

Subjects :Electrical Engineering

1. **Basic Electrical Engineering:**DC networks, Magnetic Circuits, Single phase and poly-phase AC circuits, Measuring instruments, Basics of Electrical Installations.
2. **Basic Electronics:** PN junction diode, Bipolar Junction Transistor, Multi-stage BJT amplifiers, Field-effect transistors.
3. **Electrical Circuit Analysis:** Sinusoidal Steady State Analysis, Circuit Transients, Network Functions, Two port networks, Non-sinusoidal periodic waves, Graph theory.
4. **Digital System and Logic Design:** Realization of gates, Representation of Informations, Boolean algebra and logic functions, Combinational and Sequential logic circuits.
5. **Electrical Measurements:** Ammeters, Voltmeters, Ohmmeters, Wattmeters & Energymeters, Instrument Transformers, Oscillators, Electronics Instruments, Recorders.
6. **Power System:** Over head Line transmission, Under ground cables, AC & DC distribution, symmetrical components, transients and short circuit fault analysis, stability studies, economic operation of power system, Short circuit studies using Z-bus, system interconnection and control, neutral grounding, circuit breakers and relays, electrical substation layouts, corona & RI characteristics, HVDC transmission.
7. **Electromagnetic Field Theory:** Vector analysis, Electrostatics in vacuum and dielectrics, Boundary value problems, Magneto static field, Electromagnetic field, Time varying fields, Plane electromagnetic fields.
8. **Advanced Electronics:** Transistor oscillators, Linear & non-linear application of operational amplifiers, Active filters.
9. **Electrical Engineering Materials:** Conductor, semi-conductor, Magnetic and Di-electric materials.
10. **Electrical Machines:** DC & AC motors, DC & AC generators, Transformers, single and poly-phase induction machines, AC commutator motors, two reaction analysis of salient poles machines, sudden short circuit of synchronous generators.
11. **Communication Engineering:** Signals and spectra, Random signals and noise, Modulation & detection, Electromagnetic wave propagation.
12. **Microprocessors:** Microprocessors architecture, programming of 8085 microprocessors, interfacing peripheral chips 8255, 8253,8279, 8259. 8251, 8257.
13. **Power Electronics:** Semiconductor power devices, rectifying circuits, inverters, chopper, cycloconverter, AC voltage controllers, Power supplies.
14. **Automatic Control System:** SISO, MIMO, time invariant & time varying systems, Mathamatical modelling of physical systems, SFG & Block diagram representation of systems, Transient and frequency response analysis, Root locus & State Space techniques, Design and compensation techniques.
15. **Machines Drives:** Starting and Braking, solid state controllers, Electric Traction, Industrial Applications, Electric Heating & Weilding.