

ELECTRICAL WIRING

Part-I	40 Marks
Part-II	40 Marks
Practical	70 Marks
Total	150 Marks

Marks: 40	Part-I (Class-IX)	Time: 1:30 Hours
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CHAPTER -1	Fundamental of Electricity Nature and generation of electricity (General Concept), Matter and its state, Atomic theory and ions, Electric charge, Electric current, Electric potential, Pressure, Resistance, Conductance, Law of resistance, Specific resistance, Ohm's Law
CHAPTER -2	Magnetism Magnet and magnetic materials, Properties of magnetic material, Nature of magnetic field, Electro magnetism, Flux and flux density
CHAPTER -3	Series and Circuit Series circuit, Parallel circuit, Series parallel combined circuit, Electrical power, Mechanical power Electrical energy, Tariff for electrical loads
CHAPTER -4	Cells and Batteries Cell and batteries, Connecting cells in series / parallel, Charging of batteries
CHAPTER -5	Simple Measuring Instruments Measuring system, Moving iron system, Moving coils system, Electro-dynamic system
CHAPTER -6	Wiring Methods Wiring methods, Material for electric wiring, Testing of electrical wiring, Estimation for wiring, Kinds of wires and cables, Earthing

LIST OF PRACTICALS FOR CLASS-IX (PART-I)

1. Draw the different symbols relating to electrical wiring field
2. Basic Requirements for Electrical work: To do work according to general workshop rules and regulations, To do work according to drawing and sketches, Listing of tools according to jobs, Listing of correct sequence of operation for the job, Working to safety regulations, Working to I.E.E regulations and general electricity rules, Elementary first aid including artificial respiration
3. Cable Joints: Identification and use of common hand tools, Care of tools and equipments, Identification of cables and wires w.r.t conductors and insulation, Trimming of cables (using electrician knife / insulation remover), Simple straight joint, Married joint, T-joint, Soldering of joint
4. Basic electric circuit (Loose wiring): Identification of electrical symbols, To control one lamp with one switch, To control one lamp and socket, To control three pin socket with one switch, Preparation of series test board, To control 3 lamps with three switches in parallel, To control a bell and lamp in series (bell indicator circuit), Fluorescent tube light connection. (test with series board), Two way switch circuit (stair circuit), To control two lamps in series and two lamp in parallel by two-way switch, To control fan with regulator / dimmer
5. Identification of measuring instruments: Identification of am-meter and its application, Identification of volt-meter and its application, Identification and using of long tester, Identification of Ohm-meter and its application, Identification and use of watt-meter, Identification and connection of energy meter.

Marks: 40	Part-II (Class-IIX)	Time: 1:30 Hours
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- CHAPTER -1 Rules and Regulation for Wiring
I.E.E. rules and regulations for wiring
- CHAPTER -2 Alternating Current
A.C and D.C, Time period and frequency, Maximum value of alternating quantity, RMS value of sine wave, Self-inductance
Mutual inductance, Eddy current, Principle of transformer
- CHAPTER -3 Capacitor / Inductors
Construction of capacitor, Types of capacitors, Working of capacitor in AC and DC Capacitance , Construction of inductor, Inductor in AC and DC, Uses of inductor, Reactance of capacitor, and inductor
Impedance - Power in AC
- CHAPTER -4 Generator /Motor
working principle of Generator , kinds of DC Generators motors and its Construction, Parts of Generators, kinds of motor (AC &DC)
working principle of AC single phase motor Universal / series

LIST OF PRACTICALS FOR CLASS-X (PART-II)

- Domestic Installations (Batten & PVC pipe wiring)
1. Kitchen installation
 2. Bed room installation
 3. Drawing room installation
 4. Stair case installation (using two way switch)
 5. Hall installation
 6. Tumbler-bell installation
 7. Indicator bell installation
 8. Installation of two fluorescent tube in series using single chock
 9. K.W.H meter and main switch + fuse installation
 10. Wiring test methods: Leakage of Insulation Test, Polarity Test, Continuity Test

BOOK: Electrical Wiring
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