

UP Board Question Paper 2011
Subject: Chemistry (Second Paper)
Class : XII

375(PH)

(General and Inorganic Chemistry)

(Only for Science Groups and Commercial Groups)

Time: 3 Hours

Marks: 35

General Instruction:

i. All questions are compulsory. Marks allotted to each question are given in the margin.

ii. Give relevant answers to the questions.

iii. In numerical questions, give all the steps of calculation.

iv. Give chemical equations wherever necessary.

1. There are four alternatives for each part of this question. Select the correct alternative and write it in the answer book.

a) The pH value of 1.0×10^{-8} M NaOH solution is

- i) 6 ii) 7 iii) 8 iv) 14. 1

b) The most effective substance for bringing about coagulation of positively charged sol is

- i) CuSO_4 ii) $\text{C}_2\text{H}_5\text{OH}$ iii) AlCl_3 iv) $\text{K}_4[\text{Fe}(\text{CN})_6]$. 1

c). Which of the following reactions pseudo-unimolecular.

- i). $\text{CH}_3\text{COOC}_2\text{H}_5 + \text{NaOH} \rightarrow \text{CH}_3\text{COOC}_3\text{Na} + \text{C}_2\text{H}_5\text{OH}$
ii). $\text{CH}_3\text{COOCH}_3 \xrightarrow{\text{H}^+} \text{H}_2\text{O} \rightarrow \text{CH}_3\text{COOH} + \text{CH}_3\text{OH}$
iii). $2\text{FeCl}_3 + \text{SnCl}_2 \rightarrow 2\text{FeCl}_2 + \text{SnCl}_4$
iv). $\text{H}_2 + \text{Cl}_2 \rightarrow 2\text{HCl}$. 1

2.a). Give the relationship as well as difference between solubility and solubility product of any binary electrolyte solution. 2

b) Explain example what you mean by the heat of formation. 1

3.a). State Le-Chatelier's principle. What would be the effect of pressure and temperature on the following equilibrium?



b). 11.7 gm sodium chloride is dissolved in 500 ml water. Calculate the molarity of the solution.
[Na=23, Cl=35.5] 1

4. a). Clarify the difference between suspension colloidal solution. 1

b). What is enzyme catalysis? Give the name of any one enzyme catalyst. 1

c). Explain distribution law. 1

5. a) Four alternatives are given for each part of this question. Select the correct alternative and write it in your answer-book:

x) The compound formed by the dehydration of glycerol is

- i) Propanone ii) Formic acid iii) Acrolein iv) Allyl alcohol.

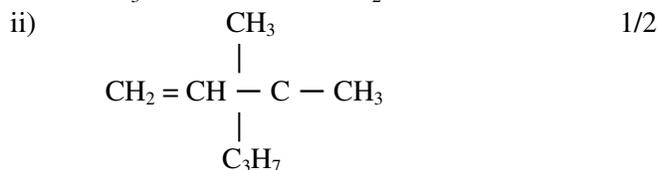
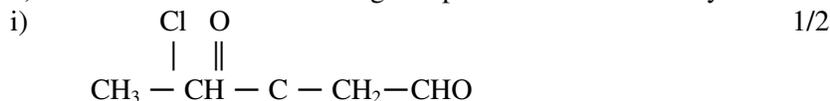
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y) Which of the following diseases is caused by the deficiency of iodine?

- i) Beri-beri ii) Scurvy iii) Night Blindness iv) Goitre.

1

b) Write the names of following compounds in I.U.P.A.C. system:



c) What is Metamerism? Explain with example. 1

6. a) With the help of one chemical reaction each, prove that glucose has one aldehyde and five – OH groups. 2

b) A dibasic organic acid has 26.67% carbon and 2.22% hydrogen. 1.125 gm acid is dissolved in water and the volume of the solution is made up to 250ml. 27.5 ml of N/11 NaOH is used for complete neutralization of 25ml of this solution. Determine the molecular formula of the acid. 3

(C = 12, H = 1, O = 16)

7. a) Giving an example in explain the importance of chromatography in the purification of organic compounds. 2

b) Write a note on knocking. 1

c) Explain the stability of tertiary carbonium ion. 1

8. a) What happens when –

(Give chemical question only)

i) Acetone is heated with iodine and sodium hydroxide?

ii) Phenol is heated with chloroform and caustic soda solution? 1+1

b) How will you obtain the following?

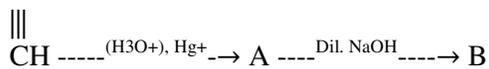
(Give chemical question only)

i) D.D.T. from chlorobenzene

ii) Picric acid from benzene. 1+1

9. a) Complete the following: 2

i) $\text{CH} \begin{matrix} ||| \\ \text{CH} \end{matrix}$



ii) $\text{CHCl}_3 \xrightarrow{\text{A}} \text{CH} \begin{matrix} ||| \\ \text{CH} \end{matrix} \xrightarrow{\text{HBr}} \text{B}.$

b) How will you obtain secondary alcohol by Grignard reagent? Give equation. 1

10. Describe with diagram the laboratory method for the preparation of formaldehyde. What happens when formaldehyde is heated with caustic soda? Also give equation for the reactions involved.

OR

Describe the industrial method for manufacture of ethyl alcohol from starch. Give the equations for chemical reactions involved. What is power alcohol? 3