

Saitechinfo NEET-JEE Academy



Energy Band Diagram in Semiconductors

1. The energy band gap in conductors is _____.
 2. Semiconductors have a band gap typically in the range of _____ eV.
 3. The valence band in a semiconductor is _____ at 0 K.
 4. In intrinsic semiconductors, the number of electrons is equal to the number of _____.
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Types of Semiconductors

5. Silicon and germanium are examples of _____ semiconductors.
 6. Adding trivalent impurities to a semiconductor creates a _____ semiconductor.
 7. A donor impurity introduces _____ in an n-type semiconductor.
 8. P-type semiconductors have an excess of _____.
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Formation of p-n Junction Diode and its V-I Characteristics

9. At the p-n junction, the depletion region is formed due to _____.
 10. The current in a diode flows only in the _____ bias condition.
 11. The breakdown voltage of a diode is the voltage at which _____ occurs.
 12. The forward voltage drop for a silicon diode is approximately _____ volts.
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Rectification Process

13. The main application of a diode in rectification is converting _____ to _____.
 14. A full-wave rectifier has an efficiency of _____%.
 15. The ripple factor in a half-wave rectifier is _____ compared to a full-wave rectifier.
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Special Purpose Diodes

16. A Zener diode is used for _____ voltage regulation.
 17. The light-emitting diode (LED) emits light when _____ recombine.
 18. A photodiode operates in _____ bias mode.
 19. The voltage across a Zener diode in breakdown is _____.
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Transistors and Their Applications

20. In a transistor, the region between the emitter and collector is called the _____.
 21. A common base configuration has a _____ input impedance.
 22. The current gain in a common emitter configuration is represented by _____.
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23. A transistor can function as an _____ or _____.

Digital and Analog Signals

24. Digital signals are characterized by _____ states.

25. Analog signals vary _____ over time.

26. Noise affects _____ signals more significantly.

Logic Gates, Boolean Algebra, and De Morgan's Theorem

27. The output of an AND gate is true only when _____ inputs are true.

28. The NOR gate is the complement of the _____ gate.

29. According to De Morgan's theorem, $(A + B)'$ is equivalent to _____.

Modulation and Its Types

30. Modulation is the process of varying a _____ wave to encode information.

31. In amplitude modulation, the _____ of the carrier wave changes.

32. Frequency modulation alters the _____ of the carrier wave.

Basic Elements of a Communication System

33. The primary components of a communication system are the transmitter, _____, and receiver.

34. Noise in a communication system refers to _____.

35. The bandwidth of a signal determines its _____.

Propagation of Electromagnetic Waves Through Space

36. Electromagnetic waves consist of oscillating _____ and _____ fields.

37. The speed of electromagnetic waves in a vacuum is _____ m/s.

38. The range of frequencies used in communication is called the _____ spectrum.

Important Communication Systems

39. The GPS system uses _____ signals for navigation.

40. Mobile communication uses _____ for data transfer.
