

## Section-A

## Multiple choice Questions (MCQ's)

Q.1: Choose the correct answer for each from the given options:

- (i) The formula of chalcocite is:  
 (a) CuS (b) Cu<sub>2</sub>S (c) Cu<sub>3</sub>S (d) Cu<sub>2</sub>S<sub>3</sub>
- (ii) Bile juice has pH in between:  
 (a) 8 to 9 (b) 7 to 8 (c) 9 to 10 (d) 10 to 11
- (iii) Riboflavin is also called as vitamin:  
 (a) B<sub>1</sub> (b) B<sub>2</sub> (c) B<sub>6</sub> (d) B<sub>12</sub>
- (iv) The dietary requirement of vitamin K is  $\mu$ g recommended is:  
 (a) 70 - 90 (b) 70 - 100 (c) 70 - 120 (d) 70 - 140
- (v) Which of the following group is present in Glycine:  
 (a) NO<sub>2</sub> (b) NH<sub>3</sub> (c) NH<sub>2</sub> (d) NO
- (vi) d<sup>10</sup>s<sup>2</sup> is the electronic configuration of:  
 (a) Co (b) Ni (c) Cu (d) Zn
- (vii) In the preparation of Rayon and Plastics which one of the following is used:  
 (a) HCl (b) H<sub>2</sub>SO<sub>4</sub> (c) HNO<sub>3</sub> (d) CH<sub>3</sub>COOH
- (viii) Nitro alkane is formed when vapors of HNO<sub>3</sub> and CH<sub>4</sub> are passed through the tube

made up of metal:

- (ix) (a) Al (b) Zn (c) Cu (d) Fe
- (x) Nail polish remover is:  
 (a) Ethanol (b) Methanol (c) Water (d) Benzene
- (xi) Above 68.5°C phenol is miscible in:  
 (a) Alcohol (b) Ether (c) Water (d) Benzene
- (xii) Gastric juice contains:  
 (a) H<sub>2</sub>SO<sub>4</sub> (b) HCl (c) HNO<sub>3</sub> (d) HOCl
- (xiii) In oil gas and coal gas acetylene is present up to:  
 (a) 45% (b) 30% (c) 20% (d) 10%
- (xiv) Ordinary nitric acid density 1.4 g/L contains HNO<sub>3</sub>:  
 (a) 35% (b) 55% (c) 65% (d) 75%
- (xv) The derivative of cholesterol is:  
 (a) Aspartic acid (b) Cholic acid (c) Formic acid (d) Valeric acid
- (xvi) The B.P of ethyl alcohol is:  
 (a) 70.5°C (b) 78.5°C (c) 85.5°C (d) 98.5°C
- (xvii) Chile saltpeter is the formula of:  
 (a) HNO<sub>3</sub> (b) NaNO<sub>2</sub> (c) KNO<sub>3</sub> (d) Pb(NO<sub>3</sub>)<sub>2</sub>
- (xviii) Sodium phenoxide is formed under reaction with:  
 (a) 30% NaOH (b) 50% NaOH (c) 10% NaOH (d) 60% NaOH

## Section-B

## (Short Answer)

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

- Q.2: What is Nascent Hydrogen? Why the reaction of molecular hydrogen is slower than atomic hydrogen?
- Q.3: Prove that Nitric acid is strong oxidant.
- Q.4: Complete the following reactions with balanced chemical equations and conditions.
- (i)  $\text{HNO}_3 + \text{HCl} \longrightarrow$
- (ii)  $\text{AuCl}_3 + \text{HCl} \longrightarrow$
- (iii)  $\text{PbO} + \text{O}_2 \longrightarrow$
- (iv)  $\text{Al} + \text{HCl} \longrightarrow$
- (v)  $\text{C}_2\text{H}_4 + \text{HNO}_3 \longrightarrow$
- Q.5: How is the atomic number related to:  
 (i) The number of protons (ii) The number of electrons
- Q.6: Discuss important industrial products of monohydric alcohols.
- Q.7: How starch undergoes fermentation?
- Q.8: What is mutarotation? Illustrate with structure.
- Q.9: Write short notes on any TWO of the following:  
 (i) PVC (ii) Rayon (iii) Vitamin C
- Q.10: Discuss metamorphism with examples.
- Q.11: What is Plastic Sulphur? Why it is elastic?

**Section-C**  
**(Descriptive Answer)**

**Note: Answer any TWO of the following questions. Each question carries 15(7+7) marks.**

Q. 12(a) What are Lipids? Describe their classification and role in human body.

(b) Give reason why?

- (i) Graphite is a good conductor of electricity but diamond is not.
- (ii) Iron, Cobalt and Nickel are ferromagnetic.
- (iii) The melting and boiling points of d-block elements are high except Zinc.
- (iv) The transition elements have different oxidation states.

Q. 13: How do you convert the following:

- (i) Methanol to ether
- (ii) Glucose to ethanol
- (iii) Sodium phenoxide to phenol
- (iv) Sodium benzoate to benzene
- (v) Ethane to ethylene glycol
- (vi) Methanol to formaldehyde
- (vii) Ethyl magnesium chloride to propane

Q. 14(a) Write structure of each of the following:

- (i) Pyrogallol
- (ii) Menadione
- (iii) Pyruvate
- (iv) Sodium phenoxide
- (v) Isopropyl bromide
- (vi) Bees was
- (vii) Acetamide

(b) How do you name the following by I.U.E.P.A.C system

- (i) 
$$\begin{array}{c} \text{Cl} \\ | \\ (\text{CH}_3)_2\text{-CH-C-Cl} \\ | \\ \text{Cl} \end{array}$$
- (ii)  $\text{CH}_2=\text{CH}_2-\text{CH}_2-\text{COOCH}_3$
- (iii)  $(\text{CH}_3)_2\text{-CH-CH-C-CH}_3$
- (iv)  $(\text{CH}_3)_2\text{-CH-CH}_2\text{-OH}$
- (v)  $(\text{CH}_3)_2\text{-C-Br}$
- (vi)  $[\text{Cr}(\text{NH}_3)_4\text{Cl}_2]\text{Cl}$
- (vii)  $[\text{Co}(\text{en})_3][\text{NO}_2]_2$