

**Section – A**

1. What is a Zener Diode. Discuss it's working as a Voltage Stabilizer.(5)
2. Explain the equivalence between Voltage source and Current source. How Current Source can be converted into voltage source.(5)
3. Discuss the working of a p-n junction and give it's I-V characteristics.(5)
4. What are Filter circuits. Explain the working of pi- Filter.(5)

**Section – B**

5. Draw Common Base circuit of Junction Transistor and Explain it's input and Output characteristics. (5)
6. Discuss differences between Bipolar Junction Transistor and Field Effect Transistor.(5)
7. What are Photo Conductive devices. Explain solar Cell. (5)
8. Draw the Structure of an n-Channel MOSFET and Explain it's working. (5)

**Section – C (Do any five) (5x2)**

- (i) Define Pinch Off Voltage.
- (ii) Why Base region of Transistor is lightly doped and is made thin?
- (iii) Explain Ripple Factor.
- (iv) Give disadvantages of Half wave Rectifier over A Full Wave Rectifier.
- (v) A d.c voltage source having an open circuit voltage of 8V and internal resistance of 4 ohm. Obtain an equivalent current source.
- (vi) What is the charge on a p-type semiconductor. Explain.
- (vii) Draw the symbol for pnp and npn transistor for C.E mode.