

Question Bank

Course : III Year B.Sc Physics

Sub. Code: UPH514P7

Subject :BASIC ELECTRONICS

Short Questions:

1. What is a semiconductor? Mention its important properties.
2. What are the most commonly used semiconductors and why?
3. What is Hall effect?
4. Write a note on energy band Fermi level in semiconductors.
5. What is PN Junction?
6. Give the mechanism of hole current flow in a semiconductor.
7. What is zener diode?
8. What is a tunnel diode?
9. What is LED?
10. Give two applications of LED's.
11. What is a transistor?
12. Define the alpha gain and beta gain of a transistor.
13. What is meant by transistor biasing?
14. Draw the symbols for npn and pnp transistors.
15. Mention the modes of configuration of transistor.
16. Describe the operation of transistor as an amplifier.
17. Why is collector current slightly less than emitter current?
18. What is the origin of the name hybrid?
19. What is the significance of arrow in the transistor symbol?
20. Why is a transistor low powered device?
21. Write the differences between FET and Bipolar transistor.
22. List some applications of SCR.
23. Define JFET parameters and establish relationship between them.
24. Mention some differences between MOSFET and FET.
25. Draw the circuit symbol of SCR.
26. List few applications of SCR.
27. Explain the terms breakover voltage, holding current and forward current rating used in SCR analysis.
28. What is UJT?
29. What is the difference between n-channel JFET and UJT?
30. Write some important applications of UJT.
31. What is the difference between voltage and power amplifier?
32. Why do we use transformer in the output stage?
33. What is (a) Class A (b) Class B power amplifier?
34. What is an emitter follower? List its applications
35. What are effects of negative feedback employed in high gain amplifiers?

36. What are practical applications of emitter follower?
37. What are sinusoidal oscillators?
38. Write the Barkhausen criterion for maintain oscillations.
39. What are the essentials of an oscillator?
40. What are the limitations of LC and RC oscillators?
41. What is Modulation? Mention its types.
42. Mention some difference between AM and FM.
43. What is the need for modulation?
44. What is amplitude modulation?
45. What is frequency modulation?
46. What is the importance of sideband frequencies?
47. Define modulation factor.
48. What is interlaced scanning?
49. Draw the block diagram of AM Radio transmitter.
50. What is demodulation?

Review Questions

1. Write a note on energy band description and Fermi level in semiconductors.
2. What is a PN junction? Explain the formation of potential barrier in a PN junction.
3. Explain the V-I Characteristics of Zener diode.
4. Explain the working of tunnel diode?
5. Explain in detail the action of transistor in CE mode.
6. Explain in detail the action of transistor in CB mode.
7. How will you measure h parameters of a linear circuit.
8. Explain the construction and working of a JFET.
9. Explain the construction and working of a MOSFET.
10. Explain the V-I characteristics of UJT
11. Discuss the construction, working and characteristics of SCR.
12. Explain the push-pull circuit with a neat diagram.
13. With a neat diagram, explain the action of Hartley oscillator.
14. With a neat diagram, explain the action of Phase shift oscillator.
15. With a neat diagram, explain the action of Wien bridge oscillator.
16. With a neat diagram, explain the action of Colpitts oscillator.
17. Explain amplitude modulation.
18. What is superhetrodyne principle? Explain the function of each stage of superhetrodyne receiver with the help of a block diagram.
19. Explain frequency modulation.
20. Write a note on satellite communication.
21. Explain the function of Image orthicon camera tube.
22. Write a short note on colour television.