

#### SAMPLE PAPER - 2014 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  $CH_3$   $C(CH_3) = C(Br) CH_2OH$
- 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 are affected by Schottky defect and Frenkel Defect.?
- 11. 45 gm ethylene Glycol ( $C_2H_6O_2$ ) is mixed with 600 gm of water. Calculate the freezing point depression and freezing point of the solution. Kf = 1.86 K Kg Mole<sup>-1</sup>
- 12. Find boiling point of solution containing 0.52 g of glucose dissolved in 80.2 g water. Kb=0.52kkg/m.
- 13. The rate constant for a first order reaction is 60 sec<sup>-1</sup>. 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<sub>4</sub><sup>+</sup> is higher than in PH<sub>3</sub>, Why?
  - (b) Why higher concentration of  $O_3$  are explosives?
- 16. Explain (i) Crystal field splitting in an octahedral field (ii)Denticty of a ligand.
- 17. How would convert ethanol to ethene? Write mechanism?

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- 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<sub>6</sub> is much less reactive than SF<sub>4</sub>
  - (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) $C_6H_5N_2Cl + C_6H_5NH_2 \rightarrow ...$ 
  - (ii)  $C_6H_5N_2Cl + CH_3CH_2OH \rightarrow .....$  (iii)  $R-NH_2 + CHCl_3 + KOH$
  - →.....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.  $E^0_{Cu}^{2+}_{/Cu} = 0.34 \text{ V}$  and  $E^0_{Ag+/Ag} = 0.80 \text{ V}$



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- 29. (a)Complete the following (i)  $MnO_4^-$  (aq) +  $C_2O_4^{-2}$  +  $H^+ \rightarrow \dots$ 
  - .(ii)  $Cu^{++} + I^{-1} \rightarrow \dots$
  - (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 ketones 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

### Prepared by

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