	Preserved	Imported	1				
52.	Amphioxus	Preserved	Imported	1				
53.	Lamprey	Preserved	Imported	1				
54.	Hagfish	Preserved	Imported	1				
55.	Scolidon	Preserved	Imported	1				
56.	Hammer headed	Preserved	Imported	1				

	Shark							
57.	Saw fish	Preserved	Imported	1				
58.	Skate	Preserved	Imported	1				
59.	Chimaera	Preserved	Imported	1				
60.	Polypterus	Preserved	Imported	1				
61.	Sturgeon	Preserved	Imported	1				
62.	Gar-pike	Preserved	Imported	1				
63.	Salmon	Preserved	Imported	1				
64.	Rohu	Preserved	Imported	1				
65.	Snake headed Fish	Preserved	Imported	1				
66.	Eel	Preserved	Imported	1				
67.	Flying fish	Preserved	Imported	1				
68.	Sea horse	Preserved	Imported	1				
69.	Lung fish	Preserved	Imported	1				
70.	Salamander	Preserved	Imported	1				
71.	Toad	Preserved	Imported	1				
72.	Frog	Preserved	Imported	1				
73.	Caecilian	Preserved	Imported	1				
74.	Tortoise	Preserved	Imported	1				
75.	Turtle	Preserved	Imported	1				
76.	Tuatara	Preserved	Imported	1				
77.	Draco	Preserved	Imported	1				
78.	Chameleon	Preserved	Imported	1				
79.	Rattle snake	Preserved	Imported	1				
80.	Cobra	Preserved	Imported	1				

STUFFED ANIMALS

S/No	Name of Equipment	Specifications	Required Brand	Quantity
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1.	Flamingo	Stuffed	Imported	1				
2.	Vulture	Stuffed	Imported	1				
3.	Peacock	Stuffed	Imported	1				
4.	Pigeon	Stuffed	Imported	1				
5.	Parrot	Stuffed	Imported	1				
6.	Owl	Stuffed	Imported	1				
7.	Woodpecker	Stuffed	Imported	1				
8.	Hummingbird	Stuffed	Imported	1				
9.	Duck-billed Platypus	Stuffed	Imported	1				
10.	Spiny anteater	Stuffed	Imported	1				
11.	Hedgehog	Stuffed	Imported	1				
12.	Shrew	Stuffed	Imported	1				
13.	Pangolin	Stuffed	Imported	1				
14.	Squirrel	Stuffed	Imported	1				
15.	Porcupine	Stuffed	Imported	1				
16.	Mongoose	Stuffed	Imported	1				

REQUIREMENT OF LAB EQUIPMENT FOR MS

S/No	Name of Equipment	Specifications	Required Brand	Quantity
1.	Autoclave	Autoclave Digital Microprocessor Controlled Vertical Unit Temperature Range 105 to 135° C Interior Chamber Stainless steel, capacity 50 Lit interior chamber dimension 300x710 D mm , with Built in Timer 1 to 250 Minutes and Pressure Gauge 0 to 0.4 mpa, Selected	Imported	1

		Modes for Liquid and Solids and Agar Process, Complete with stainless Steel Baskets operated on 220 Volts accessories. Japan						
2.	BP Apparatus	Mercury, China	Imported	5				
3.	Centrifuge Machine	<p>High Speed Refrigerated Centrifuge Machine 230 V 50 Hz, maintenance free brush-less motor with a speed range of 30000 rpm and G force 65390 universal speed range for swing-out and angle rotors, microcontroller with automatic rotor identification, LCD</p> <p>Specifications:</p> <ul style="list-style-type: none"> • Maintenance-free induction drive • Microprocessor with large LCD display • Motor driven lid lock • Automatic rotor identification system with over speed protection, immediately upon rotor insertion • Active imbalance-identification and -cut off (rotor specific) • Imbalance tolerant drive • CFC free refrigeration system • A large variety of rotors and accessories • Manufactured according to international safety regulations, i.e. IEC 1010 • Audible signal at the end of each run with several melody options • Rotor exchange is easy to handle • Noise level under 60 dBA at max. speed Angle Rotor capacity 6 x 50 ml speed 21000 rpm, with adaptors of 6 x 15ml • Made in Germany. 	Imported	1				
4.	Centrifuge- room temperature	<p><u>Centrifuge Machine</u> Digital microprocessor controlled with large LCD display, Speed range 200 to 15000 rpm, Maximum RCF 21380</p>	Imported	1				

		<p>x g Capacity 24 x 1.5 ml or as per rotor, with following features:</p> <ul style="list-style-type: none"> - Automatic motor driven lid lock. - Maintenance free induction drive -Active imbalance- identification and cut of - Storage up to 99 programmes. - Pre selection of the running time range 99 59 minutes. - Selection of speed in both rpm and G-force - Quick Key for short Runs -10 acceleration & deceleration rates -Audible signal at the end of each run Complete with Angle Rotor capacity 24 x 1.5 ml <p>Speed 15000rpm, and Strip for above rotor Operated on 220 Volts, Germany</p>						
5.	Centrifuge (Temp Controlled)	<p>High Speed Refrigerated Centrifuge Machine Made in Germany.</p> <p>Specifications:</p> <ul style="list-style-type: none"> • Maintenance-free induction drive • Microprocessor with large LCD display • Motor driven lid lock <p>Automatic rotor identification system with over speed protection, immediately upon rotor insertion</p> <ul style="list-style-type: none"> • Active imbalance-identification and -cut off (rotor specific) • Imbalance tolerant drive • CFC free refrigeration system • A large variety of rotors and accessories • Manufactured according to international safety regulations, i.e. IEC 1010 • Audible signal at the end of each run with several melody options • Rotor exchange is easy to handle • Noise level under 60 dBA at max. Speed <p>1-No. Angle Rotor capacity 24x1.5ml/2.0ml Speed</p>	Imported	1				

		15000rpm 1-No. Angle Rotor capacity 6x85ml Speed 13500rpm With adaptors of 50ml Falcon tube & 15ml Falcon tube Complete with above Rotors operated on 220 Volts, • Made in Germany						
6.	Digital Camera	20 MP, Japan	Imported	1				
7.	Dissection Boxes	Made in Pakistan	Imported	15				
8.	Dissecting Wax Tray	Made in Pakistan	Imported	10				
9.	Distillation plant	Distillation Apparatus all glass Borosilicate Glass fitted with metal element 3 KW capacity 4 Litre per hour, conductivity 4 μ s/cm, PH 5.5 to 6.5, Germany	Imported	1				
10	Eppendorf Centrifuge	Microliter Centrifuges Unlike traditional mini centrifuges, the Z 130 M eliminates	Imported	1				
11	EC Meter	Conductivity Meter Digital Bench Top Microprocessor Controlled with parallel temperature indication, Conductivity Range 0.0 us/cm 1000 ms/cm, Accuracy 0.5%, Temperature Range -5.0 to +105.0°C, Salinity 0.0-70 TDS 0-1999 mg/l, Reference Temperature 20 or 25°C Selecta with following accessories. a):Conductivity Electrode with built Temperature Sensor b):Electrode Stand with Base c):Standard solution 50 ml Germany	Imported	1				
12	Electrophoresis horizontal	Mini Gel Electrophoresis Horizontal unit dimension 20 x 9.5 x 8.5cm (LxWxH), Silicone rubber prevents any leakage, UV Transparent whole unit include lid to monitor the movement of bands during	Imported	1				

		<p>Electrophoresis, easy lid removal, Run up to 30 samples at once complete system with UV Tray 10 x 7 cm, one Comb for 10 samples thickness 1.00 mm and one comb for 15 samples thickness 1.00 mm with lead USA</p> <p>WITH Electrophoresis Power Supply, compact space saving & light weight design, touch panel, audible & visible alarm, status alarm, constant voltage or current, safety features includes, no load detection, over voltage protection, automatic recovery after power dimension 320x240x73mm, digital voltage range 10 – 300Vin 1 Volt step, current 4–400 mA in 1mA steps 7 max,design4 parallel outputs, with timer co 999 minute. USA</p>						
13	Electrophoresis Vertical	<p>Vertical Gel Electrophoresis able to make and runs two gels simultaneously. Maximumgel size 8 x 11cm, gel thickness0.75 mm, minimum buffer volume internal 250 ml, and minimum buffer volume external 500 ml, g tank dimension: 20 x 13 x 16.5cm. Injection moulded unit, compact design, complete unit includes Electrophoresis tank casting module 2-set, glass plates 5-sets, 0.75mm spacer 4-Nos., 0.75 mm 10 teeth combs 2-Nos., one gel plate, alignment cord, Glass plate separator and instruction manual, Made in USA.</p> <p>WITH Electrophoresis Power Supply, compact, space saving</p>	Imported	1				

