ELECTRICAL ENGINEERING

PAPER-I

Network:

Steady state analysis of d.c. and a.c. networks, network theorems, Matrix Algebra, network functions, transient response, frequency response, Laplace transform, Fourier series and Fourier transform, frequency spectral plezero concept, elementary network synthesis, Statics and Magnetics.

Analysis of electrostatics and manetostatic fields Laplace and Poission Equations, solution of boundary value problems. Mexwell's equations, electromagnetic wave propagations ground and space waves, propagation between earth station satellites.

Measurement:

Basic methods of measurements, standards, error analysis, indication instrument cathode ray oscilloscope , measurement of voltage current, power, resistance, inductances, capacitance, time, frequency and flux, electronic meters.

Electronics:

Vacuum and semiconductor devices, equivalent circuits transistor parameters determination of current and voltage gain and input and output impedances biasing techniques, single and multistage, audio and ratio small signal and large signal amplifiers and their analysis, Feedback amplifiers and oscillators, wave shaping circuits and time base generators, analysis of different types of multi vibrator and their uses; digital circuits.

Generation of e.m.f. m.m.f and torque in rotating machines, motor and generator characteristics of d.c. synchronous and induction machines equivalent circuits, commutation parallel operation, phasor diagram and equivalent circuits of power transformer, determination of performance and efficiency, auto-transformer, 3 phase transformers.