Karnataka Board

Question Paper

Quaterly Exam 2024
Question Paper

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FIRST QUARTERLY TEST AUGUST 2024

CLASS : II PUC **SUBJECT : CHEMISTRY (34)** **Max. Marks : 35**
TIME : 1 Hr. 30 Mins.

PART-A

I **Select the correct option from the given choices.** **7x1=7**

1) Ornamental gold containing copper is an example for the solution of the type
a) Liquid in Liquid b) Liquid in Solid c) Solid in Solid d) Solid in Liquid

2) Which of the following solutions has higher osmatic pressure ?
a) 0.1 M NaCl Solution b) 0.05 M NaCl Solution
c) 1 M NaCl Solution d) 1.5 M NaCl Solution

3) The solubility of a gas in a liquid
a) decreases with increase in temperature
b) Increases with increase in temperature
c) Initially increases and then decreases with increase in temperature
d) Independent of temperature

4) Zn^{2+} ion is colourless due to
a) The presence of unpaired electrons b) The absence of unpaired electrons
c) The presence of lone pair of electrons d) The absence of lone pair of electrons

5) The common oxidation state of Actinoids
a) + 2 b) + 3 c) + 4 d) + 5

6) In Vinyl halides the hybridisation of the carbon atom to which halogen atom is linked is
a) sp^2 b) sp^3 c) dsp^2 d) sp

7) Chiral molecule among the following is
a) 2-Bromobutane b) 2-Bromopropane b) Isopropyl Chloride d) Propan-2-ol

II **Fill in the blanks by choosing the appropriate word from those given in the brackets:** **3x1=3**

(SN^2, Swell, Shrink, V_2O_5)

8) When RBC is placed in 2% NaCl solution, the cell will _____.

9) _____ is amphoteric in nature.

10) _____ Mechanism involves inversion of configuration.

PART-B

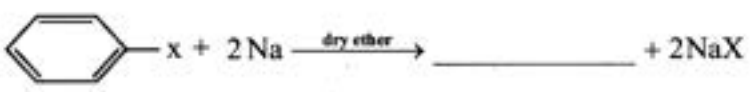
III **Answer any THREE of the following questions. Each question carries TWO marks.** **3x2=6**

11) State Henry's Law and write its mathematical form.

12) Calculate the spin only magnetic moment of Mn^{2+} ion.

13) Transition Metals form large number of complex compounds. Give reasons.

14) Complete the following equation and name the reaction



15) a) What are enantiomers ?
b) A racemic Mixture is optically inactive. Give reason. **(1+1)**

(P.T.O.)

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PART-C

IV **Answer any ONE of the following questions. Each question carries THREE marks.** **1x3=3**

16) Explain the manufacture of potassium dichromate from chromite ore. **3**

17) What is Lanthanoid contraction ? What is the cause for it ? Mention any one consequence of Lanthanoid contraction. **(1+1+1)**

V **Answer any ONE of the following questions. Each question carries THREE marks.** **1x3=3**

18) a) Give any two differences between Ideal and non Ideal solutions.
b) 68% HNO_3 and 32% water by mass forms which type of azeotrope ? **(2+1)**

19) a) Define Van't Hoff factor.
b) What is the value of Van't Hoff factor for a solution of ethanoic acid dissolved in benzene?
c) Give reason sea water boils above 100°C.

PART-D

VI **Answer any TWO questions from the following. Each question carries FIVE marks.** **2x5=10**

20) a) Explain S_N1 Mechanism for the hydrolysis of tertiary butyl bromide. What is the order of the reaction ? **(3)**

b) Complete the following reactions

i) $CH_3CH_2Br + Mg \xrightarrow{\text{dry ether}}$

ii) $CH_3CH_2Br + \underset{(alc)}{AgCN} \longrightarrow _____ + AgBr$ **(1+1)**

21) a) Explain Finkelstein reaction with an example. **(2)**
b) Aryl haldies are less reactive towards nucleophilic substitution reactions compared to alkyl halides. Give reasons. **(3)**

22) a) What is the Major product formed when chlorobenzene reacts with CH_3Cl in the presence of Andyd. $AlCl_3$. Name the reaction and also write the equation. **(3)**
b) What happens when 2-bromopentane is reacted with ethanolic KOH ? Write the equation. **(2)**

PART-E

VII **Answer any ONE questions from the following. Each question carries THREE marks.** **1x3=3**

23) 200 cm^3 of an aqueous solution of a protein contains 1.26 g of the protein. The osmotic pressure of the solution at 300 K is found to be 2.57×10^{-3} bar. Calculate the molar mass of the protein. [Given R = 0.083 litre-bar/mol/K]

24) 1.00 g of a non electrolyte solute dissolved in 50 g of benzene lowered the freezing point of benzene by 0.40 K. The freezing point depression constant of benzene is 5.12 K kg mol^{-1}. Find the molar mass of the solute.

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