		& lightweight design, touch panel, audible & visible alarm, status alarm, constant voltage or current, safety features includes, no load detection, over voltage protection, automatic recovery after power failure, dimension 320x240x73mm, digital range 10 – 300Vin 1 Volt step, current 4–400 mA in 1mA steps 75 Watt max, design4 parallel outputs, with timer control 0–999minute,						
14	Freezer, -20 degree C	<u>Biomedical Freezer (Upright type) Direct Cooling Specification</u> Interior Dimension:490(W) x 485(D) x 1290(H) Capacity:274 litres / 9.7 cu.ft. Cooling range:-20°C to -30°C Baskets: 4 Large, 1small Insulation: HCFC-Free polyurethane formed-in-place Alarm system: High/low temperature alarm (adjustable),ct Calibration: Zero adjustment via control panel holders and baskets Korea	Imported	1				
15	Fume hood	<u>Fume Hood with built in Gas & Water Valves Specifications:</u> External Dimensions 1200 x 873 x 1500 mm(W x D x H) Internal Dimensions 1120 x 682 x 1435 mm(W x D x H) Sash Specification Sash Material: Tempered Laminated and Framed Sash Glass Sash Configuration: Vertical Complete unit with base storage cabinet Japan	Imported	1				
16	Gel Column for chromatography	<u>HPLC Column</u> BDS C18 150 x 4.6mm 5µ Japan	Imported	1				
17	Gel- documentation	<u>Gel Documentation & Analysis System Specification: - Camera</u> Sensor: 1/3 inch Resolution:3 million pixels Bit depth: 12/16bit (extended) illumination	Imported	1				

		UV transilluminator 20 x 20cm White Epi overhead Complete with Gene Sys Image Software & Gene Tools Software With Computer and Laser Printer Japan						
18	Heating Oven	Universal Oven Precise drying, Adaptive Multifunctional Digital PID- microprocessor Controller with High-Definition TFT-Color Displays Temperature range 5°C above ambient up to +300°C Interior Stainless Steel & Textured Stainless Steel Casing Operated on 220volts, UN Series. Capacity 108 Lit, interior dimension: 560 x 480 x 400 mm, with two stainless steel Tray Germanys,	Imported	1				
19	Hot Plate Stirrer	<u>Magnetic Stirrer with Ceramic Hotplate (Digital)</u> Ceramic Top plate, extremely resistant to corrosion Dimension (mm) 180 x 180mm, ceramic coated, Temperature range up to 550°C, Stirring volume up to 15 Lit Electronic speed regulation up to 1500 rpm Control knob for stirrer and digital temperature, operated on 220 Volts, 800W. Japan	Imported	1				
20	Heating stand (Tripod)	Multiple-position hot plate stirrer with four separately controlled stirring plates The AM4 is a multiple-position heating magnetic stirrer with four separately controlled stirring plates. The aluminum alloy heating plates are coated with a special protective layer and ensure uniform heat distribution and excellent resistance to chemicals. <u>Technical Data GENERAL FEATURES</u> Construction material: epoxy painted metal structure Heating plate: aluminium alloy coated with a special	Imported	1				

		protection Heating plate diameter:155 mm Stirring positions:4 Power:2550 W Weight:8.3 Kg (18.2 lb) Dimensions (WxHxD):715x115x246 mm (28.1x4.5x9.7 in) Japan						
21	Incubator	Incubator Adaptive multifunctional Digital PID- Microprocessor controller with High- Definition TFT-Color Display Temperature range 10°C above ambient up to +80°C Operated on 220volts, IN Series Capacity 108 Lit, interior dimension: 560 x 480 x 400 mm, with Two stainless steel trays Japan	Imported	1				
22	Ice Machine	Ice Flake Maker Kind of ice: flake Production (Kg/24h): 90 Bin capacity (Kg): 20 Water consumption (litres/Kg): 1 (version A), 6,3 (version W) Refrigerant: R404a CFC-free Noise level (dB (A)): ≤ 50 Japan	Imported	1				
23	Laminar Flow	(Country of Origin: China) Technical Specifications: Exterior Dimensions 1220*650*920 (W x D x H (mm)) Work Zone Dimensions 1120*490*575 (W x D x H (mm)) Work Zone Height: 40 (cm) Controller: Switch Blower: AT Blower HEPA Filter:H13,≥99.99% (@≥0.3µm) Japan	Imported	1				
24	Microtome with accessories	Microtome small type Rotary for sectioning wax embedded specimen in measured thickness between 1 – 25 micronadjustable, minimu	Imported	1				

