

DELHI PUBLIC SCHOOL, JAMMU

ASSIGNMENT FOR HALF YEARLY (SESSION 2017-2018)

CLASS- XII SUBJECT-CHEMISTRY

Q1 Give the significance of lattice point.

Q2 Define Henry's law.

Q3 What will be the effect of temp. on rate constant on rate constant?

Q4 Why does physisorption decrease with increase of temperature?

Q5 Using IUPAC norms write the systematic names of the following:

a) $[\text{Co}(\text{NH}_3)_6]\text{Cl}_3$, b) $[\text{NiCl}_4]^{2-}$

Q6 How will you distinguish between the following pairs of terms:

a) hexagonal close packing and cubic close packing

b) tetrahedral and octahedral void?

Q7 Why do gases always tend to be less soluble in liquids as the temp is raised?

Q8 Write the products for each of the following reaction

a) $\text{CH}_3\text{CH}_2\text{CH}_2\text{Br} + \text{CH}_3\text{O}^- \rightarrow$

b) $\text{CH}_3\text{CH}_2\text{CH}=\text{CH}_2 + \text{HBr} \rightarrow$

Q9 Explain why propanal has higher boiling point than that of the hydrocarbon, butane?

Q10 What is the role of depressant in froth flotation process?

Q11 What is meant by positive and negative deviation from Raoult's law and how is the sign of $\Delta_{\text{mix}}H$ related to positive and negative deviation from Raoult's law?

Q12 Ferric oxide crystallizes in a hexagonal close packed array of oxide ions with two out of every three octahedral occupied by ferric ions. Derive the formula of the ferric oxide.

Q13 How much electricity in terms of faraday is required to produce

a) 20.0g of Ca from molten CaCl_2

b) 40.0g of Al from molten Al_2O_3 ?

Q14 Show that in a 1ST Order reaction, time required for completion of 99.9% is 10 times of half life($t_{1/2}$) of the reaction.

Q15 The decomposition of NH_3 on platinum surface is zero order reaction. What are the rates of production of N_2 and H_2 if $K=2.5 \times 10^{-4} \text{ Mol}^{-1} \text{ Lsec}^{-1}$?

Q16 What is an adsorption isotherm? Describe Freundlich adsorption .

Q17 $[\text{Fe}(\text{CN})_6]^{4-}$ and $[\text{Fe}(\text{H}_2\text{O})_6]^{2+}$ are of different colours in dilute solutions. why?

Q18 $[\text{Cr}(\text{NH}_3)_3]^{3+}$ is paramagnetic while $[\text{Ni}(\text{CN})_4]^{2-}$ Is diamagnetic. Explain why?

Q19 Outline the principles of refining of metals by the following methods:

a) zone refining

b) electrolytic refining

c) vapour phase refining.

Q20 Explain why

a) the dipole moment of chlorobenzene is lower than that of cyclohexyl chloride,

b) alkyl halides, though polar, are immiscible with water

c) Grignard reagents should be prepared under anhydrous conditions?

Q21 Explain the following reactions with eg.

a) Kolbes reaction b) Reimer tiemann reaction c) Williamsons ether synthesis.

Q22 Oxidation of ketones involves carbon-carbon bond cleavage. Name the products formed on oxidation of 2,5-dimethylhexan-3-one.

Q23 Give industrial application of haloarenes.

Q24 Accomplish the following conversions

a) Nitrobenzene to benzoic acid

b) Benzoic acid to aniline

c) Chlorobenzene to p-chloroaniline

d) Benzyl Chloride to 2- phenylethanamine

e) Aniline to p-bromoaniline

Q25 An aromatic compound A on treatment with ammonia and heating forms compound B which on heating with Br_2 with KOH forms a compound c of molecular formula $\text{C}_6\text{H}_7\text{N}$. Write the structures of IUPAC names of compounds A, B, C.

TOPICS-

1 THE SOLID STATE

2 SOLUTIONS

3 ELECTROCHEMISTRY

4 CHEMICAL KINETICS

5 SURFACE CHEMISTRY

6 GENERAL PRINCIPLES AND PROCESSES OF ISOLATION OF ELEMENTS

7 COORDINATION CHEMISTRY

8 HALOALKANES AND HALOARENES

9 ALCOHOLS, PHENOLS AND ETHER

10 ALDEHYDES, KETONES AND CARBOXYLIC ACID

11 AMINES