CHEMISTRY

BOOKS - JEEVITH PUBLICATIONS CHEMISTRY (KANNADA ENGLISH)

MODEL QUESTION PAPER 3 FOR PRACTICE

Part A

1. Aquating animals are more confortable in cold water rather than in warm water. Give reason.

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2. What is hypertonic solution?

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3. Write the composition of rust?

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4. What happens to the energy of activation of a reaction when positive catalyst is added?

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5. Give an example for protective colloid.

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6. Name the method used to refine semiconducting metals.

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7. Mention the noble gas element used in cancer therapy.

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8. $2RX + 2Na \xrightarrow[\text{ether}]{\text{dry}} R - R + 2NaX$

Write the name of the reaction.

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9. Arrange the following in the increasing order of their acidity.

(i) $CH_3 - CH_2 - \underset{\displaystyle Cl}{\underset{|}{CH}} - COOH$

(ii) $CH_3 - \underset{\displaystyle Cl}{\underset{|}{CH}} - CH_2 - COOH$

(iii) $CH_3 - CH_2 - CH_2 - COOH.$

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10. Write the Zwitter ion structure of Glycine.

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Part B

1. In terms of band theory, what is the difference between a conductor and an insulator?

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2. Find the mass of copper deiposited on cathode when a current of 1.5A is passed through copper sulphate solution for 5 minutes (At. Mass of Cu=63.5).

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3. Write any two differences between order and molecularity of a reaction?

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4. Write the balanced equation for the reaction between acidified $KMnO_4$ and oxalic acid. What is the importance of this reaction?

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5. Why is phenol more acidic than cresol?

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6. How is benzaldehyde prepared by Etard's reaction?

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7. Explain Hofmann's bromamide reaction with an example.

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8. Wha is an antibiotic? Give an example.

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Part C

1. Name any two ores of zinc. How is zinc extracted from zinc oxide?

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2. What happens when ammonium dichromate crystals are heated?

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3. How do you convert N_2 to nitric oxide?

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4. Mention any one use of nitrogen.

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5. Mention any two anomalous properties of nitrogen.

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6. Write the structure of orthophosphoric acid?

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7. How is chloirne gas prepared in laboratory.

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8. Give reason "All halogens are coloured".

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9. Give reason:

Transition elements exhibit variable oxidation states.

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10. Give reason:

Ti^{+4} ion is colourless.

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11. Give reason:

Cu^{+1} ion is diamagnetic.

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12. Explain the preparation of $KMnO_4$ from pyrolusite.

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13. Write the general electronic configuration of 3d series of transition elements.

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14. Using VBT, explain the geometry and magnetic property of $\left[CO(NH_3)_6\right]^{+3}$.

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15. Mention any one importance of co-ordination compounds in the field of

(i) Biology

(ii) Metallurgy.

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16. identify the low spin complex in the following:

$[CoF_6]^{-3}, [Ni(CN)_4]^{-2}.$

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Part D

1. Calculate the number of atoms per unit cell of BCC.

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2. Point out the differences between tetrahedral voids and octahedral voids.

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3. What type of semiconductor is formed when 13th group element iis doped with silicon?

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4. 15 g of an unknown molecular substance was dissolved in 450 g of water. The resulting solution freezes at - 0.34°C. what is molar mass of the substance ? $\left(K_f \text{ for water } = 1.86 kkg \text{ mol}^{-1}\right)$

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5. What are azeotypes? Give an example.

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6. The resistance of solution of salt occupying a volume of between two platinum electrodes 1.8 cm apart and 5.4 cm^2 in area was found to be 32 ohms. Calculate the conductivity of the solution.

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7. Write the symbolic representation of standard hydrogen electrode and give its standard potential value.

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8. Derive an integrated rate equation for the rate constant of a first-order reaction.

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9. Draw the graph for [R] versus time (t) for a zero order reaction. Give the relationship between the rate constant and the slope of the curve.

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10. Give any differences between pysical adsorption and chemical adsorption.

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11. What is

(i) Tyndall Effect.

(ii) Peptisation.

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Part E

1. How does bromo ethane react with

(i) alcoholic KCN

(ii) alcoholic AgCN

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2. Give an example for Wurtz-Fitting reaction.

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3. How do you distinguish between primary, secondary and tertiary alcohols using Lucas reagent.

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4. What happens when benzene diazonium chloride is warmed with water?

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5. How does benzaldehyde react with

(i) NH_2OH

(ii) Nitrating mixture.

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6. Write the structure of

(i) 3 hydroxybutanol

(ii) 4-chloro acetophenone.

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7. i) Explain Hoffmann bromamide degradation for the preparation of aniline.

ii) Give the IUPAC name of $CH_3 - NH - CH_2 - CH_3$.

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8. b) What is Hinsberg's reagent? Between CH_3NH_2 and $C_6H_5NH_2$ which is more basic?

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9. What are reducing Zwitter ion form of an α-amino acid.

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10. (i) Write the Zwitter ion form of an α-amino acid.

(ii) Name the naturally occurring α-amino acids that is not optically active.

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11. What is copolymerization? Give an example with equation.

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12. Give an example for

(i) Polymer fibre.

(ii) thermosetting polymer.

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