

SAMPLE PAPER-2013
CLASS-XII
Subject:- CHEMISTRY

TIME-3HRS

M.M-70

INSTRUCTIONS-

1. Q.-1 TO 8, CARRY ONE MARK,
2. Q- 9 TO 18 CARRY TWO MARKS.
3. Q- 19 TO 27 CARRY THREE MARKS.
4. Q- 28 TO 30 CARRY FIVE MARKS

1. Define Reverse Osmosis and its one application?
2. What is the coagulation process?
3. What is the role of NaCN in the extraction of silver from a silver ore.
4. Give an example of coordination isomer.
5. Write IUPAC name of $\text{CH}_3\text{-C}(\text{CH}_3)=\text{C}(\text{Br})\text{-CH}_2\text{OH}$
6. Draw structure of 4-tert.butyl-3-iodoheptane
7. Why Primary amines have higher boiling point than tertiary amines ?
8. Describe the Primary structure of protein?
9. Aluminium has cubic close pack structure. Its metallic radius is 125 pm. What is the length of the side of unit cell ?
10. How are the density and conductivity of crystals affected by Schottky defect and Frenkel Defect.?
11. 45 gm ethylene Glycol ($\text{C}_2\text{H}_6\text{O}_2$) is mixed with 600 gm of water. Calculate the freezing point depression and freezing point of the solution. $K_f = 1.86 \text{ K Kg Mole}^{-1}$
12. Find boiling point of solution containing 0.52 g of glucose dissolved in 80.2 g water. $K_b = 0.52 \text{ kkg/m}$.
13. The rate constant for a first order reaction is 60 sec^{-1} . How much time will it take to reduce the initial concentrations of the reactant to its 1/16 th value?
14. How Zn is extracted from Zinc blende. Write reactions of extraction?
15. (a) Bond angle in PH_4^+ is higher than in PH_3 , Why?
(b) Why higher concentration of O_3 are explosives?
16. Explain (i) Crystal field splitting in an octahedral field (ii) Denticity of a ligand.

17. How would convert ethanol to ethene ? Write mechanism?
- 18.(i) Why C-X bond in haloarene is shorter and stronger?
(ii) What are ambident nucleophiles
19. A reaction is of first order in reactant A and second order in reactant B. How is the rate of this reaction affected, when
(i) concentration of B is increased three times
(ii) Concentration of A and B is doubled.?
20. Write three special features of chemisorption which are not found in physisorption?
21. Assign reason- (i) Sulphur vapour is paramagnetic .
(ii) SF_6 is much less reactive than SF_4
(iii) Of the noble gases only xenon is known to form well established compounds.
22. Explain (i) Fluorine does not exhibit any positive oxidation states.
(ii) NO_2 dimerise to form N_2O_4 .?
(iii) OF_6 is not known .
23. Name the reagents used in conversion of (i) A primary alcohol to an aldehyde
(ii) Butan-2-one to Butan-2-ol (iii) Phenol to 2,4,6-tribromophenol
24. Complete the following- (i) $\text{C}_6\text{H}_5\text{N}_2\text{Cl} + \text{C}_6\text{H}_5\text{NH}_2 \rightarrow \dots$
(ii) $\text{C}_6\text{H}_5\text{N}_2\text{Cl} + \text{CH}_3\text{CH}_2\text{OH} \rightarrow \dots$ (iii) $\text{R-NH}_2 + \text{CHCl}_3 + \text{KOH} \rightarrow \dots$
25. What are the essential and non-essential amino acids in human food? Give one example of each type.?
26. Identify the four groups into which the polymers are classified on the basis of the magnitude of intermolecular forces present in them .To which group do polythene and bakelite belong ?
27. Explain- (i) Antibiotics (ii) Antiseptic (iii) Analgesics
- 28.(a) State Henry's law about the gas phase pressure and solubility of a gas in a solvent and mention two of its applications
(b) A copper –silver cell is set up. The copper ion concentration in it is 0.10 M . The concentration of silver ion is not known. The cell potential measured is 0.422 V.

determine the concentration of silver ion in the cell. $E^0_{\text{Cu}^{2+}/\text{Cu}} = 0.34 \text{ V}$ and $E^0_{\text{Ag}^+/\text{Ag}} = 0.80 \text{ V}$

29. (a) Complete the following (i) $\text{MnO}_4^- (\text{aq}) + \text{C}_2\text{O}_4^{2-} + \text{H}^+ \rightarrow \dots\dots\dots$

(ii) $\text{Cu}^{++} + \text{I}^- \rightarrow \dots\dots\dots$

(b) Explain about transition and inner transition elements-

(i) There is in general increase in density of elements from Ti to Cu .

(ii) There occurs much more frequent metal –metal bonding in compounds of heavy transition elements in 3d- series.

(iii) The members in the actinoid series exhibit large number of oxidation states than the lanthanoids

30. (a) How would you account

(i) Aldehydes are more reactive than ketones towards nucleophiles.

(ii) The boiling points of aldehydes are lower than that of the corresponding acids.

(iii) The aldehydes and ketones undergo a number of addition reactions

(b) Give chemical test to distinguish (i) Acetaldehydes and Benzaldehydes

(ii) Propanone and propanal