

HSE2KROXI

9318-C

CHEMISTRY

(Long Answer Type Questions)

1. Define Freezing Point. Explain, why freezing point of a solution is lowered when a non-volatile solute is added to it?

Or

What is Osmotic Pressure ? Explain how the molecular mass of a non-volatile solute can be determined from it?

2. How is nitric acid prepared by Ostwald's Process ? Briefly express the various steps involved in it. Give its reaction with iron and zinc.

Or

Name the members of group 17. Give their electronic configuration. Explain, why fluorine shows only an oxidation state of -1 in its compounds? Which halogen has a tendency to form cation?

3. Why Zn, Cd and Hg are generally not considered, as transitional elements ? Explain (i) why transitional element form a no of interstitial compounds ? (ii) Why Cu (I) is diamagnetic and Cu (II) is paramagnetic ?

Or

How is KMnO_4 prepared from pyrolusite ? Give its oxidis properties in acidic medium with:

(i) Sodium arsenite (ii) Oxalic acid (iii) Hydrogen peroxide,

4. Give any three methods for the preparation of aldehydes What happen when acetaldehyde is treated with:

(i) conc. NaOH (ii) Phenyl hydrazine.

Or

How will you convert:

(i) Benzoic acid into Benzoyl alcohol

(ii) Benzoic acid into Benzoic anhydride

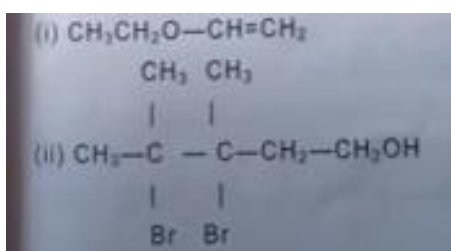
- (iii) Acetic acid into propanoic acid
- (iv) Benzoic acid into methyl benzoate
- (v) Formic acid into oxalic acid.

(Short Answer Type Questions)

- 5. Explain Frankel defect in ionic crystals What type of compound exhibit this defect?
- 6. Define specific conductivity and molar conductivity of a solution and give its units.
- 7. Define order of a reaction ? Derive an expression for the rate constant in the zero order reaction.
- 8. Give the points of difference between absorption and adsorption
- 9. Define with examples:
 - (i) Co-ordination isomerism
 - (ii) Linkage isomerism
- 10. How will you prepare chloroform from Ethanol ?
- 11. What are Monosaccharides? Give the reaction of glucose with acetic anhydride and hydroxyl amine.
- 12. How is Bakelite prepared ? Give its uses.

(Very short Answer Type Questions)

- 13. What is the relationship between Gibbs free energy change and cell potential ?
- 14. Show that in first order reaction half-life period is independent of initial molar concentration of the reactants.
- 15 What are the principal ores of Aluminium ?
- 16. Define Allotropy ? Name the various allotropic forms of phosphorous.
- 17. What are Antifertility Drugs? Give an example.
- 18. Give the I.U.P.A.C. names of:



19. How are ethers prepared from alkyl halides ? Give its reaction with acid chloride.

20. How aniline is prepared from chlorobenzene ? Give its reaction with benzoyl chloride.

(Objective Type Questions)

21. (a) Fill in the blanks.

(i) The total number of atoms per unit cell in a face centred cubic structure is

(ii) The formula for chloral is.....

(b) Tick mark the True/False statement given below:

(i) Uracil is not present in RNA. (True/False)

(ii) PCl_5 acts as an oxidising agent as well as a reducing agent. (True/False)

(c) Give one word substitution to the following:

(i) The earthy unwanted impurities associated with the ore is called as ?

(ii) What substance is added to soap to improve its antiseptic action?

(d) (i) State Markownikov's rule with an example.

(ii) Write the structure of N N dimethyl methane amine.

(e) Choose the correct/most appropriate answer given below against each and write it in your answer-book.

(i) Which one of the following is a lyophobic colloid ?

(a) Sulphur (b) Starch (c) Gum Arabic (d) Gelation

(ii) Which one of the following reacts with NaNO_2 and HCl to give alcohol?

(a) $\text{C}_5\text{H}_5\text{CH}_2\text{NHCH}_3$ (b) $(\text{CH}_3)_2\text{NH}$ (c) CH_3NH_2 (d) $\text{C}_5\text{H}_5\text{NH}_2$

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