Answer any 4 questions from 1 to 5 . Each carries 1 score.

1. Coordination number of Ag in $[Ag(NH_3)_2]Cl$ is----------

2.Two solutions having same osmotic pressure at a given temperature are called
a)Hypertonic   b)Hypotonic   c)Ideal solution   d)Isotonic

3.Electrolyte in lead storage battery is----------------

4.EDTA is a   --------------------   dentate ligand.

5.Common oxidation state of lanthanoids is s --------------------
a)+3   b)+2   c)+1   d)+4

Answer any 8 questions from 6 to 15. Each carries 2 scores.
6.a) $Ni_{(S)} + 2Ag(aq)$ ------▶ $Ni^{2+}_{(aq)} + 2Ag_{(s)}$ (1)
      Write the cell representation of the above cell reaction.
   b)What will be the Nernst equation for the above reaction   .(1)

7.a)State Kohlrausch's law.   (1)
   b)Calculate the limiting molar conductivity of CH_3COOH. Λ_0m for CH3COONa , Hcl
      and NaOH are 91.0 , 425.9 and 126.4 S Cm^2mol^{-1} respectively   (1)
.

8.Write the factors which influence the rate of a chemical reaction.

9.Write the IUPAC name of
   a)$[Co(NH_3)_4(H_2O)_2]Cl_3$ b)$[Co(en)_3]Cl_3$

10.What is aspirin? How is it prepared from salicylic acid ?

11.How will you distinguish between 1^0, 2^0, 3^0 alcohols?

12.Which is more reactive aldehydes ketones. Explain.

13.Explain a)HVZ reaction   b) Rosenmund reduction
14.Identify the product
a)$C_6H_5NO_2$ Fe/HCl
                            ────────────▶

b)CH_3CN $SnCl_2/Hl$
                      ────────────▶
                        H_3O^+
15.Vitamin C must be supplied through the diet regularly. Why ?

Answer any 8 questions from 16 to 26 . Each carries 3 scores.

16a).Define colligative properties.   (1)

b)200 cm^3 of an aqueous solution of a protein contains 1.26 g of the protein. The osmotic pressure of such asolution at 300K is found to be 2.57x10^{-3} bar. Calculate the molar mass of the protein. (2)

17.a) Write the integrated rate equation for first order reaction. (1)
   b)75% of a first order reaction is completed in 32 minutes.At what time 50% of the reaction will be completed. (2)

18.a)What is the order of the reaction
   i)K = 5.5 x 10^{-14} S^{-1} ii)0.693 mol L^{-1} S^{-1} (1)
b)What are the differences between order and molecularity? (2)

19.What is lanthanoid contraction? Give its consequences.

20.Explain the method of preparationof K$_2$Cr$_2$O$_7$.

21.Explain the hybridisation , geometry and magnetic behaviour of [Ni(CO)$_4$].

22.a)Write the chemical equation of Wurtz fitting reaction and Fitting reaction. (2)
   b)Identify the major product obtained by the reaction between 2-Brompentane and alcoholic KOH. (1)

23.Explain Aldol condensation and Cannizzaro reaction.

24.How will you distinguish
  a)Acetaldehyde and acetone
  b)Acetaldehyde and benzaldehyde
  c)2-pentanone and 3- pentanone

25.What is Hinsberg reagent? How will you distinguish 1^0 , 2^0,3^0 amime using it?

26.a)Explain one method of preparation of glucose. (2)
   b)Show pyranose structure of glucose. (1)
Answer any 4 questions from 27 to 31. Each carries 4 scores.
27.Explain
  i)Osmosis
  ii)Osmotic pressure
  iii)van't Hoff factor
  iv)Reverse osmosis

28.a)Define fuel cell. (1)
   b)Write the overall reaction for it. (1)
   c)Write any two advantages of a fuel cell. (2)

29.a)Explain with the help of a diagram crystal field splitting in octahedral complex. (2)
   b)Draw the geometrical isomers of [Pt(NH3)$_2$Cl$_2$] (2)

30.a)Write the differences between SN$_1$ and SN$_2$ reaction. (2)
   b)Convert aniline to iodobenzene. (2)

31.a)Write any two electrophilic substituition reactions of anisole. (2)
   b)Explain Reimer -Tiemann reaction. (2)

Prepared by

1.T R DINESH , VHSS POREDOM 9447905884
2.SIJU P G ,SNHSS CHITHARA 9947349548
3.SAJI JOHN , ST STEPHENS HSS PATHANAPURAM 9495267708
4.CINU O BABY , ST GORETH HSS PUNALUR 9400270138
5.SHYMA RAJ M S , NGPM HSS VENCHEMPU9745405038
6.Dr.ANITHA L , GHSS OTTAKKAL 7012640450
7.SINCY BENZIGER , GHSS OTTAKKAL 9895722543
8.T MANJU , ST STEPHEN HSS 9447681642
9.ANEESHA M S , GVHSS ANCHAL EAST 9495116487
10.JASMINE S , GHSS KULATHUPUZHA 9446593701