Q.25 Explain the working of NPN transistor. (CO-4)
Q.26 Explain drift and diffusion current. (CO-1)
Q.27 Explain N and P type semiconductors. (CO-2)
Q.28 Explain N channel JFET. (CO-8)
Q.29 What is the effect of reverse biasing on P-n junction diode? (CO-3)
Q.30 Discuss how NPN transistor works in active region. (CO-5)
Q.31 What are the various configurations in which a transistor is used? (CO-5)
Q.32 Explain the frequency response of single stage amplifier. (CO-7)
Q.33 Explain forward and reverse biasing of PN junction diode. (CO-2)
Q.34 Explain energy band theory. (CO-2)
Q.35 How BJT works as an amplifier. (CO-3)

SECTION-D

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

Q.36 Write short note on any two of the following:- (CO-1)

a) Extrinsic semiconductor
b) BJT
c) Current source

Q.37 Give construction, operation, characteristics and applications of BJT (NPN or PNP) (CO-3)
Q.38 Explain with diagram the construction working of MOSFET. (CO-8)

Roll No. .....

3rd Sem. / Electrical, GE, Power Station Engg., Elect. & Eltx., Engg., Fire Tech. & Safety

Subject : Electronics-1/Basic Electronics

Time : 3 Hrs. M.M. : 100

SECTION-A

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

Q.1 The transistor works as amplifier in _____ region. (CO-4)

a) Saturation b) Cut off
c) Inverted d) Active

Q.2 The function of emitter in NPN-Transistor is_____. (CO-4)

a) To emit or inject holes into collector
b) To emit or inject electrons into collector
c) To emit or inject electrons into base
d) To emit or inject holes in base

Q.3 Photodiode is designed to work in _____ region. (CO-3)

a) Forward bias
b) Reverse bias
c) Both forward and reverse bias
d) None of the above

Q.4 An field effect transistor is essentially a _____ (CO-8)

a) Current driven device
b) Voltage driven device
c) Power driven device
d) None of the above

Q.5 The value of forbidden energy gap in insulators is of the order of_____. (CO-2)

a) 1 eV b) 5 eV
c) 0eV d) Less then 2 eV

Q.6 The efficiency of full wave, rectifier circuit is_____. (CO-3)

a) 40.6% b) 78.5%
c) 81.2% d) 100%

Q.7 Photodiode is designed to work in _____ region. (CO-3)

a) Forward bias
b) Reverse bias
c) Both forward and reverse bias
d) None of the above

Q.8 The point of intersection of DC and AC load line is (CO-4)

a) A-Point b) Q-Point
c) T-Point d) None

Q.9 Zener diode is used in : (CO-3)

a) Break down b) Forward region
c) Biasing region d) None

Q.10 The CE transistor circuit has (CO-5)

a) High gain b) Low gain
c) Zero gain d) None

SECTION-B

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

Q.11 Multistage amplifiers has two or more stages. (True/False) (CO-7)

Q.12 BJT stands for _____. (CO-4)

Q.13 LED stands for _____. (CO-3)

Q.14 Define Active Components. (CO-1)

Q.15 Define insulator? (CO-1)

Q.16 Name any two passive components. (CO-1)

Q.17 What is the value of knee voltage of silicon diode? (CO-2)

Q.18 Define ideal diode? (CO-3)

Q.19 What is the value of the ripple factor of full waverectifier? (CO-3)

Q.20 What is the principle of LED? (CO-3)

SECTION-C

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

Q.21 What is zener diode and its characteristics (CO-3)

Q.22 Explain half wave rectifier and its efficiency. (CO-2)

Q.23 Explain Full wave rectifier. (CO-3)

Q.24 Explain forward and reverse biasing of diode? (CO-2)