**Question Bank (I-Scheme)**

**Name of course: Elements of Electronics Unit Test: I**

 **Subject code: 22213 (EOE) Semester: II Program: EE**

**Chapter 1: Semiconductor Diodes.**

**2 Marks**

1. Draw the symbol of LED, Photo Diode, Zener Diode, PN Junction Diode.
2. List the specifications of PN Junction Diode.
3. State the applications of Laser diode
4. List the specifications of Zener Diode.
5. State applications of Photodiode.
6. Draw the constructional diagram of LED.

**4 Marks**

1. Draw Experimental circuit diagram and V-I characteristics for Forward & Reverse biased PN Junction Diode.
2. Describe the working principle of photo diode with proper diagram.
3. Compare PN Junction Diode with Zener diode. (any four points)
4. Explain and working of a PN Junction Diode with neat diagrams

**Chapter 2: (Rectifiers and Filters)**

**2 Marks**

1. Define Rectifier & List its types.
2. Define the term Ripple factor for rectifier.
3. Draw the Circuit diagram of Full wave bridge rectifier
4. What are the values of ripple factor and PIV in half wave rectifier, center tapped rectifier.
5. **Marks**
6. Compare half wave rectifier and bridge type full wave rectifier.
7. Describe the working of LC filter circuit.
8. Sketch circuit diagram and input/output waveforms for half and full wave rectifiers.
9. Define following parameters of rectifier

 (i) Average DC. value of current

 (ii) Rectifier Efficiency

 (iii) PIV factor

 (iv) TUF

1. Draw and Explain bridge rectifier with $π$ filter. Draw its Input and Output waveforms.

**Chapter 3: (Transistor)**

**2 Marks**

1. List configurations of BJT
2. State relation between Emitter current(IE), Base Current (IB) and Collector Current(IC) of BJT.
3. Define α and β of a transistor.
4. Write formulas for input and output resistance of CE configuration.

**4 Marks**

1. Explain the need of biasing of BJT. List types of biasing.
2. Describe the operation of NPN transistor with neat diagram.
3. Describe transistor as a switch with neat diagram
4. In a common base connection, current amplification factor (α) is 0.9, If the emitter current is 1mA, determine the value of base current.
5. Draw the output characteristics of common emitter (CE) configuration and explain active , saturation and cutoff regions in detail.
6. Identify type of BJT configuration having following feature

 i. BJT configuration having highest current gain

 ii. BJT configuration having current gain less than one

 iii. BJT configuration having highest input impedance

 iv. BJT configuration called as emitter follower

 v. BJT configuration suitable for voltage amplification

 vi. BJT configuration suitable for impedance matching