		thickness 1 micron, cutting angle 10-50 angle object clamp opening 29 x 24mm, standard accessories specimen supper (Larg Medium and Small) section carrying belt with 150 mm knife size 30 x 30 x 40cm, Japan						
26	Magnetic Stirrer	Hot Plate with Magnetic Stirrer Temperature range: up to 370°C, Variable Speed Control: upto 1200rpm Heating Plate Ø: 155mm, Stirring capacity: 15 liter, Germany	Imported	1				
27	Microwave	1.8 Cu ft Made in Japan	Imported	1				
28	Orbital Shaker	Orbital Shaker With digital display of speed and timer separately Compact, flat agitator with ideal swivel motion. Electronic Adjustment of speed and time An LCD display makes it possible to read the speed and time setting. Dimensions: WxHxD mm 430x360x106, Orbital diameter 10 mm Continuous operation working time from 1-999 minutes. Platform size 12 x 12inch Speed range adjustable from 0 –350 rpm. Capacity to hold of various sizes USA	Imported	2				
29	pH meter	PH Meter Digital Bench Model Microprocessor Controlled With parallel Temperature indication, PH Range -2.0 to 20.0 ±0.005pH, PH Resolution 0.005pH, MV Range ±1200.0mV, Accuracy mV ±- 0.3mv, Automatic Temperature Compensation, Temperature Range –5 to +105.0°C, Temperature accuracy ±0.1°C with two/three Point Calibration System, USA	Imported	1				
30	Pippetman Set	Micro pipettes Adjustable	Imported	3				

		<p>Pipette set of three</p> <p>a) Measuring Range 2 to 20µl Accuracy ± 0.1µl</p> <p>b) Measuring Range 50 to 200µl Accuracy ± 0.5µl</p> <p>c) Measuring Range 200 to 1000µl Accuracy ± 3.0µl</p> <p>Made in France</p>						
31	PCR	<p><u>PCR Machine/Thermal Cycler Gradient</u></p> <p>Technical Specification: Sample Capacity: 96 x 0.2mL tubes Programmable Temperature Range: 4°C to 99.9°C Temperature Control: Calculated or block Temperature Accuracy/Uniformity: ±0.5°C/±0.5°C Heating/cooling method: Peltier Gradient temperature range: 30°C to 99°C. Temperature of 6-segment blocks can be set independently.</p> <p>UK</p>	Imported	1				
32	Refrigerator 4 degree	<p>Refrigerator / Cold Cabinets</p> <p>Specification: Temperature control: 2°-14°C Temperature display Digital (1° C increments) Interior dimensions: 720W x 35 x 1435H mm External Dimensions 800W x 465D x 1800H mm Effective capacity: 340 liters (12.0 cu.ft.) Insulation polyurethane foam Doors: Double Glass Glazing Defrosting heaters 101 W Korea</p>	Imported	1				
33	Rotary	<p><u>Rotary Evaporator Model Hei-VAP</u></p> <p>Value HL Digital Technical</p> <p>Specification: - Hand / Motor lift Hand lift Rotation speed (rpm): 20 – 280 Rotation speed setting Scale</p> <p>Technical Specification Number of Head / Stages 2 Maximum Pumping Speed : 0.75 m³/h / 0.9 m Ultimate Vacuum: 12 mbar</p>	Imported	1				

		<p>Ultimate Vacuum with Gas Ballast 20 mba Operated on 220 Volts Model MZ1C Vacuubrand Made in Germany b.Chillerwith air-cooled refrigerating unit a circulation pump. . Technical Features: Temperature range:-20...40 (80)°C Temperature adjustment: Digital Temperature indication Digital Internal temperature sensor: PT100 Resolution of display: 0.1K Max. Delivery :14 l/min Germany</p>						
34	Slide Warmer	260x200x85mm USA	Imported	1				
35	Spectrophotometer UV	<p>UV/Vis Spectrophotometer Secord Plus Secord 200 Plus Double beam spectrophotometer with fixed spectral resolution Mode: Energy, Absorption, Transmission, Reflectance Wavelength range:190—1100 nm Spectral bandwidth: Fix 1.4 nm Scanning speed: 12000 nm/min Wavelength accuracy (Deuterium line at 656nm):± 0.1 nm Wavelength reproducibility (with Holmium oxide filter):≤0.02 nm Photometric reproducibility:≤ 0.0005 A Baseline stability at 500 nm:≤ 0.0001 (RMS) Long-term stability a 500 nm: ±0.0005 A/h Scanning speed: 12000 nm/min Cell holder:Single Cell holder Display:on Computer Cuvettes:2 glass and 2 Quartz cells Complete with software, Computer & Laser Printer Japan</p>	Imported	1				
36	Soxhlet Apparatus with Extractor(500ml	<p>Soxhlet Extraction Apparatus For Fat-Extraction R 104 S for 4 samples, complete consisting of:</p>	Imported	1				

