Unit - I

Syllabus : EMF, Current, Potential difference, Power and Energy, MMF, Magnetic force, Permeability, Hysteresis loop, Reluctance, Leakage factor and BH curve, Analogy between electric and magnetic circuits. Electromagnetic induction, Faraday's laws of electromagnetic induction, Lenz's law, Dynamically induced emf, Statically induced emf : (a) Self induced emf (b) Mutually induced emf, Equations of self and mutual inductance.

Syllabus : Cycle, Frequency, Periodic time, Amplitude, Angular velocity, RMS value, Average value, Form factor, Peak factor, Impedance, Phase angle, and Power factor, Mathematical and phasor representation of alternating emf and current, AC in resistors, Inductors and capacitors, AC in RL series, RC series, RLC series and parallel circuits, Power in AC circuits, power triangle.

Unit - II

Syllabus : Voltage and current relationship in star and delta connections.

Syllabus : General construction and principle of different types of transformers, EMF equation and transformation ratio of transformers. Auto transformers.

Syllabus : P-N junction diode Symbol, Construction, Working and applications. Light emitting diodes Symbol, Construction, Working principle and applications.

Unit - V

Syllabus : Rectifiers : Half wave, Full wave and Bridge rectifier, Performance parameters. PIV, Ripple factor, Efficiency, Filters C, Circuit diagram and working of L, C and π filters. Zener diode voltage regulator.

Unit - VI

Syllabus : BJT : Symbol, Construction and working principle, Transistor as switch and amplifier, Input and output characteristics CE, CB and CC configurations, Operating regions – Cut-off, Saturation and Active, Transistor parameters CB gain α, CE gain β, Input resistance, Output resistance, Relation between α and β.

❑❑❑