Q.26 Explain the process of current flow in an intrinsic semiconductor.

Q.27 Why capacitor are connected in parallel & inductor in series in filter circuits.

Q.28 What are conditions for faithful amplification from a transistor?

Q.29 Explain the concept of Input & Output Impedance.

Q.30 Why is need of multistage transistor amplifiers?

Q.31 Explain the formation of depletion region in open circuited PN - Junction.

Q.32 Explain frequency response and application of RC coupled two stage amplifiers.

Q.33 What are features of JFET?

Q.34 Explain Schottky Diode.

Q.35 Write a short note on H - Parameters

SECTION-D

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

Q.36 Compare JFET, BJT and MOSFET

Q.37 Compare CB, CC and CE configurations.

Q.38 Explain working of Single transistor amplifier & its physical graphical explanation

Roll No. .....

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

Subject:- Electronics - I / Basic Electronics

Time : 3Hrs. M.M. : 100

SECTION-A

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

Q.1 At room temperature, the intrinsic semiconductor act as:

a) Copper wire b) Insulator

c) Conductor d) Semiconductor

Q.2 Which of the following is not a semiconductor:

a) Germanium b) Silicon

c) GaAs d) Lead

Q.3 Diffusion capacitance depends on:

a) Mean lifetime for carrier

b) Area of Junction

c) Width of Depletion region

d) Permittivity

Q.4 The common base current gain is

a) Less than 1 b) Equal to 1

c) Usually 10-15 d) Usually 50-150

Q.5 In a PNP transistor the collector current is mainly due to

a) Holes b) Electrons

c) Holes and electrons d) None

Q.6 Ideally an amplifier must have _____ input resistance:

a) 0 b) Low

c) Medium d) Infinite

Q.7 JFET is a _____ controlled device:

a) voltage b) current

c) Proton d) Resistance

Q.8 The region of FET which is heavily doped is:

a) Source b) Gate

c) Drain d) Channel

Q.9 Cut in voltage of silicon diode is approximately

a) 0.1 V b) 0.2 V

c) 0.7 V d) 0.5 V

Q.10 A semiconductor has_____ number of junctions

a) 2 b) 3

c) 4 d) 1

SECTION-B

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

Q.11 What are various types of active components?

Q.12 What is an ideal voltage source?

Q.13 What are majority carriers in P Type semiconductor?

Q.14 Define knee voltage.

Q.15 Define static and dynamic resistance.

Q.16 What is Doping?

Q.17 What are multistage amplifiers?

Q.18 Draw PNP transistor.

Q.19 What is Depletion layer?

Q.20 Two application transformer coupled amplifiers.

SECTION-C

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

Q.21 Explain the energy band structure of Si & Ge.

Q.22 Explain working of Zener diode as voltage regulator.

Q.23 Derive the relation between alpha, beta and gamma of a transistor.

Q.24 Explain Fixed Bias circuit.

Q.25 Explain Bridge rectifier with diagram.