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120933/30933

3rd Sem. / Electrical / GE / PE

Subject : Basic Electronics -I/BE

Time : 3 Hrs. M.M. : 100

SECTION-A

Note: Very Short Answer type questions. Attempt any 15 parts. (15x2=30)

Q.1 a) Ideal Diode

b) Constant Voltage Source

c) Conductivity of silicon

d) Ripples

e) MOSFET

f) Varactor Diode

g) DC Load line

h) Decibel Gain

i) Limitation at direct coupled amplifier

j) Transistor Biasing

k) H-Parameters

l) Atomic Structure

m) Drift Current

n) Passive Components

o) Junction Breakdown

p) Input impedance

q) Junction Transistor

r) Potential barrier.

SECTION-B

Note: Short answer type questions. Attempt any ten parts 10x4=40

Q.2 i) Discuss atomic structure of silicon.

ii) Explain series inductor filter

iii) Explain CE configuration of transistor .

iv) Explain types of active components.

v) Explain concept of AC Load line.

vi) Why silicon is preferred to other semiconductor.

vii) Short note on photo diode & its applications

viii) Explain half wave rectifier using diodes.

ix) Define operating point & why there in need of stabilization of operating point.

x) Explain transformer coupled amplifiers.

xi) Operating and characteristics of N Channel JEET.

xii) What are Electronic components & its types.

xiii) Explain the process of generation and recombination of electron hole pairs.

xiv) What is the concept of junction capacitance in forward and reverse biased conditions.

xv) Explain intrinstic semiconductors & its types.

SECTION-C

Note: Long answer type questions. Attempt any three questions. 3x10=30

Q.3 Draw the A.C. equivalent circuit of single stage transistor amplifiers and frequency response in amplifiers. Explain

Q.4 Explain V-I characteristics of semiconductor diode and static resistance

Q.5 Differentiate between Intrinsic and Extrinsic semiconductor

Q.6 What is transistor biasing. Name the different methods used in biasing and their advantages.

Q.7 Write short note on :

i) Loading effect in multistage amplifiers

ii) Compare BJT, JEET & MOSFET.