CHEMISTRY

BOOKS - FULL MARKS CHEMISTRY (TAMIL ENGLISH)

SAMPLE PAPER - 18 (UNSOLVED)

Part I

1. Which of the following statements, about the advantage of roasting of sulphide ore before reduction is not true ?

A. ΔG_f° of sulphide is greater than those for CS_2 and H_2S.

B. ΔG_f° is negative for roasting of sulphide ore to oxide.

C. Roasting of the sulphide to its oxide is thermodynamically feasible.

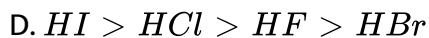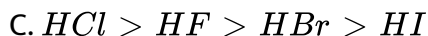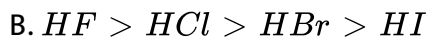D. Carbon and hydrogen are suitable reducing agents for metal sulphides.
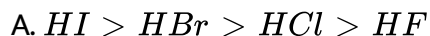
Answer: D

2. Match the following :

(i) Tetragens	(a) Oxygen
(ii) Icosagens	(b) Carbon
(iii) Chalcogens	(c) Nitrogen
(iv) Pnictogens	(d) Boron

3. The correct order of the thermal stability of hydrogen halide is

A. $HI > HBr > HCl > HF$

B. $HF > HCl > HBr > HI$

C. $HCl > HF > HBr > HI$

D. $HI > HCl > HF > HBr$

Answer: B

4. MnO_4^- react with Br in alkaline pH to give ....

A. BrO_3^-, MnO_2

B. Br_2, MnO_4^{2-}

C. Br_2. MnO_2

D. BrO^-, MnO_4^{2-}
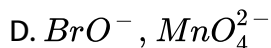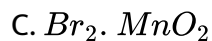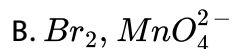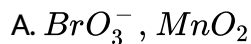
Answer: A

5. Which one of the following geometry is possessed by $[CuCl_2]^-$ and $[Ag(CN)_2]$?

A. Trigonal planar

B. Linear

C. Tetrahedral

D. Square planar

Answer: B

> ▶ View Text Solution

6. The fraction of total volume occupied by the atoms in a simple cubic is

A. $\left(\dfrac{\pi}{4\sqrt{2}} \right)$

B. $\left(\dfrac{\pi}{6} \right)$

C. $\left(\dfrac{\pi}{4} \right)$

D. $\left(\dfrac{\pi}{3\sqrt{2}} \right)$

Answer: B

> ▶ Watch Video Solution

7. Assertion : rate of reaction doubles when the concentration of the reactant is doubles if it is a first order reaction.

Reason : rate constant also doubles

A. if both assertion and reason are true and reason is the correct explanation of assertion

B. if both assertion and reason are true but reason is not the correct explanation of assertion

C. assertion is true but reason is false

D. both assertion and reason are false

Answer: C

▶ **Watch Video Solution**

8. By adding a strong acid to the buffer solution, the pH of the buffer solution ....

A. remains constant

B. increases

C. decreases

D. becomes zero

Answer: A

▶ **View Text Solution**

---

9. Consider the change in oxidation state of Bromine corresponding to different emf values as shown in the diagram below:

$$BrO_4^- \xrightarrow{1.82V} BrO_3^- \xrightarrow{1.5V} HBrO \xrightarrow{1.595V} Br_2 \xrightarrow{1.0652V} Br^-$$

Then the species undergoing disproportional is

A. Br_2

B. BrO_4^-

C. BrO_3^-

D. $HBrO$

Answer: D

10. Collodion is a 4% solution of which one of the following compounds in alcohol – ether mixture?

    A. Nitroglycerine

    B. Cellulose acetate

    C. Glycoldinitrate

    D. Nitrocellulose

Answer: D

11. In the reaction sequence, $\text{Ethane} \xrightarrow{\text{HOCl}} A \xrightarrow{x} \text{ethane} - 1, 2 - diol$. A and X respectively are

A. Chloroethane and NaOH

B. ethanol and H_2SO_4

C. 2 - chloroethan -1- ol and $NaHCO_3$

D. ethanol and H_2O

Answer: C

12. Assertion (A) : Benzoic acid does not undergo friedel crafts reaction.

Reason (R): This is due to the strong deactivating nature of the carboxyl group

A. Both A and are correct and R is the correct explanation of A.

B. Both A and are correct and R is not the correct explanation of A.

C. A is correct but R is wrong

D. A is wrong but R is correct

Answer: A

---

13. The relative basicity of amino follows the order as ....

A.

$Alkyl\ amines > Aralkyl\ amines > Ammonia > N\text{-}aralkylamine >$

B.

$Aralkyl\ amines > Ammonia > Arylamine > Alkyl\ amine > N\text{-}ara$

C.

$Arylamine < Alkyl\ amines > Alkyl\ amine < Ammonia > N\text{-}aralky$

D.

$N\text{-}aralkylamine < Arylamine < Ammonia < Alkyl\ amine < Aralk$

Answer: A

14. Complete hydrolysis of cellulose gives

    A. L - Glucose

    B. D - Fructose

    C. D - Ribose

    D. D - Glucose

Answer: D

▶ **Watch Video Solution**

15. Which mechanism is followed in the synthesis of polystrene?

    A. free radical polymerisation

    B. cationic polymerisation

    C. Anionic polymerisation

    D. SN^1 mechanism

Answer: A

1. How will you manage sulphur dioxide produced during roasting process?

2. Write a short note on hydroboration.

3. What are actinide ? Give three example .

4. The rate of formation of a dimer in a second order reaction is $7.5 \times 10^{-3} \text{mol L}^{-1} s^{-1}$ at 0.05mol L^{-1} monomer concentration. Calculate the rate constant.

▶ Watch Video Solution

5. Calculate the pH of 1.5×10^{-3} M solution of $Ba(OH)_2$.

▶ Watch Video Solution

6. Peptising agent is added to convert precipitate into colloidal solution. Explain with an example.

▶ Watch Video Solution

7. How is chlorine react with Benzaldehyde?

(i) In the presence of catalyst (ii) in the absence of catalyst

8. Why carbohydrates are generally optically active?

9. How would you prepare Nylon -2- Nylon -6- polymers?

Part Iii

1. How will you convert, boric acid into (i) Boron trifluoride (ii) Borax

2. Complete the following reaction.

$$XeOF_4 + SiO_2 \rightarrow A + SiF_4$$

(ii) $A + SiO_2 \rightarrow B + SiF_4$
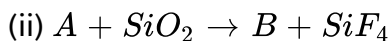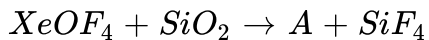
3. Give the difference between double salts and coordination compounds.

4. If NaCl is doped with 10^{-2} mol percentage of strontium chloride , what is the concentration of cation vacancy ?

5. Describe the graphical representation of first order reaction.

1. (a) (i) Explain the following terms with suitable examples. (i) Gangue (ii) Slag

(ii) Write the applications of copper.

▶ Watch Video Solution

2. (b) (i) Write the molecular formula and structural formula for the following molecules.

(a) Nitric acid (b) dinitrogen pentoxide (c) phosphoric acid

(ii) What happen when copper sulphate reacts with ammonia?

▶ Watch Video Solution

3. (a) (i) What are the factors which influence the adsorption of a gas on a solid?

(ii) Write a note on electro osmosis.

4. (b) (i) Identify the product(s) is/are formed when 1 - methoxy propane is heated with excess HI. Name the mechanism involved in the reaction

(ii) Explain Reimer Tiemann reaction.

5. (b) Explain free radical polymerisation with example.