CHEMISTRY

BOOKS - JEEVITH PUBLICATIONS CHEMISTRY (KANNADA ENGLISH)

MODEL QUESTION PAPER 1 FOR PRACTICE

Part A

1. Give an example of a solution of liquid gas.

2. Write the unit of molarity of a solution.

3. Write the relationship between molar conductance and limiting molar conductance of an electrolyte.

4. Give an example for a zero order reaction.

5. (a) What is coagulation of sol ? name two methods by which a lyophobic sol can be coagulated.

(b) What is the change in enthalpy and entropy during adsorption of gas on a solid ?

6. Name an acidic flux.

7. Write the general electronic Configuration of Nobel gases.

8. What is asymmetric carbon atom.

9. What is Tollen's reagent.

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10. Write the zwitter ion form of alanine.

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Part B

1. What is Schotty defect ? Give an example.

2. How does molar conductivity vary with dilution in the case of a weak electrolyte?

3. Calculate the time required for 25% completion of a 1 order reaction whose rate constant is 0.015 min^{-1} .
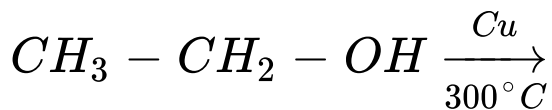
4. Explain zone refining of metals.

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5. Explain williamson's ether synthesis with an

example.

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6. Complete the following:

$$CH_3 - CH_2 - OH \xrightarrow[300°C]{Cu}$$

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7. Complete the following:

$$CH_3 - CH = CH_2 + H_2O \rightarrow \; .$$

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8. Give an example each for

Narrow spectrum antibiotics.

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9. Give an example each for

Analgesics.

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10. Mention a drug which can act, both as an analgesic as well as an antipyretic. Name an artificial sweetening agent.

Part C

1. Write a neat diagram of Blast Furnace annd mention the different temperature zones for the extraction of Iron.

2. For the manufacture of Ammonia by Haber's process, write the equation and optimum conditions for maximum yield of ammonia.

3. How is phosphine prepard in the laboratory?

4. Mention the allotropic form of sulphur which is more stable above 369 k and below 369 k

5. Mention any two resons for anomalous behaviour of Fluorine.

6. What is Aque Regia?

7. Compare any two properties of lanthanide and actinoids.

8. Give reason 'Zr and Hf' exhibits similar properties.

9. With reference to the first row transition metals.

Name a metal which shows maximum number of oxidation states.

10. With reference to first row transition series.

Among Zn^{+2} and Cu^{+2} which is colourless.

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11. With reference to first row transition series.

Between Ti^{+2} and V^{+2} which ion contains more number unpaired electrons.

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12. Using valence bond theory account for the geometry and magnetic nature of $[NiCl_4]^{2-}$

ion. (Atomic number of Ni $= 28$).

13. Give the IUPAC name of $\left[Ti(H_2O)_6\right]^{3+}$.

Draw cis and trans isomers of $\left[Pt(NH_3)_2Cl_2\right]$

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Part D

1. A compound formed by the element A and B crystallizes in the cubic structure, where A is at the corners of the cube and B is at body centre. What is the formula of the compound? If edge length is 5Å, calculate the density of the solid. (Atomic weights of A and B are 60 and 90 respectively).

2. Define the terms (i) lattice point, (ii) unit cell.

3. Give an example for metal deficiency defect of cation vacancy.

4. On dissolving 2.34g of non-electrolyte solute in 40g of benzene, the boiling point of solution was higher than benzene by 0.81K. Kb value for benzene is 2.53 K $kgmol^{-1}$ .Calculate

the molar mass of solute. [Molar mass of benzene is 78 $gmol^{-1}$]

5. State Henry's law. Write its mathematical form.

6. The molar conductances of sodium chloride, hydrochloric aciid and sodium acetate at

infinite dilution are 126.45, 426.16 and 91.0 $ohm^{-1}cm^2mol^{-1}$ at $25°C$ respectively. Calculate the molar conductance of acetic acid at infinite dilution.

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7. What are the products formed at anode and cathode when aqueous solution of sodium chloride is electrolysed.

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8. A certain first order reaction is half completed in 46 min. Calculate the rate constant and also time for 75% completion of the reaction.

9. Mention the factors affecting the rate of reaction.

10. Explain electrodialysis for the purification of colloid.
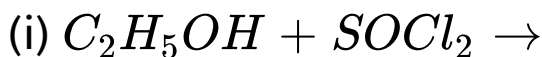
11. Define shape selective catalysis. Give example.

12. Write the equations for the steps in SN-1 mechanism of the convertion of tert-Butyl

bromide into tert-butyl alcohol.

13. Complete the following equations

(i) $C_2H_5OH + SOCl_2 \rightarrow$

14. Explain the preparation of phenol from cumene.

15. Explain Williamson's ether synthesis.

16. Explain the addition of mechanism of HCN to aldehyde or ketones.

17. Write the chemical equations for the following conversions.

(i) Benzamide to Benzoic acid

(ii) Propanone to propene.

(iii) Acetic acid to chloroacetic acid.

18. What is Hinsbergs reagent? How is it used to distinguish primary amine from secondary amine.

19. Explain Hoffman bromamide degradation

for the preparation of aniline.

20. Mention the diseases caused by the

following.

(i) Vitamin C

(ii) Vitamin D.

21. How is dipeptide formed? Give equation.

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22. What are enzymes?

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23. What is a nucleotide?

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24. How are polymers classified based on structures?

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25. Name the type of attractive forces present in (a) elastomers (b) fibrous polymers.

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