Diploma in Electrical Appliance Services & Maintenance

Subject-Basic Circuit Theory

- Voltage and Current Sources, Resistive Networks, Star-delta transformation, Series-Parallel Circuits, Node Voltage Method, Mesh Current Method.
- Theorems: Thevenin's, Norton's, Superposition and Maximum Power Transfer Theorems.
- Alternating current and voltages, Average and RMS values, Form Factor and Peak Factor.
- RL, RC and RLC circuit, impedances and admittances, phasor diagrams. Active and reactive power, Power Factor.

Subject-Basic Electrical and Electronics

Basic Concepts of Electrical Engineering: Electric Current, Voltage, Ohm's Law, KCL, KVL, Introduction to R, L and C, Faraday's Laws of Electromotive force, Electric Power, Electromagnetic Induction, Lenz's Law.

Three Phase Circuits: star/delta circuit, line and phase quantities, Three phase power.

Transformers: Principle, construction and operation of single-phase transformers.

Basic Electronics: Intrinsic and extrinsic Semiconductors, PN Junction Diode, Diode biasing, Zener Diode.

Digital Electronics: Boolean algebra, Binary System, Logic Gates (AND, OR, XOR, NOT, NAND, NOR, XNOR) and Their Truth Tables.

Subject-Electrical Instrumentation and Tools

Measuring Instruments:

Introduction to safety measures and basic tools for electrical technician.

Moving coil, moving iron, electrodynamic and induction instruments-construction, operation, torque equation and errors.

Applications of instruments for measurement of current, voltage, single-phase power and single-phase energy.

Polyphase Metering:

Blondel's Theorem for n-phase, p-wire system. Measurement of power and reactive kVA in 3-phase balanced and unbalanced systems: One-wattmeter, two- wattmeter and three-wattmeter methods. 3-phase induction type energy meter.

Electrical Wiring:

Resistance of Wires made of different materials. Types of Wiring. Faults in wiring & their effects. Earthing: Importance & Types