

SEMESTER-TWO

CHEMISTRY

Class X

Sample Paper—1

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 these is an ionic compound?
 - (a) NaCl
 - (b) H₂O
 - (c) NH₃
 - (d) CO₂
2. Which type of hybridization occurs in methane?
 - (a) sp³-hybridization
 - (b) sp²-hybridization
 - (c) sp-hybridization
 - (d) None of these
3. This is the force which binds various metal atoms together.
 - (a) ionic bond
 - (b) covalent bond
 - (c) metallic bond
 - (d) none of these

4. Who proposed law of definite proportions?
(a) John Dalton (b) Joseph Proust
(c) Robert Boyle (d) None of these
5. Which of the following contains one mole molecules of the substance?
(a) 16 g Oxygen (b) 7 g Nitrogen
(c) 2 g Hydrogen (d) 36 g Water
6. This is the most reactive metal.
(a) Potassium (b) Gold
(c) Aluminium (d) Iron
7. Which of the following is a characteristic of a reversible reaction?
(a) It never proceeds to completion in a closed container.
(b) It proceeds only in forward direction.
(c) Number of moles of reactants and products are equal.
(d) It can be influenced by a catalyst.
8. The process of reduction involves
(a) addition of oxygen (b) addition of hydrogen
(c) removal of hydrogen (d) None of these
9. Which of the following is an oxidising agent?
(a) Nitric acid (HNO_3) (b) Sulphur dioxide (SO_2)
(c) Hydrogen sulphide (H_2S) (d) Oxalic acid ($\text{H}_2\text{C}_2\text{O}_4$)
10. In which of the following species oxidation number of C is -3 ?
(a) C_2H_2 (b) CO_2
(c) HCO_3^- (d) None of these

Section B

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

11. Pi bond is _____ than sigma bonds.
12. Covalent bond is formed by _____ of half-filled atomic orbitals.
13. Covalent bond between two atoms is said to be _____ if they share six electrons.
14. The density of ice is less than water due to the _____ .
15. Among CaF_2 , CaCl_2 , CaBr_2 , CaI_2 , the highest covalent character is present in _____ .
16. Oxidation and reduction are _____ processes.
17. The oxidation number of oxygen in NO_2 is _____ while in KO_2 it is _____ .

18. Oxidation number of the element _____ when it behaves as oxidising agent during the reaction.
19. Oxidation number of nitrogen in Hydrazoic acid HN_3 according to rules is _____ .
20. Oxidation numbers of two chlorine atoms in CaOCl_2 are respectively _____ .

Section C

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

21. Ionic compounds are insoluble in water.
22. The ionic bond formed by sharing of electrons between two atoms.
23. Covalent compounds conduct electricity.
24. The magnitude of intermolecular forces control the melting, boiling points of the substance.
25. Law of conservation of mass is also known as law of indestructibility of matter.
26. Gold is the least reactive metal.
27. All combustion reactions are endothermic.
28. Cations are also called basic radicals.
29. Oxidising reagents undergo the gain of electron during chemical reaction.
30. Oxidising agent acts as electron donor.

Section D

Answer each of the questions 31–40.

31. List some properties of ionic compounds.
32. What do you mean by hybridization?
33. List some factors that influence the formation of covalent bonding.
34. What do you mean by metallic bonding?
35. What is Dative bond? How it is different from covalent bond?
36. State law of conservation of mass.
37. What is the difference between an atom and a molecule?
38. What is a chemical equation? Give an example.
39. Explain the terms oxidising and reducing agents. Give some examples.
40. What are the differences between oxidising and reducing agents?