

- Q.30 Derive the relationship between alpha, beta & gamma of a transistor. (CO3)
- Q.31 Describe potential divider method in detail. (CO4)
- Q.32 What do you understand by loading effect in multistage transistor amplifier? (CO5)
- Q.33 Explain the construction of Bipolar Transistor with characteristics. (CO3)
- Q.34 Explain the phenomenon of current flow in Intrinsic Semiconductor. (CO2)
- Q.35 Give advantages of FET over conventional transistor. (CO6)

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

- Q.36 Explain the following terms:- (CO2)
- Zener Breakdown
 - Ideal Diode
 - Avalanche Breakdown
 - Knee Voltage
- Q.37 Draw the circuit diagram of single stage transistor amplifier. State function of each component used in this circuit. (CO5)
- Q.38 Define doping thermal generation, acceptor impurity, donor impurity, p type semiconductor & recombination. (CO1)

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**2nd Sem / Comp, ECE, IT, I & Control, Mechatronics
Med. Eltx, Eltx& Instr., Power Eltx, EEE**

Subject:- Basic Electronics / Analog Eltx.

Time : 3Hrs.

M.M. : 100

SECTION-A

Note: Multiple choice questions. All questions are compulsory (10x1=10)

- Q.1 Donor type impurities (CO1)
- Create excess holes
 - Can be added to Germanium but not to silicon
 - Must have only five valence electrons
 - Must have only three valence electrons
- Q.2 The width of base region as compared to emitter region (CO1)
- Small
 - Large
 - Same
 - Half
- Q.3 The most heavily doped region in a transistor (CO3)
- Emitter
 - Base
 - Collector
 - Both a & c
- Q.4 A zener diode is used as (CO2)
- An amplifier
 - A voltage Regulator
 - A coupler
 - A rectifier
- Q.5 Acceptor type semi conductor is formed by adding impurity of valency (CO1)

- a) 3 b) 4
c) 5 d) 6
- Q.6 A zener diode is operated in (CO2)
a) Breakdown region
b) Forward characteristic region
c) Both a & b
d) None of these
- Q.7 The purpose of capacitor in an amplifier is to (CO3)
a) Match the impedance
b) Control frequency
c) Prevent dc mixing with output
d) Limit the bandwidth
- Q.8 In N type semi conductor there are (CO1)
a) No majority carriers
b) Holes as majority carriers
c) Immobile -ve ions
d) Immobile +ve ions
- Q.9 The CE transistor circuit has (CO5)
a) High Gain b) Low Gain
c) Zero Gain d) None of above
- Q.10 The most commonly used transistor configuration is (CO3)
a) Common Emitter b) Common Base
c) Common Collector d) All equally used

SECTION-B

Note: Objective type questions. All questions are compulsory. (10x1=10)

- Q.11 In P type Semiconductor _____ are the minority carriers. (CO1)
- Q.12 The practical value of α in a transistor is _____. (CO3)

- Q.13 The point of intersection of dc and ac load line is called _____. (CO4)
- Q.14 Define Voltage gain. (CO5)
- Q.15 If operating point changes, it results into _____. (CO4)
- Q.16 Define output impedance. (CO5)
- Q.17 Semiconductors have _____ bonds. (CO1)
- Q.18 Expand MOSFET. (CO6)
- Q.19 The dc load line is a plot of _____ & _____. (CO4)
- Q.20 What is transistor biasing? (CO3)

SECTION-C

Note: Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

- Q.21 Draw the structure of p type semiconductor. (CO1)
- Q.22 Explain why temperature coefficient of resistance of a Semiconductor is negative. (CO1)
- Q.23 Explain center tap rectifier. (CO2)
- Q.24 Draw & explain circuit of NPN transistor in CE configuration. (CO3)
- Q.25 Discuss the behavior of P-N junction under forward & reverse biasing. (CO2)
- Q.26 Explain current flow through a n- type semiconductor. (CO1)
- Q.27 Explain why CE configuration is mostly used. (CO3)
- Q.28 Explain the function of Emitter, base & collector in the operation of a junction transistor. (CO3)
- Q.29 Compare JFET & MOSFET. (CO6)