



Mahatma Gandhi University, Kerala

Supply & Installation of the Scientific Equipment- Class II Biosafety Cabinet, Micropipette, 32 well PCR, Analytical balance, Midi Submarine Electrophoresis Unit, Magnetic stirrer (2 No.s), Fumehood (Table top), Vortex Shaker.

SI.No	Qty.	Equipment Name	Particulars
1.	1 No	Class II biosafety cabinet	<ul style="list-style-type: none">• Classification : class II (Vertical Flow) (70%recirculation, 30%exhaust) or better• Main filter : HEPA, Particle retention size up to 0.3 micron or better• Efficiency: 99.999% or better• Pre Filter : particle retention size up to 0.3 micron or better : Efficiency: 99.999%• Work table : SS, having perforations at the front and back edges• UV Light : UV Lamp of suitable length with one additional set• Illumination : FL Lamp of suitable length with one additional set• Switches : ON/off For Blower, UV, FL• Pressure Gauge : Magnehelic Gauge• Pet Cock : SS Petcock for air/gas• Front door : Single piece sliding upwards with counterweight• Stand : square pipe mounting stand with leveling jacks• Work Table size : 60 mm x 60 mm x60 mm or better• Supply : 220-230 Volts AC

			<ul style="list-style-type: none"> Standards : Validated as per ISO 14644 Stainless Steel Cabinet 3 year warranty
2.	1 No. s each	Micropipette	<ul style="list-style-type: none"> volume range- 0.2-2 μL ,2-20 μL, 20-200 μL, 100-1000 μL Fully autoclavable With tip boxes of all size (2 nos each) and two packs tips for each volume With suitable pipette stand Large display 3 year warranty
3.	1 No.	32 Well PCR machine	<ul style="list-style-type: none"> 32 well block for 0.2ml tubes Temperature range of 4-100°C with Temperature Accuracy: $\pm 0.2^{\circ}\text{C}$ & or better Temperature Uniformity : ± 0.2 or better Heating Rate: 5°C/Sec & or better Cooling Rate: 4°C/s or better Thermal Gradient differential Range 1-30°C with 12 temperature zone gradient functionality without sacrificing uniformity in each block with temperature range 30-100°C Scalable hot lid to fit tubes of different heights Hot Lid temperature range 30-110°C (Adjustable Default 105°C), Display Size 5 inches with Display Type Full Touch LCD Volume should be 10-100 μL

			<ul style="list-style-type: none"> • One-click quick incubation function • On board Tm calculator facility to approximate the optimal annealing temperature • Built-in standard program file templates; can quickly edit the required files • Choice of saving the methods • The ability to store methods on a memory stick • Allows easy product updates via USB port • Auto restart option in event of Power failures, • Other Features: Gradient Calculator, Tm Calculator, operation log, Email alerts, GLP reports, fault information • 3 year warranty
4.	1 No.s	Analytical balance	<ul style="list-style-type: none"> • capacity- 220 gms • readability- 0.001g or better • volts- 12 Vdc • repeatability- ≤ 0.001 gms or better • Linearity- ± 0.002gms or better • Response time- 1.0-1.2 secs or better • Ambient temperature- 5-40°C or better • Temperature coefficient of sensitivity- ± 3ppm/°C or better • Pan size- 100x100mm or better • Dimensions- 170W x 240D x 75 H (mm) or better • Power requirements- AC adapter; 90V-264V, $\pm 10\%$, 50/60Hz

			<ul style="list-style-type: none"> • Standard accessories- Simple windbreak, Protective in-use cover • LCD display • 3 year warranty (including all accessories)
5.	1 No.	Midi submarine electrophoresis unit and power supply unit	<ul style="list-style-type: none"> • Unit with buffer chamber length • safety lid with cables • UV transparent tray • 15 & 20 well comb with 1.5 mm thick (2 number) • Casting tray- 15x10 cm and 7x10 cm (2 number each) • 2 set comb for each (15x10 cm and 7x10 cm) tray • 3 year warranty <p>Electrophoresis power supply unit</p> <ul style="list-style-type: none"> • Can run two units at constant voltage or constant current • Timer- minute increment and continuous mode • Maximum output- 300V, 400 mA and 80 watts • Can be used with midi submarine electrophoresis unit • 3 year warranty
6.	2 No.s	Magnetic Stirrer	<ul style="list-style-type: none"> • Top plate dimension- 18 x18 cm • Top plate material- ceramic • Heating temperature- 50-500°C • Maximum load- 11 kg, 5L or better • Stirring speed range- 100-1200 rpm or better

			<ul style="list-style-type: none"> • Dimension (W X H X D) - 32 X 24 X 12 cm or better • PTFE coated magnetic beads – 8 x 22 mm (5 nos), 8 x 14 (5 nos) • 3 year warranty
7.	1 No.	Fumehood (Table top)	<ul style="list-style-type: none"> • Cupboard type • Working Table :(L X D X H 4' x 2' x 3', Outer Size : L X D X H]: 50 ½ X 26 ½ X 72 appro. • MS Powder coated and FRP lining (acid or alkali resistant) inside of the cupboard • sliding door made of U.V stabilised polycarbonate sheet with counter balanced weight system • Fluorescent lights should be provide inside the chamber • Working Table :L X D X H 4' x 2' x 3' or better • Outer Size : L X D X H: 50 ½ X 26 ½ X 72 appro. • Working top should be of Granite • One FRP zinc of small size, water tap and gas cock are also provided inside the chamber • Major blower exhaust system (Blower and blower cover is made with FRP) provision for connecting 4" dia PVC pipe on the top of the instrument • 3 drawers on one side and a closed storage area with a provision for locking system beneath the working area • 3 year warranty

8.	1 No	Vortex Shaker	<ul style="list-style-type: none">• Compact, rugged construction• Heavy metal base and rubber feet• Variable speed control• Maximum speed- 3000 rpm• Includes one hand insert, micro tube insert and cup attachment• Continuous and touch mode• Variable speed controller• 3 year warranty
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