

MATHS4U

Assignment
10th Class

It's all about believing
Topic:- Chemical Bonding

1. Chlorine atom and chloride ions (a) have an equal number of protons (b) have an equal number of electrons (c) form covalent bonds (d) react spontaneously with water.
2. When sodium reacts with fluorine. (a) each fluorine atom loses one electron (b) each sodium atom gains one electron (c) a covalent bond is formed (d) the compound formed is a good conductor of electricity in the molten state.
3. Noble gases exist as individual (a) atoms (b) molecules (c) ions (d) compounds
4. An ionic bond is formed when (a) the combining atoms gain electrons (b) the combining atoms lose electrons (c) a metallic element reacts with a nonmetallic element (d) two metallic elements react
5. Electropositive atoms tend to form (a) negative ions (b) positive ions (c) covalent bonds (d) metallic electrons
6. Which of the following can lose two electrons to attain the configuration of argon? (a) Mg (b) Br (c) S (d) Ca
7. Electrovalent compounds are usually (a) solids with low melting points (b) solids with high melting points (c) volatile liquids (d) organic compounds
8. Which of the following statements is wrong? (a) An atom is electrically neutral (b) the size of a cation is smaller than that of the corresponding atom (c) The size of an anion is bigger than that of the corresponding atom (d) An atom and its ion have an unequal number of protons.
9. In electrovalency (a) molecules lose electrons forming atoms (b) molecules gain electrons forming atoms (c) atoms share electrons (d) atoms lose or gain electrons forming ions
10. A volatile solid soluble in benzene would probably (a) have electrovalent bonding (b) have covalent bonding (c) be a good conductor of electricity (d) be a salt
11. A double bond between two carbon atoms is formed by (a) the transfer of two electrons from one carbon atom to the other (b) the transfer of one electron from one carbon atom to the other (c) two shared electron pairs (d) the sharing of two electrons
12. Which of the following indicates that the bonding in hydrogen chloride is covalent? (i) An aqueous solution of hydrogen chloride forms hydrogen with metals (ii) hydrogen chloride is a gas (iii) Hydrogen chloride is not acidic in the absence of water (iv) Dry hydrogen chloride is a non-conductor of electricity (a) ii, iii, and iv only (b) i, ii, and iii only (c) i and iv only (d) i, ii, iii, and iv.

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13. Which of the following is a non-polar molecule? (a) NH_3 (b) HCl (c) CCl_4 (d) H_2O
14. The bonding in ammonium chloride (a) is covalent only (b) is electrovalent only (c) consists of three covalent nitrogen-hydrogen bonds and an electrovalent bond between the ammonia molecule and the chlorine atom (d) consist of four covalent nitrogen-hydrogen bonds and one electrovalent bond between the ammonium ion and chloride ion.
15. Which of the following is a non-directional bond? (a) Covalent (b) Electrovalent (c) coordinate-covalent (d) none
16. Both ionic and covalent bonds are present in (a) CCl_4 (b) CaO (c) NaOH (d) CO_2
17. The shape of $[\text{Cu}(\text{NH}_3)_4]^{2+}$ ion is (a) tetrahedral (b) square planar (c) trigonal bipyramidal (d) octahedral
18. In which of the following molecule, the angle around the central atom is largest? (a) CO_2 (b) NH_3 (c) CH_4 (d) H_2O
19. Which of the following molecules contains a triple bond? (a) CCl_4 (b) C_2H_4 (c) C_2H_2 (d) NH_3
20. Which of the following structure will have a bond angle of 120° around the central atom? (a) Linear (b) Tetrahedral (c) Triangular (d) Square planar
21. Molten sodium chloride conducts electricity due to the presence of (a) free electrons (b) free ions (c) free molecules (d) atoms of sodium and chlorine
22. The bond between the identical non metal atoms has a pair of electrons (a) unequally shared between the two (b) transferred fully from one atom to another (c) with identical charge (d) equally shared between them
23. The angle between two covalent bonds is minimum in (a) H_2O (b) CO_2 (c) NH_3 (d) CH_4
24. Which of the following compounds has a linear structure? (a) CCl_4 (b) SO_2 (c) C_2H_2 (d) C_2H_4
25. The total number of electrons that take part in forming bonds is (a) 2 (b) 4 (c) 6 (d) 8
26. The compound which contains both ionic and covalent bonds (a) CH_4 (b) H_2 (c) KCN (d) KCl
27. The octet rule is not valid for the molecule (a) CO_2 (b) CO (c) H_2O (d) O_2 .
28. The total number of electrons that take part in forming bonds in N_2 is (a) 2 (b) 4 (c) 6 (d) 8

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29. A covalent bond is likely to be formed between (a) sodium and chlorine (b) calcium and oxygen (c) nitrogen and hydrogen (d) magnesium and fluorine
30. Each of the following compound contains both ionic and covalent both except (a) NH_4Cl (b) CCl_4 (c) KMnO_4 (d) NaNO_3
31. In which of the following compounds does every atom have eight electrons in its valence shell? (a) IF_5 (b) C_2H_4 (c) SiF_4 (d) KH
32. In which of the following compounds does the central atom has less than eight electrons in its valence shell? (a) SiH_4 (b) BF_3 (c) PF_5 (d) C_2H_4
33. Which pair will not form electrovalent bond? (a) H and Ca (b) C and Cl (c) Na and O (d) Ca and C
34. The geometrical structure of the PF_3 molecule is (a) trigonal pyramidal (b) trigonal bipyramidal (c) tetrahedral (d) trigonal planar
35. Which of the following molecule have a pyramidal structure ? (a) PCl_5 (b) NH_3 (c) BF_3 (d) SiF_4
36. In which molecule the bond angle is maximum (a) CH_4 (b) H_2O (c) H_2S (d) CO_2
37. π bonding occurs in each of the following except (a) CO_2 (b) C_2H_4 (c) CH_4 (d) C_6H_6
38. In which of the following molecules does the central atom use sp^2 hybrid atomic orbitals in forming bonds? (a) H_2S (b) BCl_3 (c) NH_3 (d) PCl_3
39. Acetylene (C_2H_2) molecule contains (a) 3σ bonds and 2π bonds (b) 2σ bonds and 3π bonds (c) 4σ bonds and 1π bonds (d) 5σ bonds

Answer

- 1.A 2.D 3.A 4.C 5.B 6.D 7.B 8.D 9.D 10.B 11.C 12.A 13.C 14.D 15.B
16.C 17.B 18.A 19.C 20.C 21.B 22.D 23.A 24.C 25.C 26.C 27.B 28.C
29.C 30.B 31.C 32.B 33.B 34.A 35.B 36.D 37.C 38.B 39.A