

ASSIGNMENT-04

BASIC ELECTRICAL & ELECTRONICS ENGINEERING

Unit-III

Semiconductor Diodes and Diode Applications

Short Questions

1. What are the different types of semiconductors.
2. Define Peak Inverse Voltage of a rectifier. What are PIV for full wave centre tapped and bridge rectifiers?
3. Why the resistance of semiconductor material decreases with increases in temperature?
4. What is the difference between Zener and avalanche breakdown? Which of them is generally used for high voltage application?
5. What are the majority charge carriers in p-type and n-type semiconductors?
6. What is an ideal diode?
7. What is the basic difference between p-type and n-type semiconductor?
8. Define biasing and justify its necessity.
9. What is breakdown voltage?
10. Mention difference between clipper and clamper.
11. What is biased clipper?
12. What is knee voltage?
13. What is Zener diode?
14. Define static and dynamic resistance.
15. Differentiate between P-type and N-type Semiconductors. Also name the doping materials used for their formation.
16. Why Silicon is mostly proffered as a Semiconductor material. Explain by giving at least five reasons?
17. State cut in voltage value of diode for silicon and germanium.

Long Questions:

18. Draw the circuit diagram of a full wave bridge type rectifier using diode and explain its operation with suitable waveform.
19. What is a semiconductor diode and explain with suitable diagram about biasing of p-n Junction?
20. With a neat circuit diagram and waveforms, explain the working of centre tapped full wave rectifier. Also discuss about the merits & demerits of it.
21. Write short notes on clipper.
22. Explain the working of positive clamping circuits.
23. With a neat circuit diagram, explain the working of a half wave rectifier along with relevant waveforms.
24. Explain the VI Characteristic of a Semiconductor Diode with suitable graph.