Chemistry

1. Example of an element among the following is

   (1) Water   (2) Ammonia   (3) Salt   (4) Iron

Ans. (4)

Sol. Water, ammonia and salt are compounds while Iron is an element.

2. Atomicity of oxygen in ozone molecule is

   (1) 1   (2) 2   (3) 3   (4) 4

Ans. (3)

Sol. Atomicity = Number of atoms present in a molecule.

So, for O_3 (ozone)

Atomicity of O = 3

3. Number of moles present in 0.36 g of water is

   (1) 0.1   (2) 0.2   (3) 0.01   (4) 0.02

Ans. (4)

Sol. $\because \text{Moles} = \dfrac{\text{Mass(gm)}}{\text{gm. mol. mass}}$

So $\because \text{Moles of water} = \dfrac{0.36 \text{ gm}}{18 \text{ gm} / \text{mol}} = 0.02 \text{ mol}$

4. Radioactive isotope used in the treatment of cancer disease is

   (1) Iodine -131   (2) Cobalt-60   (3) Sodium-24   (4) Chlorine-37

Ans. (2)

Sol. Cobalt – 60 is used in treatment of cancer disease.

5. The number of coordinate covalent bonds in the structure of nitric acid is

   (1) 0   (2) 1   (3) 2   (4) 3

Ans. (2)

Sol. Nitric acid (HNO_3)

So, number of coordinate covalent bond = 1

6. The pair of valencies exhibited by Tin (Sn) is

   (1) 1, 4   (2) 1, 2   (3) 2, 3   (4) 2, 4

Ans. (4)

Sol. Tin (Sn) exhibit two valencies 2 and 4.

7. The conjugate bases of Bronsted acids H_2O and HCl are respectively

   (1) OH^-, Cl^- (2) H_3O^+, Cl^- (3) H_3O^+, Cl^+ (4) OH^-, Cl^+

Ans. (1)

Sol. By removing one H^+ ions, we get bronsted bases of H_2O and HCl which are OH^- and Cl^- respectively.

8. The chemical formula of 'Plaster of Paris' is

   (1) $CaSO_4 \cdot \frac{1}{2}H_2O$ (2) $CaSO_4 \cdot 2H_2O$ (3) $CaSO_4 \cdot H_2O$ (4) $CaSO_4 \cdot \frac{3}{2}H_2O$

Ans. (1)

Sol. Chemical formula of plaster of paris $= CaSO_4 \cdot \frac{1}{2}H_2O$

9. The oxidation reaction in the following chemical changes is

   (1) $Cl + e^- \rightarrow Cl^-$

   (2) $Mg^{+2} + 2e^- \rightarrow Mg$

   (3) $MnO_4^- + e^- \rightarrow MnO_4^{-2}$

   (4) $Fe^{+2} \rightarrow Fe^{+3} + e^-$.

Ans. (4)

Sol. loss of e^- is oxidation.

   $Fe^{+2} \rightarrow Fe^{+3} + e^-$

   In this, loss of e^- take place so it is oxidation reaction.

10. $N_2(g) + 3H_2(g) \xrightarrow{Fe/Mo} 2NH_3(g)$

    Mo in the above reaction is

    (1) Catalyst promoter

    (2) Catalyst poison (inhibitor)

    (3) Bio-catalyst

    (4) Auto-catalyst

Ans. (1)

Sol. $N_2(g) + 3H_2(g) \xrightarrow{Fe/Mo} 2NH_3(g)$

   In this reaction, Fe is catalyst and Mo increase the efficiency of catalyst so it is catalyst promoter.

11. Element having highest electronegativity in the periodic table is

    (1) F   (2) Cl   (3) Br   (4) I

Ans. (1)

Sol. F is The most electronegative element in periodic table.

12. The molecular formula of 'Freon-12' is

    (1) $CFCl_3$ (2) CF_2Cl_2 (3) $C_2F_2Cl_4$ (4) $C_2F_3Cl_3$

Ans. (2)

Sol. Freon – XYZ

   where X = number of C atoms in molecules – 1

   Y = number of H atoms + 1

   Z = number of F atoms

   So, Freon – 12 will be CF_2Cl_2

13. The monomer units of terylene polymer are

(1) Terephthatic acid and ethylene glycol

(2) Adipic acid and ethylene glycol

(3) Terephthalic acid and hexamethylene diamine

(4) Adipic acid and hexamethylene diamine

Ans. (1)

Sol. Momomers of terylene polymers are terephthatic acid and ethylene glycol.