Sample Question Paper

Subject- Chemistry

Class-12

Time : 3 hours 15 minutes

marks: 70

Note: The first 15 minutes are allotted to the examinees to read the question paper.

instruction-:

1-All questions are compulsory. The prescribed marks of each question are given in front of him.

2. Give all the calculation terms in the calculation questions.

3. Write the relevant answers to the questions.

4. Give chemical equations where necessary.

Question 1: In each section of this question, four options are given, choose the correct option and select it.

Write in the answer sheet.

(A) If a protein is contained in a 200 cm aqueous solution of 1. 26 Proteins and this solution at 300K

Osmotic pressure of 2. If the molar mass of the protein is 57x10 bar, then the molar mass of the protein is: 1

(i)61. 022 $gmol^{-1}$

(ii)6. 1022 $gmol^{-1}$

(iii)610. 22 $gmol^{-1}$

(iv)61. 22 $gmol^{-1}$

(b)In the basic state of transition elements, which of the d electron configurations given below Oxidation

Will the stage be permanent? 1

(i) $3d^3$

(ii) $3d^5$

(iii) $3d^8$

(iv) $3d^4$

(c)How many ions will be produced in the solution from the complex [Co(NH3)]Cl2? 1

(i) 6

(ii)4

(iii)3

(iv)2

(d)The boiling points of the following compounds are in increasing order: 1

$CH_3CH_2CH_2CHO$, $CH_3CH_2CH_2CH_2OH$, $H_5C_2OC_2H_5$, $CH_3CH_2CH_2CH_3$

(i) $CH_3CH_2CH_2CHO < CH_3CH_2CH_2CH_2OH < H_5C_2OC_2H_5 < CH_3CH_2CH_2CH_3$

(ii)$CH_3CH_2CH_2CHO < H_5C_2OC_2H_5 < CH_3CH_2CH_2CH_2OH < CH_3CH_2CH_2CH_3$

(iii)$CH_3CH_2CH_2CH_3 < CH_3CH_2CH_2CH_2OH < H_5C_2OC_2H_5 < CH_3CH_2CH_2CHO$

(iv)$CH_3CH_2CH_2CH_3 < H_5C_2OC_2H_5 < CH_3CH_2CH_2CHO < CH_3CH_2CH_2CH_2OH$

(e)By gabrial thalimide synthesis It is formed. 1

(i) Primary aromatic amines

(ii) Primary aliphatic amine.

(iii) Secondary amines

(iv) Tertiary amines

(f) Maltose is made up of 1

(i) Two molecules from glucose

(ii) Two molecules from fructose

(iii) Glucose and fructose

(iv) None of these.

Q 2 (a) Explain the want hof factor. How is it related to molecular properties? 1+1=2

(b)What are Interstitial Compounds? These types of compounds are well suited for transition metals. Why is it known? 1+1=2

(c) What is the spectral chemical series? 2

(d) How do you make the following changes? 1+1=2

(i) Chloroethane to butane

(ii) Aniline to chlorobenzene.

3-(a) 45g Ethylene glycol (C2H6O2) mixed with 600g water. (a) Freezing point of the solution Calculate the depression and (b) freezing point. 1+1=2

(b) Name the reagents used in the following reactions: 1+1=2

(i) Oxidation of primary alcohol into carboxylic acid.

(ii) Dehydration of Propane-2 OL to propene.

(c) Differentiate between the following: 1+1=2

(i) Acetaldehyde and acetone

(i) Acetophenone and Benzophenone

(d)Draw the structure of the four bases present in DNA. 2

4. (a) Why is it not possible to obtain pure ethanol by distillation?

These are given which generally show deviations from Raoult's law and whose components are

Can't be separated by distillation? How many types of mixtures are there? 1+1+1=3

(b)Define the conductivity and molar conductivity of a solution of an electrolyte. concentration

Discuss their changes 2+1=3

(c)A reaction is of the first order towards A and second to B. 1+1+1=3

(i)Write the differential velocity equation.

(ii) What will be the effect on velocity by tripling the concentration of B?

(iii) What will be the effect on velocity by doubling the concentration of both A and B?

(d) Write the reasons for the following: 1+1 + 1 = 3

(i) Cr"2 is a strong reducing agent whereas manganese

(ii) The d1 configuration of ions is extremely unstable.

(III) is a strong oxidizing agent.

5- (a) What is the advantage of fuel cells over primary and secondary batteries? Discharges occur

Write the reaction that takes place in the time lead accumulator cell. When the battery is discharged, the power How is the density of the decomposer affected? 2+1+1=4

(b)(i) The rate constant for a first-order reaction is 6051. The reaction has its initials. How long will it take to drop 1/16th of the concentration? 2

(ii) A first order reaction takes 40 minutes to get 30% dissociation. Calculate . 2

(c)(i) Write equations for two similar chemical properties of glucose and fructose. 2

(ii) Why are vitamins A and C important for us? Write down their important sources. 2

(d)(i) What do you mean by bidentur and amphoteric ligands? 2

(ii) What is meant by chelate effect? 2

6 (a) What happens when- 1+1+1+1+1=5

(i) Methyl chloride reacts with KCN.

(ii) Ethyl chloride reacts with aqueous KOH.

(iii) Bromobenzene reacts with magnesium in the presence of dry ether.

(iv) n-butyl chloride is reacted with alcoholic KOH.

(v) Hydrolysis of chlorobenzene.

Or

Write the structure of the main organic product formed in each of the following reactions: 1+1+1+1+1=5

(i) $CH_3CH_2CH_2Cl$ +NaI ----------→

(ii) C_6H_5ONa +C_2H_5 Cl ----------→

(iii) $CH_3CH_2CH_2OH$ +$SOCl_2$ ----------→

(iv) CH_3CH_2CH = CH2 +HBr ----------→

(v) CH_3CH =$C(CH_3)_2$ +HBr ----------→

(b) Write the following with examples: 2+2+1=5

(i) Kolbe reaction

(ii) Rhymer Tiemann reaction

(iii) Williamson ether synthesis

Or

Give equations for the following reactions: 2+2+1=5

(i) Reaction of dilute HNO_3 with phenol

(ii) Reaction of Bromine with Phenol in CS_2

(iii) Oxidation of Propane-1-ol to alkaline KMnO4

7-(a) Carry out the following transformations in a maximum of two steps: 1+1+1+1+1=5

(i) Bromobenzene to 1-phenylethanol.

(ii) Benzaldehyde to 3- Phenylpropane-1-ol

(iii) Ethanol to 3- Hydroxybutanel

(iv) Benzaldehyde to benzoic acid.

(v) Propanone to Propane

Or

Prepare the structure of the following compounds: 1+1+1+1+1=5

(i) 4- Chloropentane 2-on

(i) p,p' dihydroxybenzophenone

(iii) Hex-2-an- 4-oic acid

(iv) 3-Methylbutanyl

(v) P methylbenzaldehyde

(b) State the reasons for the following: 2+2+1=5

(i) Ethylamine is soluble in water whereas aniline is not.

(ii) Aniline does not exhibit Friedel Kraft reaction.

(iii) Diazonium salts of aromatic amines are more stable than the salts derived from aliphatic aminos.

It is.

Or

(i) Write the structure of different isomeric amines derived from the molecular formula C4H11N. Who by different pairs

What is the isomerism of the type displayed? 3+2=5

(ii) Write the chemical equation of the reaction of ethaneolic NH3 with C_2H_5Cl.