

ELECTRICAL ENGINEERING

Primary and Secondary cells, Dry-accumulators, Solar Cells, Steady state analysis of d.c. and a.c. network, network theorems, network function, Laplace techniques, transient response, frequency response, three-phase network, inductively coupled circuits.

Mathematical modelling of dynamic linear systems, transfer functions, block diagrams, stability of control systems.

Electrostatic and magnetostatic field analysis, Maxwell's equations, Wave equations and electromagnetic waves.

Basis methods of measurements, standards, error analysis, indicating instruments, cathode ray oscilloscope, measurement of voltage, current, power resistance, inductance, capacitance, frequency, time and flux, electronic motors.

Vacuum based and Semiconductor devices and analysis of electronic circuits, single and multistage audio and radio, small signal and large signal amplifiers, oscillators and feedback amplifiers, waveshaping circuits and time base generators, multivibrators and digital circuits, modulation and demodulation circuits. Transmission line at audio, radio and U.H. frequencies frequencies, Wire and Radio Communication.

Generation of e.m.f. and torque in rotation machine, motor and generator characteristics of d.c. synchronous and induction machines, equivalent circuits, commutation starters, phasor diagram, losses, regulation, power transformers.

Modelling of transmission lines, steady, state and transient stability, surge phenomena and insulation coordination, protective devices and schemes for power system equipment.

Conversion of a.c. to d.c. and d.c. to a.c., controlled and uncontrolled power, speed control techniques for drives.