

HSE2KROXI

9318 - A

CHEMISTRY

(Long Answer Type Questions)

1. What is Vant Hoff factor? How does it help in determining the degree of dissociation and association of a solute in Solution ?

Or

State and explain Raoult's law. Why does a solution of ethanol and cyclohexane show positive deviation from ideal behaviour?

2. How is chlorine prepared from HCl? What happens when chlorine is treated with:

(i) Sulphur (ii) Slaked lime (iii) Hot alkalies (iv) Turpentine oil.

Or

Name the elements of group 16. Why are they called as chalogens? Explain why oxygen exhibits an oxidation state of -2 while the other members of this family show oxidation of +2, +4 and +6.

3. Name the elements of 3d series. Give their electronic Configuration. Explain, why transitional elements form variable oxidation states?

Or

How is $K_2Cr_2O_7$ obtained from chromite ore? What happens when $K_2Cr_2O_7$ reacts with: (i) Stannous chloride

(ii) Sodium sulphite

(iii) A chloride and conc H_2SO_4

How is acetic acid prepared from:

(i) Primary alcohols

(ii) From nitriles

(iii) By the carbonation of Grignard's reagent.

4. Give the reaction of acetic acid with PCl_2 and chlorine in presence of phosphoric acid.

Or

Write short notes on:

(i) Perkins reaction

(ii) Canizzaro's reaction

(iii) Claisen reaction

(Short Answer Type Questions)

5. Explain with examples the dielectric properties of solids

6. Explain the mechanism of corrosion

7. Define rate of a reaction: Give its unit. What is the effect of catalyst on reaction rate?

8. Define Adsorption. Give the main characteristic of physical adsorption

9. Define the following terms with examples:

(i) Co-ordination complex

(ii) Bidentate ligand

10. starting from Bromoethane how will you get:

(a) Ethyl nitrite (b) Ethanamine (c) Ethane thiol

11. What are Vitamins ? Name the source and disease caused by vitamin B_6 .

12. Name the monomers of nylon-6. How nylon-6 is prepared?

(Very Short Answer Type Questions)

13. What is the Netrist equation? What is the significance of each term in the equation?

14. How is activation energy affected by rise in temperature ?

15. Define the following terms (any two)

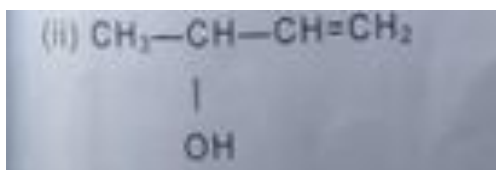
(i) Polling (i) Liqutation (ii) Leaching

16. How Xenon Hexa-fluoride is prepared ? Give its reaction with H₂O.

17. Define Tranquillizer? Give the structure of any tranquillizer

18. Give the I.U.P.A.C. names of:

(i) CH₃O-CH₂-CH₂-OCH₃



19. Starting from phenol how phenophthalein is obtained.

20. Give the Hinsbera's test by which three main types of amine can be identified.

21. (a) Fill in the blanks

(i) in h c.p. the co-ordination number is

(ii) Addition of HCN to a carbonyl compound is example of.....

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

(i) in nucleic acid the sequence is base-phosphate. Sugar. (True/False)

(ii) The Poisonous gas which can be prepared from chlorine gas is mustard gas.

(True/False)

(c) Give one word substitution to the following:

(i) Name the reagent which is used during leaching in order to dissolve the ore particles in Bauxite ore. <https://www.jkboseonline.com>

(ii) Name the sweetener which is 2000 times sweeter than sucrose

(d) (i) Write the structure of D.D.T.

(ii) Write the structure of N-Ethyl-N-methyl ethanamine.

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

(i) Milk can be preserved by adding a few drops of:

- (a) Formic acid solution
- (b) Formaldehyde solution
- (c) Acetic acid solution
- (d) Acetaldehyde solution

(ii) Which one of the following gives secondary amine on reduction?

- (a) Nitrobenzene
- (b) Methyl cyanide
- (c) Methylisocyanide
- (d) Nitroethane

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