



“Electricity Lab” is a versatile training kit for a laboratory. It is designed such that all the basic electrical circuits can be tested with the help of this trainer kit. The experiments given with training system develop mental starting from an introduction to the circuit, basic fundamentals and experiments on Ohm's Law, Magnetism, Relay, Power, Lenz's Law, Motors, Diode, Kirchoff's Law, R, L, C and many more. This simple training lab provides a strong foundation for future studies in electrical or electronics. This takes students from the basic of ohm's law, through simple series and parallel circuit analysis and into same elementary aspects of electronics where they will build circuits using capacitors and diodes. With this system a set of coils and cores are provided. These high quality coils (Labeled with number of turns) and laminated iron cores provides an effective introduction to electromagnetic theory.

Specifications:

01. Meters: 5 Nos.
 - 1.1. AC Voltmeter : 15V
 - 1.2. DC Voltmeter : 15V
 - 1.3. Galvanometer : $\pm 250\mu\text{A}$
 - 1.4. DC Ampere Meter : 0.6Amp
 - 1.5. DC Ampere Meter : 5A
02. Power Supply:
 - 2.1. Power Supplies : 3, 6, 12Vat 3.5A
 - 2.2. Power SupplyAC : 30Vat1A
 - 2.3. Power SupplyDC : 5Vat100mA
03. Switch SPDT
04. Switch DPDT
05. Push switch
06. Logic Switches Two No. Push type
07. Relay 12VDCOne change over
08. Buzzer/Electric Bell
09. Transformer Input 6-0-6V and Output 6-0-6V
10. Bulb6VThree Nos.
11. Resistance 1E2/1W, 5E/5W, 50E/5W,100E/5W, 220E/2W, 470E/2W, 1K/1W, 100K/1W
12. Capacitance 1000MFD/25VTwo Nos.
13. Diode IN4007Two Nos.
14. LED5mm
15. Thermocouple
16. Potentiometer 10K
17. Breadboard 840Tie Points
18. Fuse Holder open type
19. Electromagnetic Induction&Transformer
20. Main Supply 230VAC, 50 Hz



Experiment Coverage:

To Study/ Experiment the following:

01. Electricity by Chemical Action
02. Electricity by Heat
03. Electricity by Magnets
04. Conductors and Insulators
05. Resistor Colour Code
06. Resistors in series combination
07. Resistors in Parallel combination
08. Resistors in series and Parallel combination
09. Ohm's Law
10. Applying Ohm's Law
11. Kirchoff's Current Law or Junction Rule
12. Kirchoff's Voltage Law or Loop Rule
13. Linear & Non Linear Resistance
14. Measurement of Power
15. AC & DC Power
16. Fuses and Circuit Breakers
17. Heating Effect & the Fuse
18. Load in Series and Parallel Circuits
19. Cells Connections
20. Voltage in series & parallel Circuits
21. Current in series and parallel Circuits
22. Meter Movement
23. Meters in a Circuit
24. Charging and Discharging of Capacitors
25. Study of Diode
26. Full Wave Rectifier (optional)
27. The Contactor
28. Study of Relay
29. The Electric Bell
30. Magnets and Magnetism
31. Magnetic Field
32. Magnetic Properties
33. Magnetic Strength
34. Magnetic field around a conductor
35. Magnetic poles around a helix
36. Electromagnetic Strength
37. Electromagnetic Effect
38. Lenz's Law
39. Self Inductance
40. Mutual Induction
41. Transformer Action
42. Transformer Ratio of Voltages
43. Transformer Phasing
44. Faraday's Law of Electromagnet Induction
45. Motor Action
46. The Electric Motor Generator
47. Generation of DC
48. Generation of AC
49. Permanent Magnet DC Motor
50. DC Series Motor
51. DC Shunt Motor
52. AC Universal Motor
53. AND Logic Gate with truth table
54. OR Logic Gate with truth table
55. NOT Logic Gate with truth table
56. X-OR Logic Gate with truth table
57. Convert a Galvanometer into voltmeter
58. Convert a Galvanometer into Ammeter

Accessories:

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| 1. Beaker 100ml | - 1 No. |
| 2. Patch Cords/ Connecting Leads | - 12Nos. |
| 3. Rods/ Strips for | - 1 No. each Copper, Tin, Al, Zinc, Glass Brass, Carbon, Iron, Acrylic, Lead, Stainless Steel |
| 4. Magnets | - 3Nos. (Bar Type-2, Horseshoe (U) type-1) |
| 5. Coils | - 1 No. 100 and 200 Turns |
| 6. Crocodile Clips | - 1 No. red and black |
| 7. Battery/ Cell with holder | - 2 Nos. 1.5 V |
| 8. Glass Fuses | - 10 Nos. 0.5A |
| 9. Compass | - 1 No. |
| 10. Measuring Scale | - 1No. |
| 11. Insulated Disc | - 1 No. |
| 12. Motor Assembly | - 1 No. including Armature, Rotor, Brush, Motor Support, Iron Fillings |
| 13. Helix Assembly | - 1 No. |
| 14. Meter Demonstration | - 1 No. |
| 15. Core | - 1 Set of U&I with Bolt |
| 16. Aluminium Ring | - 1 No. |
| 17. Stand | - 1 No. for motor action demonstration |
| 18. IC | - AND (IC7408), OR (IC7432), NOT (7404) And EX-OR Gate (IC7486) |
| 19. Multimeter | - 1 No. |
| 20. Soft Iron Piece | - 1No. |

Note: Specifications are subject to change.

Tesca Technologies Pvt. Ltd.

IT-2013, Ramchandrapura Industrial Area, Sitapura Extension,
Near Bombay Hospital, Vidhani Circle, Jaipur-302022, Rajasthan, India,
Tel: +91-141-2771791 / 2771792; Email: info@tesca.in, tesca.technologies@gmail.com
Website: www.tesca.in