CLASS XII
SAMPLE PAPER
CHEMISTRY

Time:2hrs

Q1. The following data were obtained at 303 K for the reaction:

$2A+B \longrightarrow C+D$

Exp No.	[A] mol L^{-1}	[B] mol L^{-1}	Rate of formation of (mol L^{-1}min^{-1})
1.	0.1	0.1	6 x 10^{-3}
2.	0.2	0.2	7.2 x 10^{-2}
3.	0.3	0.4	2.88x 10^{-1}
4.	0.4	0.1	2.4 x 10^{-2}

Calculate the rate of formation of D, when [A] = 0.5 mol l^{-1},   [B] = 0.2mol l^{-1} .

Q2. Ramesh went to Cinema theatre driving his car under foggy weather

and met with an accident due to unbalanced driving with hindered

beam of light.

a) Define Tyndall effect.

b) Which type of colloid is the fog?

c) Mention the value associated with the above situation

Q3. How is Freundlich adsorption isotherm be represented when the value of n is less than one ?

 Q4. Out of C and CO , which is better reducing agent at 673 K ?

Q5 Classify the following as being either a p-type or n-type semiconductor

(1)Ge dopped in In (2)Bdopped in Si

Q6Why glass considered a super cooled liquid?

Q7Analysis show that nickel oxide has formula$Ni_{0.98}O_{1.00}$What fraction of nickel exit as Ni^{2+} and Ni^{3+} ions?

Q8Define the following : F-center,ferromagnetism

Q9What is the effect of presence of Schotty defects on the density of crystal?

Q10Niobium crystallize in body centered cubic structure .if density is 8.55gcm^{-3}Cal atomic radius of niobium its atomic mass is 93u?

Q11Calculate the mass percentage of asprin $C_9H_8O_4$ in acetonitrile CH_3CN when 6.5g of asprin is dissociate in 450g of acetonitrile?

Q12Define formality,molarity,mole fraction?

Q13Define Henery Law with its two application?

Q15State the condition resulting in reverse osmosis?

Q16 . Out line the principles of refining of metals by following method:

a)   Zone refining
     Chromatographic method.

Q18 2 gms of Benzoic acid (C_6H_5COOH) dissolved in 25 gms of Benzene shows a depression in freezing point equal to 1.62K. Molal depression constant for Benzene is 4.9 k.kg/mol. What is the percentage Of association of the solution if it forms dimmer in solution.

Q19 Two element A and B form compound having molecular formula$AB_2$and AB_4.When dissolve in 20g of benzene ,1g of AB_2 lower the freezing point by 2.3K ,whereas 1.0g of AB_4lower it by 1.3k .The molar depression constant for benzene is 5.1Kkgmol^{-1}.Cal atomoc mass of A and B?

Q20 Explain elevation in boiling point of asolution with a help of vapour pressure temperature diagram.How you can determine the molecular mass of of solute from it?

Q21

The following data were obtained during the first order thermal decomposition of SO_2Cl_2 at a constant volume.

$$SO_2Cl_2(g) \rightarrow SO_2(g) + Cl_2(g)$$
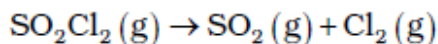
Experiment	Time/s^{-1}	Total pressure/atm
1	0	0.5
2	100	0.6

Calculate the rate of the reaction when total pressure is 0.65 atm. **3**

Q22 Explain the following observations:

i) A beam of light passing through a colloidal solution has a visible path.

ii) Passing an electric current through a colloidal solution removes colloidal

sulphate.

iii) Ferric hydroxide sol coagulates on addition of a solution of potassiumsulphate .

Q23 Define the following PSEUDO chemical reaction and molecularity of the reaction?2

Q24 what is the limitation of FREUNDLICH ADSORPTION isotherm?1

Q25 The rate of chemical reaction double for an increase of 10K in absolute temperature from298K Cal E_a? **3**

Q26 Define and molar conductivity for solution of an electrolyte. Discuss their variation with concentration?

Q27 Explain how rusting of iron is envisaged as setting up of an electrochemical cell?

Q28 Define primary battery and sec battery ?

Q29 Show that first order reaction is independent of its intial conc.?

Q30 how you can preapare the colloids by chemical method?

Q31 Why adsorption is always exothermic?

Q32 explain the following with example: electrophoresis,tyndal effect,

Q33 Explain the role of cryolite in metallurgy of aluminium?

Q34 Copper can be extracted by hydrometallurgy but not zinc .Explain?

Q **35 Conductivity of 0.00241 M acetic acid is 7.896 X 10^{-5} S cm² mol^{-1}. Calculate the molar conductivity and if Λ^∞ for acetic acid is 390.5 S cm² mol^{-1}. What is its dissociation constant?**

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Q36. Explain the leaching of alumina from bauxite with the help of equations.

Q36-Define the following :

(i) Molecularity   (ii) Elementry reaction

OR

Define the following :

(i) Energy of activation.   (ii) Complex reaction.

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ALL THE BEST

ANIL KR SHARMA

PGT CHEMISTRY

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