

SEMESTER-TWO

CHEMISTRY

Class X

Sample Paper—2

Max. Marks: 50

Time Allowed: 90 minutes

General Instructions:

- (i) This question paper consists of 40 questions in 4 sections.
- (ii) Section A consists of 10 Objective type questions carrying 1 mark each.
- (iii) Section B consists of 10 Fill in the blanks type questions carrying 1 mark each.
- (iv) Section C consists of 10 True or False statement type questions carrying 1 mark each.
- (v) Section D consists of 10 Short answer type questions carrying 2 marks each.

Section A

Select and write one most appropriate option out of the four options given for each of the questions 1–10.

1. Which of the following is not a property of ionic compound?
 - (a) Ionic compounds are usually crystalline solids.
 - (b) Ionic compounds conduct electricity in solid-state.
 - (c) Ionic compounds are insoluble in organic solvents.
 - (d) Ionic compounds have high melting and boiling points.
2. Which type of hybridization occurs in beryllium chloride?
 - (a) sp^3 -hybridization
 - (b) sp^2 -hybridization
 - (c) sp -hybridization
 - (d) None of these
3. Covalent bond occurs between:
 - (a) two metals
 - (b) two non-metals
 - (c) a metal and a non-metal
 - (d) none of these

4. Which of the following is a directional bond?
(a) Coordinate (b) Covalent
(c) Metallic (d) All these
5. When a single product is produced from two or more reactants, the reaction is
(a) Metathesis reaction (b) Decomposition reaction
(c) Combination reaction (d) Displacement reaction
6. These reactions are also known as Metathesis reaction.
(a) Combustion reaction (b) Decomposition reaction
(c) Combination reaction (d) Double displacement reaction
7. It is the process of gain of oxygen or loss of hydrogen.
(a) Oxidation (b) Reduction
(c) Oxidation-Reduction (d) None of these
8. The process of oxidation involves
(a) addition of oxygen (b) addition of hydrogen
(c) removal of oxygen (d) None of these
9. This species undergoes the loss of electron during chemical reaction.
(a) oxidising agent (b) reducing agent
(c) both (a) & (b) (d) none of these
10. Oxidation number of free electrons is
(a) Zero (b) +1
(c) -1 (d) -2

Section B

Fill in the blanks with a suitable word for each of the questions 11–20.

11. The hybrid states of O atom in H_2O and H_3O^+ are respectively ____ .
12. In silver acetylide the sigma bond between the carbon atoms is constituted by _____ orbitals.
13. A bond formed by donor-acceptor mechanism is called _____ .
14. The energy of H-bond is _____ .
15. In general larger the bond length _____ is bond energy.
16. In redox reactions, the reducing agent _____ electrons.
17. The oxidation number of S in $\text{S}_2\text{O}_3^{2-}$ is _____ .
18. The formula of vanadium (V) oxide is _____ .

19. The sum of oxidation numbers of all atoms in a molecule is _____ .
20. The sum of O.N. of all carbons in C_6H_5CHO is _____ .

Section C

State whether the following statements are true or false for each of the questions 21–30.

21. Ionic bond involves a metal and a non-metal.
22. Molecular shape of NH_3 is trigonal pyramidal.
23. Metals are not lustrous.
24. Dipole moment of carbon dioxide is 1.83D.
25. Atomic radius is measured in nanometres.
26. In a chemical reaction, the reactant which is completely consumed is called excess reactant.
27. In a chemical equation, reactants are written on the right hand side.
28. Chemical reactions involving oxidation-reduction are called redox reactions.
29. Manganese dioxide is a reducing agent.
30. Concentrated nitric acid is an oxidising agent.

Section D

Answer each of the questions 31–40.

31. List some factors that influence the formation of ionic bonding.
32. List the properties of covalent compounds.
33. Give two examples each of polar and non-polar molecules.
34. Differentiate between ionic, covalent and metallic bonding.
35. Define an atom.
36. Define molecule.
37. What is an ion?
38. What do you mean by the term limiting reagents?
39. Explain the term oxidation number giving examples.
40. Write the rules for assigning oxidation number to an atom.