

## Section-A (MCQ's)

1. Choose the correct answer for each from the given options:
- Metals which have low melting and boiling points belongs to group:  
(a) IV A (b) III A (c) II A (d) IA
- Formula of Quick lime is:  
(a) Ca(OH)<sub>2</sub> (b) CaO (c) NaOH (d) Na<sub>2</sub>O
- The ion which is smaller than parent atom is known as:  
(a) Negative ion (b) Positive ion (c) Neutral ion  
(d) None of these
- Tincol is the name of:  
(a) Alumina (b) Diaspore (c) Borax (d) Bibbsite
- Benzene was first isolated from coal tar in the year:  
(a) 1845 (b) 1820 (c) 1825 (d) 1835
- S<sub>N</sub> reaction occurs in steps:  
(a) Three (b) Two (c) One (d) None of these
- The boiling point of methanol is:  
(a) 63.7°C (b) 84.7°C (c) 70°C (d) 80°C
- The visual pigment is formed by the vitamin:  
(a) D (b) C (c) B (d) A
- Chromo proteins are coloured due to presence of the group:  
(a) Glyco-protein (b) Lipid-protein (c) Non-protein  
(d) Phospho-protein
- Radio-active isotope of hydrogen is \_\_\_\_\_  
(a) Protium (b) Deuterium (c) Tritium (d) All of these
- In periodic table the first long period is:  
(a) Period-1 (b) Period-2 (c) Period-3 (d) Period-4
- The formula of phosphine is:  
(a) PH<sub>3</sub> (b) PH<sub>2</sub> (c) PH<sub>4</sub> (d) PO<sub>3</sub>
- The hydrides which are intermediate between metallic and covalent hydrides are known as:  
(a) Complex (b) Polymeric (c) Border line (d) Ionic
- Brass is an alloy of:  
(a) Fe-Zn (b) Cu-Sn (c) Cu-Zn (d) Pb-Fe
- Blister is the name of impurity in:  
(a) Sodium (b) Iron (c) Zinc (d) Copper
- Which of the following hydrocarbon on inhalation produces anaesthesia:  
(a) Methane (b) Ethene (c) Propene (d) Butene

## Section-B (Short Answer)

Note: Answer any EIGHT of the following questions. Each question carries 05 marks.

- Q.2 State the periodic law. In what various ways it help the chemist?
- Q.3 Complete the following reactions:  
(i)  $\text{PCl}_5 + \text{H}_2\text{O} \longrightarrow$  (ii)  $\text{Mg} + \text{N}_2 + \text{H}_2\text{O} \longrightarrow$   
(iii)  $\text{Ca} + \text{P}_2 + \text{H}_2\text{O} \longrightarrow$  (iv)  $\text{Al} + \text{C}_2 + \text{H}_2\text{O} \longrightarrow$   
(v)  $\text{Ca} + \text{C}_2 + \text{H}_2\text{O} \longrightarrow$
- Q.4 How aluminium is extracted from bauxite by Hall's and Serpek's method?
- Q.5 Prove that HNO<sub>3</sub> is a strong Oxidant.
- Q.6 Discuss why water and ammonia molecules act as ligands but H<sub>2</sub>O and do not?
- Q.7 What is meant by:  
(i) Catenation (ii) Homologous series (iii) Isomerism  
(iv) Cracking (v) Polymerization
- Q.8 Write electronic structure of the following molecules.  
(i) Acetone (ii) Nitroethane  
(iii) Phenyl magnesium bromide  
(iv) Silver acetylide  
(v) Mono sodium acetylide
- Q.9 What is meant by hydrophobic and hydrophilic property of detergents?
- Q.10 Discuss importance and structure of Tocopherol.
- Q.11 Describe briefly elements of Nutrition.

## Section-C (Descriptive Answer)

Note: Answer any TWO of the following questions.

- Q.12(a) Discuss the importance of the following:  
(i) Cl<sub>2</sub> (ii) HNO<sub>3</sub> (iii) H<sub>2</sub>SO<sub>4</sub>
- (b) Describe the extraction of sodium from common salt. How and under what conditions sodium reacts with:  
(i) Water (ii) Hydrogen (iii) Nitrogen (iv) Oxygen
- Q.13(a) Write note on any two of the following:  
(i) Physical and chemical properties of acetic acid  
(ii) Reaction of benzene (iii) Metallurgy of metals
- (b) What are amino acids? How can an amino acid act as buffer?
- Q.14(a) Write structure of the following:  
(i) Ferrocyanide

(ii) Diethylene triamine (iii) Acetophenone

(iv) Sodium benzoat (v) Methyl formate

(vi) Asparagine (vii) Zwitterion

2) Write I.U.P.A.C. names of the following:

