Second year higher secondary examination March

Part III

CHEMISTRY

Maximum Score: 60

Time 2hrs

Answer any four questions from 1to 5. Each carries 1 score score (4x1=4)

1. ……is a colligative property
   a. Osmotic pressure b.Heat capacity d.Refractive index d. surface tension

2.Common oxidation state of lanthanoids is ……

3. ……is an ambidentate ligand

a).CN^- b.)Cl^- c.)OH^- d)H_2O

4.Chlorofluro Carbon compounds are called ……

5.Lucas Reagent is ……..

Answer any 8 questions from 6 to 15Each carries 2 scores . (8x2=16)

6.State Kohlrauschs law.

7.Write any two differences between order and molecularity

8.The outer orbital elecrtronic configuration Ni^{+2} is $3d^8$ Calculate its magnetic moment.

9.Write IUPAC name of the following compound a) $K_4[Fe(CN)_6]$ b)$[Co(NH_3)_6]Cl_3$

10. How will you prepare phenol industrially?

11. Explain Williamson synthesis of ether with an example

12.CH_3-CH=$CH_2 \frac{O3}{Zn} /H2O$ →A+B

13.How will you prepare benzaldehyde by a) Rosenmunds Reduction b)Gatterman Koch reaction

14.R-NH_2 + $CHCl_3$ $alcoholic\ KOH$ → A Name the reaction.

15.What are reducing and non reducing sugars?

Answer any 8 questions from 16 to 26 Each carries 3 scores (8x3=24)

16.State Henrys law .Write any two applications.

17.What is corrosion? Write any two methods to prevent corrosion.

18When temperature of a reaction changes from 300K to310 K rate constant of a reaction doubles. Calculate activation energy ($R=8.314JK^{-1}mol^{-1}$

19.Write any three characteristics of d-block elements

20.Write the postulates of Werners co-ordination theory

21.Write any three differences between SN^1 and SN^2 reactions.

22.a) complete the following reaction.

CH^3Cl + 2Na $dry\ ether$ → ?

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b) Name and explain the above reaction.

23. complete the ractions .

a) C_6H_5OH+ Br_2water ⟶ ?

b) C_6H_5 OH +dil.HNO_3 ⟶ ?

c)C_6H_5 OH + Zn ⟶ ?

24.Explain Cannizarro reaction Write the equation.

25.What is Hinsberg reagent? How it is used to distinguish 1^0 , 2^0 and 3^0 amines.

26. what are monosaccharides,Disacharides and polysaccharides ?write example for each

Answer any 4 questions from 27 to 31 each carries 4 scores (4x4=16)

27.write four types of structural isomerism of coordination compounds with example.

28.a)What are ideal and non ideal solutions ? (1)

b) explain positive and negative deviation with example and diagram (3)

29.a)what is halflife period of a reaction (1)

b)Give equation for halflife period of first order and second order reaction (2)

c) Rate constant of first order reaction is 6340$years^{-1}$ Calculate its half life. (1)

30.a)explain fuel cell reaction with an example (2)

b)Give cell reaction (1)

c)Write its advantages (1)

31.a) Complete the following

2HCHO + conc KOH ⟶ A + B (2)

b)Explain how can you distinguish methanol(formaldehyde) and ethanol(acwtaldehyde) (2)