	Flask)	<p>1 Linear row of four individually adjustable hotplates Temperature controlled.</p> <p>1 Condenser cooling water distributor with condenser stand, KV 4/R-100</p> <p>1 Holder for the extractors, GH 4/100 4 Aluminum adapters 100/94 for flasks 4 250 ml round-bottom flasks, RK 250 4 100 ml Soxhlet extractors with drain spigot, EZ 100/H</p> <p>4 Reflux condensers, RFK 100</p> <p>1Pack of 25 extraction thimbles, EX 100 HS</p> <p>Japan</p>						
37	Sonicator	<p><u>Ultrasonic Cleaning Bath with Plastic Lid</u></p> <p>Product description:</p> <ul style="list-style-type: none"> - Temperature-controlled ultrasonic operation: - Splashwater-proof operating panel. - Temperature setting between 30 C°, and 80C°, variable in 5 C°, steps. - Automatic switch-off after 12 h operation to prevent unintended permanent operation. <p>Technical Specifications:</p> <ul style="list-style-type: none"> - Tank max.(litre) = 2.75 - Tank internal dimensions = 240x137x100 mm - Ultrasound frequency (kHz) = 37 - Mains voltage = 220V USA 	Imported	1				
38	Probe Sonicator	<p><u>SONICATION APPARATUS SPECIFICATIONS</u></p> <p>Power Supply: Net power output: VCX 500 - 500 Watts.</p> <p>Frequency: 20 kHz</p> <p>Remote actuation compatible Dimensions (H x W x D) 91/4" x 71/2" x 131/2"(235 x 190 x 340 mm) Weight: 15 lbs. (6.8 kg)</p> <p>Converter Cable:</p>	Imported	1				

		Cable length: 6' (1.8 m). Part No. 201-0300 USA						
39	Thin layer chromatography apparatus	<p><u>TLC Basic Kit</u> including UV Cabinet for qualitative and quantitative TLC using conventional layers, consisting of: 022.4730, CAMAG Nanomat 4, without capillary pipettes and holder.022.7650 CAMAG Capillary Dispenser complete with Universal Capillary Holder 022.7786, one Dispenser Magazine for 1 µL Capillary Pipettes 022.7761 and one pack of 5 x 100 Disposable Capillary Pipettes 1 µL 022.7771 022.7662: Dispenser Magazine for 2 µL Capillary Pipettes 022.7665 Dispenser Magazine for 5 µL Capillary Pipettes 022.7772 Disposable Capillary Pipettes 2µL, pack of 5 x 100 022.7775 Disposable Capillary Pipettes 5µL, pack of 5 x 100, 022.5256 CAMAG Twin Trough Chamber 20 x 20 cm, with stainless steel lid 022.5243 Saturation pads, pack of 200, 022.6100 CAMAG Reagent Sprayer, all glass 034.5715 Precoated plates Merck Silica gel 60 F254,20 x 20 cm, pack of 25, 032.8001 CAMAG Test Dye Mixture I, 30 mL, 022.9070 CAMAG UV Cabinet 3 consisting of 022.9120 UV Lamp dual wavelength, 254/366 nm, 8W each. Germany</p>	Imported					
40	Vortex mixer- 24 tubes	<p><u>Vortex Mixer</u> Vibrating motion continuously analog dial speed control Operated on 220 Volts,</p>	Imported	2				
41	Water Bath shaker	<p><u>Shaking Water Bath Memmert</u>, Basic class for standard temperature control tasks, the Excellent version provides precise test procedures with a</p>	Imported	1				

		<p>maximum of safety: electronic over temperature control and a wide range of visual and acoustic signals.</p> <ul style="list-style-type: none">• Temperature range min. 5 °C above ambient up to +95 °C with additional						
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