Article A : Semiconductor Theory A-1 to A-5

Contents : Review of semiconductor theory (No questions to be set in theory paper), Semiconductor (based on band theory), Intrinsic semiconductors : Extrinsic semiconductors, Doping, Dopant, Trivalent and Pentavalent impurities, P-type and N-type semiconductors.

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- **Review Questions A-5**

Unit - I

Chapter 1 : Semiconductor Diodes 1-1 to 1-29

Syllabus : Construction, Symbol, Working principle, Specifications, Applications, Forward and reverse biasing and V-I characteristics of following semiconductor diodes PN junction diode, Zener diode. Special diodes : LED, Photodiode, LASER diode and Power diode.

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Unit - II

Chapter 2 : Rectifiers and Filters 2-1 to 2-30

Syllabus : Types of rectifiers : Half wave, Full wave rectifier (bridge and center tapped) : Circuit operation, Input/output waveforms for voltage and current, Parameters of rectifier : Average dc value of current and voltage, Ripple factor, Ripple frequency, PIV of diode, TUF and efficiency of rectifier. Types of filters : Shunt capacitor, Series inductor, LC and π filter.

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