

Applied Physics lab I & II

S. No	Specification	Qty
01.	<p><u>e/m of electron by Magnetic focusing (Thomson Method)</u></p> <p>The set up should have</p> <p>Microcontroller based power supply & measurement unit</p> <p>Cathode Ray Tube mounting on acrylic stand</p> <p>Deflection magnetometer</p> <p>Pair of bar magnet and Compass Box</p> <p>Cathode Ray Tube:</p> <p>Distance between Plates : $d = 1.4 \text{ cm}$;Length of Plates : $l = 3.23 \text{ cm}$</p> <p>Distance between Screen & plates (edge): $L = 14.5 \text{ cm}$</p> <p>Focusing Voltage : Variable 0 - 300 V DC</p> <p>Intensity Adjustment Voltage : Variable 0 - 60 V DC</p> <p>Deflection Voltage : Variable 0 - 50 V</p> <p>Scale : 0 - 30 cm each side</p> <p>CRT connection with power supply : Octal socket</p> <p>Display power supply : LCD : 16 x 2 Characters</p> <p>Deflection magnetometer : 0 to 90° (Four Quadrant)</p> <p>Mains : 230 VAC $\pm 10\%$, 50 Hz</p> <p>Fuse : 500 mA</p>	05
02.	<p><u>Lissajous Pattern Trainer</u></p> <p>Study of Lissajous figures ,Unknown frequency calculation ,</p> <p>RLC resonance frequency calculation ,Phase Difference calculation using Lissajous figures.</p> <p>On Board DC Supply : +12 V, 500 mA</p> <p>Signal Generators : 02 nos</p> <p>Frequency : 10 Hz to 100 kHz</p> <p>Amplitude : 0 to 5Vpp</p> <p>Mains Supply : 230V$\pm 10\%$, 50Hz</p> <p>On Board Passive component network for generating Phase difference</p>	05
03.	<p><u>Planck's constant set up using LED</u></p> <p>The trainer should have</p> <p>Super bright LEDs , LCD for current and voltage measurement</p> <p>Variable DC Supply (0-5 Volt)</p> <p>DC Power Supply : 0-5 V</p> <p>LED Type : Super bright ; Size : 5 mm</p> <p>Colours : Blue, Green, Orange, Red and Yellow</p> <p>DC Voltmeter 3½ digit LCD ;Multi Range : 200 mV - 200 V</p> <p>DC Ammeter : 3½ digit LCD ;Multi Range : 2 μA- 200 mA</p> <p>Interconnections: 2mm ;Patch cords : 2 mm banana stackable Mains : 230 V AC $\pm 10\%$</p> <p>(Detachable mains chord to be provided)</p> <p>Fuse : 0.5 A</p> <p>Trainer should be on Legend PCB with no components on the top of board. Housed in a Moulded case with moulded cover on top.</p>	05

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04.	<p><u>Setup to to calibrate a voltmeter & Ammeter by a Potentiometer.</u></p> <p>The set up should consist of :</p> <p>Standard Calibrated Digital Voltmeter & Ammeter</p> <p>Trainer board with Ammeter & Voltmeter to be calibrated ,</p> <p>Potentiometer</p> <p>Technical Specifications</p> <p>Analog Voltmeter : 0 - 10 V ;Analog Ammeter : 0 - 1 A</p> <p>Potentiometer Wire : Constantan ;Length : 10 m</p> <p>DC Supply (Standard) : 1.016 V</p> <p>Variable Resistance : 3 – Decade : X0.1 , X 1 , X 10</p> <p>Voltage Ratio Factor : 0, 1.5, 15, 30, 150, 300</p> <p>Total Resistance : 15 k</p> <p>Variable Supply : 0 - 12 V</p> <p>Mains Supply : 230 V $\pm 10\%$, 50 Hz</p> <p>Fuse : 0.5 A</p>	05

S.No	Specification	Qty
05.	<p><u>To determine Frequency of A.C. Mains using Sonometer</u></p> <p>Complete setup should be mounted on a metal box. Circuit Diagram should be printed on the top of box Sonometer should be provided with weights Height adjustment for Electromagnet Inbuilt AC supply Length of wire : 88cm ;Weight of wire : 0.0018kg (approx.) Weight (6 nos.) : 0.5kg (each) Power Supply : 230V \pm10%, 50Hz AC Power Supply : 6V, 500mA Coil : No. of Turn : 800 ; Wire dimension: 0.404 Maximum current : 0.363 Amps ;Inductance (apprx) : 9.2 mH</p>	05
06.	<p><u>Determine the frequency of electrically maintained tuning fork by Melde's method (complete setup)</u></p> <p>Complete setup should be mounted on a metal box. Circuit Diagram should be printed on the top of box Setup should be provided with weights Adjustment for magnet Inbuilt AC supply Length of wire : 88cm ;Weight of wire : 0.0018kg (approx.) Weights: 1 gram, 2 gram & 5 Grams Mains Power Supply : 230V \pm10%, 50Hz AC Power Supply : 6V, 500mA Coil : No. of Turn : 800 ; Wire dimension: 0.404 Maximum current : 0.363 Amps ;Inductance (apprx) : 9.2 mH</p>	05
07.	<p><u>Newton's-Ring Apparatus</u></p>	05
08.	<p><u>Flywheel Apparatus</u></p>	05
09.	<p><u>Step Down Transformer</u></p>	05
10.	<p><u>Vernier Callipers</u></p>	20