

Syllabus for the post of Technician Gr.-III

Notification Sl. No. 8

Qualification – Diploma in Electrical & Electronic Engineering

Elements of Electrical Engineering

- Introduction and Electrical current and voltage
- DC circuits and Resistance and temperature effects
- Work, Power and Energy
- Electrostatics
- Faraday's laws of Electrolysis
- Electrical Engineering Materials

Electrical Circuits

- Introduction and DC circuits
- Magnetism and magnetic circuits
- Electromagnetic Induction
- AC Principles and Vector Algebra
- Single-phase AC circuits
- Poly-phase AC circuits

DC Machines and Alternators

- DC Generators construction and working
- Performance of DC Generator
- DC Motors
- Alternators construction and working
- Alternators performance
- Special Machines

Electrical Power Generation

- Hydroelectric and thermal power plants
- Nuclear power plant, Diesel power plant and Gas turbine power plant.
- Solar photovoltaic system
- Wind Power plant
- Tidal Power Plant , Wave energy , Ocean thermal energy and Biomass Power Plant
- Fuel Cells, Hybrid power plant and Power factor improvement.

Analog & Digital Electronics

- Semiconductors and Diodes
- Transistors and MOSFETs
- Optoelectronic devices
- Rectifiers, filters and regulators
- Amplifiers and Oscillators

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- OP-AMP and Timers
- IC Logic families
- Digital Principles
- Boolean Algebra & Logic Gates
- Combinational Logic Circuits
- Sequential Logic Circuits
- Digital Interfacing and Memories

Transformers and AC Motors

- Transformers
- Three phase Transformers
- Induction Motors
- Starting and Speed control of Induction Motors
- Synchronous Motors
- Single phase Motors

Electrical Measurements & Measuring Instruments

- Characteristics & Classification of instruments.
- Construction & Operation of indicating instruments
- Construction & Operation of Watt meter & energy meter
- Measurement of R,L,C
- Digital meters.
- Transducers & Sensors, Signal Conditioning circuits.

Power Electronics

- Power Semiconductor Devices
- SCR Control Circuits
- Ratings, Protection & Mounting of Thyristors
- Converters
- Power Supplies and Stabilizers
- Applications

Transmission Distribution and Utilization

- Transmission systems
- Hvdc, facts and sub-stations
- Distribution systems
- Electric heating and welding
- Electro-chemical process, refrigeration and air conditioning
- Illumination

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Switchgear & Protection

- Fundamentals of Protection
- Fuse and Circuit Breakers
- Protective Relays
- Protection of Generators and Transformers
- Protection of Feeders and Bus-Bars
- Substation and Maintenance

Industrial Drives and Control

- Introduction to Electrical Drives
- Industrial Process & Drives
- Control System
- Development of Control Circuit
- Computer Based Industrial Control
- Electric Traction

