Question Bank 2(I-Scheme)

Name of course: Basic Electronics **Unit Test: II**

Subject code: 22225 (BEC) **Semester: II** **Program: CM/IF**

Chapter: 3 Bipolar Junction Transistors

2 mark questions:

1) Define Transistor & Draw symbol of NPN Transistor.
2) Draw the construction of NPN Transistor.
3) Define: a) Current gain(α) b) Current gain(β)
4) Draw the output characteristics of Transistor in CE mode.
5) Define DC load line & Operating point.
6) State need of biasing.
7) State the advantages of voltage divider biasing over base bias.
8) State the applications of RC coupled CE amplifier.

4 mark Questions

1) Explain working principle of NPN Transistor.
2) Derive the relationship between α & β of transistor.
3) Draw & explain voltage divider biasing.
4) Compare CB & CE configuration of transistor.
5) If α of a transistor is 0.9, calculate β.
6) If β of a transistor is 98, Ic= 4.5mA, then calculate base current.
7) State the significance of operating point in Transistor biasing.
8) Explain how transistor can be used as switch.
9) Draw & explain single stage CE amplifier.
10) In a voltage divider biasing ckt, Vcc=10V, R1=10KΩ, R2=5Ω, & RE= 100Ω, RC= 1KΩ, calculate Ic&Vce.
    (Consider β=100,Vbe= 0.7v)

Chapter: 4 (FIELD EFFECT TRANSISTOR)

2 mark questions:

1) State different types of FET.
2) Draw the symbol of N-channel & P-channel JFETs.
3) Draw the symbol of Depletion type & Enhancement type MOSFET.
4) State the application of JFET.

5) State the application of MOSFET.

4 mark questions:

1) Compare FET& BJT.
2) Draw & Explain N-channel JFET construction.
3) Draw & Explain P-channel JFET construction.
4) Explain Working Principle of N-channel JFET.
5) Draw & Explain Transfer characteristics of JFET.
6) Define following terms:
   a) Dynamic Drain Resistance
   b) Amplification Factor
   c) Transconductance
   d) Pinched off voltage
7) Explain Working Principle of Depletion type MOSFET (n-channel).
8) Explain Working Principle of Enhancement type MOSFET (n-channel).

Chapter: 5Transducers and Sensors

2 Marks questions

1) Define Transducer.Give its two applications.
2) Define active and passive transducers.
3) Give two applications of Transducer.
4) State advantages of electrical transducer.
5) List application of photo-transistor transducer.
6) Define piezo-electric effect.

4 Marks Questions

1) Explain selection Criteria for Transducer.
2)Explain Resistive Transducer With an example.
3) Explain Inductive Transducer With an example.
4)Describe construction and working principle of strain guage.
5)Describe construction and working principle of L.V.D.T.
6)Write procedure to measure temperature using thermocouple
7)Describe construction of photo diode transistor