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2nd Sem / Electrical Engg
Subject:- Electronics - I

Time : 3Hrs. M.M. : 100

SECTION-A

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

Q.1 What is rectification? (CO1)
a) Process of conversion of ac into dc
b) Process of conversion of low ac into high ac
c) Process of conversion of dc into ac
d) any of the above

Q.2 Potential barrier for Ge Diode is ? (CO1)
a) 0.3 b) 0.7
c) 1.0 d) 1.3

Q.3 Efficiency of half wave rectifier is (CO1)
a) 40.6% b) 70.4%
c) 81.2% d) 50%

Q.4 What are the charge carriers in semiconductors ? (CO1)
a) Electrons and holes b) Electrons
c) Holes d) Charges

Q.5 Identify the relationship between base current amplification ( ) and emitter current amplification. ( ). (CO2)
a) = /1- b) =1/ -

c) = /1+ d) =1+ /1-

Q.6 Which region of the transistor is lightly doped? (CO2)
a) Emitter
b) Base
c) Collector
d) Both Emitter and Collector

Q.7 The maximum output amplified signal is obtained when the operating point of the transistor is (CO3)
a) near saturation
b) in the middle of the active region
c) neat cutoff region
d) any of the above

Q.8 The voltage gain is practically expressed in_____ (CO4)
a) db b) volts
c) as a number d) ampere

Q.9 What is Amplification factor is FET? (CO6)
a) Ratio of change in drain to source voltage to change in gate to source voltage
b) Ratio of change in drain current to change in gate to source voltage
c) Ratio of change in collector current to change in drain current
d) Ratio of change in collector current to change in gate to source voltage

Q.10 Comparing the size of BJT and FET, choose the correct statement ? (CO6)

a) BJT is larger than the FET
b) BJT is smaller than the FET
c) Both are of same size
d) Depends on application

SECTION-B

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

Q.11 What is Drift current. (CO1)
Q.12 Tell maximum rectification efficiency of a half wave rectifier. (CO1)
Q.13 A single stage amplifier contains_____transistors. (CO3)
Q.14 Define Ripple factor. (CO1)
Q.15 Draw a symbol of NPN transistor. (CO2)
Q.16 What is Quiescent point. (CO3)
Q.17 What is Voltage gain. (CO4)
Q.18 Define multistage transistor Amplifier. (CO5)
Q.19 Write the full form of MOSFET. (CO6)
Q.20 Draw the symbol of LED. (CO1)

SECTION-C

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

Q.21 Draw the V/I characteristics of PN junction Diode and explain it. (CO1)
Q.22 What are filter circuits. Explain its need. (CO1)
Q.23 Explain the working of PNP transistor. (CO2)
Q.24 Explain the effect of temperature on the operating point of a transistor. (CO3)
Q.25 Draw and explain DC Load line. (CO4)

Q.26 Explain the need of stabilization of operating point. (CO3)
Q.27 Discuss transformer couplings used in multi stage transistor amplifier. (CO5)
Q.28 Explain potential divider biasing circuit. (CO3)
Q.29 Draw the characteristics of zener diode and explain it (CO1)
Q.30 Explain the concept of h-parameters of a transistor. (CO3)
Q.31 Draw the circuit of 2-stage RC coupled transistor amplifier. (CO5)
Q.32 What are the main advantages of FET over BJT. (CO6)
Q.33 Draw the AC equivalent circuit of single stage amplifiers. (CO4)
Q.34 Draw and explain Emitter follower circuit. (CO5)
Q.35 Explain the working of N channel JFET. (CO6)

SECTION-D

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

Q.36 Draw the circuit diagram of Full wave rectifier bridge and explain its working along with waveforms. (CO1)
Q.37 Compare all the three configurations of Transistors in detail. (CO2)
Q.38 Draw the circuit of single stage transistor amplifier and explain it. (CO3)

(**Note:** Course outcome/CO is for office use only)