



CHEMISTRY

BOOKS - JEEVITH PUBLICATIONS CHEMISTRY (KANNADA ENGLISH)

SUPER MODEL QUESTION PAPER - 1

I Answer All The Question Each Question Carries One Mark Answer Each Question In One Word Or In One Sentence

1. What is the van't Hoff factor value for completely ionized a aluminium sulphate solution.

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2. Give the unit for molal depression constant.



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3. State Kohlrausch law of independent migration of ions.



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4. How many times rate of reaction increases when temperature is increased from $-4.2^{\circ}C$ to $25.8^{\circ}C$.



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5. What is the optimum temperature for enzymatic activity in human body.



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6. What is the role of lime stone in the extraction of iron from the concentrated hematite ore ?

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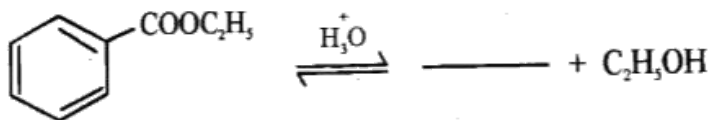
7. Noble gases have very low boiling point. Why ?

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8. Give the general formula for Grignard reagents.

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9. Complete the following reaction.





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10. What is glycosidic linkage ?



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ii Answer Any Five Of The Following Each Question Carries 2 Marks

1. How many particles (atoms) are present in BCC and CCP unit cells ?



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2. Write the reactions occur at anode and cathode in Lechlanche cell.



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3. A first order reaction is found to have a rate constant $K = 5.5 \times 10^{-14} \text{S}^{-1}$. Find the half-life of the reaction.

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4. Give reasons :

- (i) Actinoids show variable oxidation states.
- (ii) Zr and Hf have almost identical radii.

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5. Name the organic compound formed when vapours of tertiary butyl alcohol is passed over heated copper at 573 K. Write the equation.

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6. Explain Etards reaction.

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7. What are analgesics? Give an example for narcotic analgesics.

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8. Give one example each for, (a) anionic detergent (b) cationic detergent.

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iii Answer Any Five Of The Following Each Question Question Carries 3 Marks

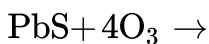
1. Explain the process of obtaining 'blister copper' from copper matte" with equations.

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2. Write the equations involved in the manufacture of sulphuric acid in contact process.

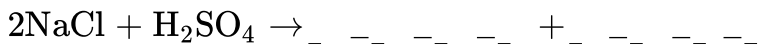
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3. Complete the following equations and balance.



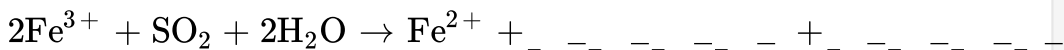
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4. Complete the following equations and balance.



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5. Complete the following equations and balance.



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6. How hot and concentrated sodium hydroxide reacts with chlorine gas ?

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7. What is aqua regia ?

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8. How is potassium permanganate manufactured from MnO_2 ?

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9. Transition elements shows catalytic property. Give two reasons.

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10. What are interstitial compounds?

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11. Explain the hybridisation, geometry and magnetic property of $[Ni(Cl)_4]^{2-}$.

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12. Give the IUPAC name of the complex $[Co(NH_3)_4Cl_2]^+$. Write geometrical isomers for this complex.

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IV Answer Any Three Of The Following Each Question Carries 5 Marks

1. Calculate packing efficiency in BCC lattice.

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2. What is ferromagnetism? Give an example for ferromagnetic substance.

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3. 5% solution of a substance in water has freezing point 269.06K. Calculate molar mass of solute. Freezing point of pure water 273.15K.

$$[K_f = 14K \cdot kg \cdot mol^{-1}].$$

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4. State Raoult's law of a (i) liquid mixture (ii) solution containing non-volatile solute.

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5. Describe the construction and working of standard hydrogen electrode.

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6. Calculate EMF of the cell represents below
 $Zn / Zn^{2+} (C = 0.1M) \parallel Cu^{2+} (C = 1M) / Cu$ at $25^{\circ}C$

Given $E_{Cu}^0 = 0.34V$ $E_{Zn}^0 = 0.76V$

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7. Derive the integrated rate equation for rate constant of a zero reaction.

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8. Give two differences between order and molecularity of a reaction.

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9. What is Tyndall effect? Explain.

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10. Give a Freundlich adsorption isotherm equation.

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V Answer Any Four Of The Following Each Question Carries 5 Marks

1. Write the equations for the steps in SN-1 mechanism of the conversion of tert-Butyl bromide into tert-butyl alcohol.



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2. Explain Fittig reactions with equation.



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3. Give one difference between $S_N - 1$ and $S_N - 2$ mechanism.



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4. Name the major compound formed when phenol is (i) heated with zinc dust (ii) treated with conc. HNO_3



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5. Explain the mechanism of dehydration of ethanol.

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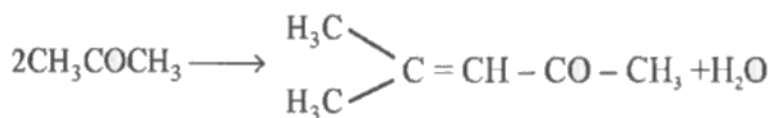
6. How benzene is converted into benzaldehyde by Gatterman-Koch reaction.

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7. Explain the effect of electron donating group on the acidity of carboxylic acids. Give an example.

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8. Write the name of the reaction.



Aldol Condensation

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9. Give the conversion of benzene diazonium chloride to phenol

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10. How is aniline converted into phenyl isocyanide ?

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11. What is Hinsberg's reagent?

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12. Give two differences between starch and cellulose.

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13. What are dipeptides? Explain.

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14. What is nucleoside?

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15. Explain the preparation of Nylon-6, 6 with equation.

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16. Write the structure of isoprene and polyisoprene.

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17. What are biodegradable polymers?



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