Department of Electronics
L.S College, Muzaffarpur

Q1. A semiconductor is formed by …… bonds.

1. Covalent
2. Electrovalent
3. Co-ordinate
4. None of the above

Answer : 1

Q2. A semiconductor has …… temperature coefficient of resistance.

1. Positive
2. Zero
3. Negative
4. None of the above

Answer : 3

Q3. The most commonly used semiconductor is ……..

1. Germanium
2. Silicon
3. Carbon
4. Sulphur

Answer : 2

Q4. A semiconductor has generally …… valence electrons.

1. 2
2. 3
3. 6
4. 4

Answer : 4

Q5. The resistivity of pure germanium under standard conditions is about …….

1. 6×10^{4}
2. Ω cm
3. 60
4. Ω cm
5. 3×10^{6}
6. Ω cm
7. 6×10^{-4}
8. Ω cm

Answer : 2

Q6. The resistivity of a pure silicon is about ……

1. 100 Ω cm
2. 6000 Ω cm
3. 3×10^{5} Ω m
4. 6×10^{-8} Ω cm

Answer : 2

Q7. When a pure semiconductor is heated, its resistance ……..

1. Goes up
2. Goes down
3. Remains the same
4. Can't say

Answer : 2

Q8. The strength of a semiconductor crystal comes from ……..

1. Forces between nuclei
2. Forces between protons
3. Electron-pair bonds
4. None of the above

Answer : 3

Q9. When a pentavalent impurity is added to a pure semiconductor, it becomes ……

1. An insulator
2. An intrinsic semiconductor
3. p-type semiconductor
4. n-type semiconductor

Answer : 4

Q10. Addition of pentavalent impurity to a semiconductor creates many ……..

1. Free electrons
2. Holes
3. Valence electrons
4. Bound electrons

Answer : 1

Q11. A pentavalent impurity has ……. Valence electrons

1. 3
2. 5
3. 4
4. 6

Answer : 2

A12. An n-type semiconductor is ……

1. Positively charged
2. Negatively charged
3. Electrically neutral
4. None of the above

Answer : 3

Q13. A trivalent impurity has ….. valence electrons

1. 4
2. 5

3. 6
4. 3

Answer : 4

A14. Addition of trivalent impurity to a semiconductor creates many ……..

1. Holes
2. Free electrons
3. Valence electrons
4. Bound electrons

Answer : 1

Q15. A hole in a semiconductor is defined as …….

1. A free electron
2. The incomplete part of an electron pair bond
3. A free proton
4. A free neutron

Answer : 2

Q16. The impurity level in an extrinsic semiconductor is about ….. of pure semiconductor.

1. 10 atoms for 10^8 atoms
2. 1 atom for 10^8 atoms
3. 1 atom for 10^4 atoms
4. 1 atom for 100 atoms

Answer : 2

Q17. As the doping to a pure semiconductor increases, the bulk resistance of the semiconductor ……..

1. Remains the same
2. Increases
3. Decreases
4. None of the above

Answer : 3

Q18. A hole and electron in close proximity would tend to …….

1. Repel each other
2. Attract each other
3. Have no effect on each other
4. None of the above

Answer : 2

Q19. In a semiconductor, current conduction is due to ……..

1. Only holes
2. Only free electrons
3. Holes and free electrons
4. None of the above

Answer : 3

Q20. The random motion of holes and free electrons due to thermal agitation is called …….

1. Diffusion
2. Pressure
3. Ionisation
4. None of the above

Answer : 1

Q21. A forward biased pn junction diode has a resistance of the order of

1. Ω
2. kΩ
3. MΩ
4. None of the above

Answer : 1

Q22. The battery connections required to forward bias a pn junction are ……

1. +ve terminal to p and –ve terminal to n
2. -ve terminal to p and +ve terminal to n
3. -ve terminal to p and –ve terminal to n
4. None of the above

Answer : 1

Q23. The barrier voltage at a pn junction for germanium is about ……

3. 5 V
4. 3 V
5. Zero
6. 3 V

Answer : 4

Q24. In the depletion region of a pn junction, there is a shortage of ……..

1. Acceptor ions
2. Holes and electrons
3. Donor ions
4. None of the above

Answer : 2

Q25. A reverse bias pn junction has ……

1. Very narrow depletion layer
2. Almost no current
3. Very low resistance
4. Large current flow

Answer : 2

Q26. A pn junction acts as a …….

1. Controlled switch
2. Bidirectional switch
3. Unidirectional switch
4. None of the above

Answer : 3

Q27. A reverse biased pn junction has resistance of the order of

1. Ω
2. kΩ
3. MΩ
4. None of the above

Answer : 3

Q28. The leakage current across a pn junction is due to ……..

1. Minority carriers
2. Majority carriers
3. Junction capacitance
4. None of the above

Answer : 1

Q29. When the temperature of an extrinsic semiconductor is increased, the pronounced effect is on……

1. Junction capacitance
2. Minority carriers
3. Majority carriers
4. None of the above

Answer : 2

Q30. With forward bias to a pn junction , the width of depletion layer ……

1. Decreases
2. Increases
3. Remains the same
4. None of the above

Answer : 1

Q31. The leakage current in a pn junction is of the order of

1. Aa
2. mA
3. kA
4. μA

Answer : 4

Q32. In an intrinsic semiconductor, the number of free electrons ……

1. Equals the number of holes
2. Is greater than the number of holes
3. Is less than the number of holes
4. None of the above

Answer : 1

Q33. At room temperature, an intrinsic semiconductor has …….

1. Many holes only
2. A few free electrons and holes
3. Many free electrons only
4. No holes or free electrons

Answer : 2

Q34. At absolute temperature, an intrinsic semiconductor has …….

1. A few free electrons
2. Many holes
3. Many free electrons
4. No holes or free electrons

Answer : 4

Q35. At room temperature, an intrinsic silicon crystal acts approximately as ……

1. A battery
2. A conductor
3. An insulator
4. A piece of copper wire

Answer : 3

Q36. Under normal conditions a diode conducts current when it is ……

1. reverse biased
2. forward biased
3. avalanched
4. saturated

Answer : 2

Q37. The term bias in electronics usually means …….

1. the value of ac voltage in the signal.
2. the condition of current through a pn junction.
3. the value of dc voltages for the device to operate properly.
4. the status of the diode.

Answer : 3