BRAIN INTERNATIONAL SCHOOL

SESSION 2024-25

CLASS: XII **TERM 1 REVISION SHEET** **SUBJECT: CHEMISTRY**

CH.1- SOLUTIONS

Assertion and Reason:

Q1.Assertion: Mixture of chloroform and acetone shows negatve deviation.

Reason: Between these two components H- bonding take place.

Q2.Assertion: 'I' factor for ethanoic acid becomes ½ in solution of benzene.

Reason: Ethanoic acid associate in if dissolve in benzene .

Q3. In a solution observed molar mass is greater than calculated what idea you get about molecular status in the solution.

Q4. Which type of compounds form ideal solutions ?

Q5. What will happen to the boiling point of the solution formed on mixing two miscible liquids showing negative deviation from Raoul's law?

Q6. Liquid 'Y' has higher vapors pressure than liquid 'X', which of them will have higher boiling point?

Q7. When 50 mL of ethanol and 50 mL of water are mixed, predict whether the volume of the solution is equal to, greater than or less than 100 ml. Justify

CH.2- ELECTROCHEMISTRY

Multiple choice questions:

Q1. During electrolysis of NaCl some water is added,

(a)Sodium will depost at cathode (b) Hydrogen gas is evolve at cathode

(c) NaOH will form (d)O_2 gas evolve at anode

Q2.Standard hydrogen electrode has zero electrode potential because

(a)Hydrogen is easier to oxidize (b)Electrode potential assumed tobe zero

(c) Hydrogen atom has one electron (d)Hydrogen is lighest element

Q6. Lead storage battery is

(i) Primary cell (ii) secondary cell

(iii) fuel cell (iv) Zn-Cd battery

Q7. Rate of rusting increase in the presence of

(i) Salty water (ii) Other metal

(iii) Moisture (iv) All

Q8. Why potential of nickel-cadmium battery remain constant whole life?

Q9. What is relation of Gibb's free energy and equilibrium constant?

Q10. Among aluminum sulphate and sodium chloride solution which will show higher molar conductivity ant infinite dilution?

CH.3 Chemical Kinetics

Multiple choise questions

Q1.Which is incorrect about catalyst

(a)It decrease free energy (b)It decrease Threshold energy

(c) It increase rate of reaction (d)It do not consume in the reaction

Q2.The chemical reaction in which the reactants require high amount of energy are generally

(a) slow (b) fast

(c) instantaneous (d) spontaneous

Q3. State the order with respect to each reactant and overall reaction.

$$H_2O + 3I^- + 2H^+ \rightarrow 2H_2O + I_3^-$$

$$\text{Rate} = k[H_2O_2]^1[I^-]^1$$

Q4. The conversion of molecules X to Y follows the second order of kinetics. If concentration of X is increased 3 times, how will it affect the rate of formation of Y.

Assertion and reason:

Q5. Assertion: Hydrolysis of ester follow pseudo first order kinetics.

Reason: Concentration of H2O negligible change.

Q6. Assertion: Fuels are thermodynamically unstable.

Reason: Value of Std. Gibbs free energy is negative.

Q7. Assertion: Fuels are chemically stable.

Reason: Threshold energy is more than atmospheric temperature.

CH.4- d- Block elements

Q1.Actinoids show more number of oxidationstates but lanthanoids show only +3 and +4.Why?

Q2.Ce^{+4} is better oxiodising agent.How?

Q3.Co^{+2} is unstable in presence of Ligands.

Q4.Oxoanions of d- block elements show highest oxidation.Why?

Q5.Mn shows dip in melting point.Why?

Asserton and reason type

Q6.Assertion: Ce shows +4 oxidation state.

Reason: On losing 4 electrons it obtains noble gas configuration.

Q7.Assertion: Actinoid contraction is greater element to elements.

Reason: 5f shows weaker shielding effect compare to 4f of lanthanoids.

CH-5 Cordinate compounds

Q1. Arrange the following in the increasing order of conductivity in solution.

$[Ni(NH_3)_6]Cl_2$; $[Co(NH_3)_6]Cl_3$ and $[CoCl_2(en)_2]$ Cl

Multiple choise questions:

Q2.Which is correct in the case of $[Fe(CN)_6]^{4-}$ complex?

(a)diamagnetic (b) octahedral (c) d^2sp^3 (d) all are correct

Q3.Which is formed when KCN is added to aqueous solution of $CuSO_4$

(a)$Cu(CN)_2$ (b) $K_2[Cu(CN)_4]$ (c) $K[Cu(CN)_2]$ (d) $K_3[Cu(CN)_4]$

Q4.The geometry of $[Ni(CN)_4]$ and $[Ni(Cl)_2(PPh_3)_2]$ are

(a) both square planar (b)Tetrahedral and square planar

(c)Both tetrahedral (d) Square planar and tetrahedral

Assertion and reason Type

Q5.Assertion:Tetrahedral complexes do not show geometrical isomerization.

Reason: The relative positions of the ligands in the tetrahedral complexes are the same with respect to each other.

Q6.Assertion:$[Co(NH_3)(Cl)_3]$ do not give a white ppt.with$AgNO_3$ solution.

Reason: Chlorine is not present in ionizing sphere.

Q7.Assertion:The ligand N_3^- is named as nitride.

Reason: It is derived from NH_3.

Q8.Assertion:$[Ni(dmg)_2]$ is square planar complex.

Reason: Chelation effect is present in it.

Ch.6- Haloalkanes and haloarenes

Q1.Arrange the following in the increasing order of properly indicated :

(i) 1-chloropropane, isopropyl chloride, 1-chlorobutane (Increasing order

of reaction with base)

(ii) chlorobenzene,2-chlorom -2-methylpropane,2-chloromethane (Increasing reactivity towards nucleophilic substitution and increasing order of dipole moment)

(iii) *o,m.*p-dichlorobenzenes (Increasing order of melting points).

Q2.Complete the following reactions:

(i)$CH_3CHCl\ CH_2CH_3 \xrightarrow{NaOh(alco.)}$

(ii)$CH_3CH{=}CH_2 \xrightarrow[Peroxide]{HBr}$

Q3.Explain the following:

(i)p-dichlorobenzene shows high melting point.

(ii) Haloalkanes donot dissolve in water.

Assertion and reason type

Assertion: 2-chloro-2-methyl propane on reacting with Na forms 2,2,3,3-tetramethyl butane.

Reason: In Wurtz reaction number of carbon becomes double.

CH.7- Alcohol, phenol & ether

Q1.How will you convert

(i) propene to butan -l-ol. (ii) anisole to methanol

(iii) butan-2-one to ethanal (iv) ethanal to 3- hydroxyl butanal

(v) phenol to salicylic acid

Q1 Giving an example of each, describe the following reactions :

(i) Williomson's synthesis (ii) Gatterman reaction

(iii) Kolbe's reaction (vi) Fittig reaction

Q2 Describe the Lucas test for identification of primary, secondary and tertiary alcohols. Also write the chemical equations of the reactions involved.