



CHEMISTRY

**BOOKS - JEEVITH PUBLICATIONS
CHEMISTRY (KANNADA ENGLISH)**

**SUPPLEMENTARY EXAMINATION
QUESTION PAPER JUNE 2019**

Part A

1. Write the unit of molality of a solution.



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2. At a given temperature, oxygen gas is more soluble in water than Nitrogen gas. Which one of them has higher value of K_H .



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3. State Faraday's first law of electrolysis.



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4. Give an example for pseudo first order reaction. Name the above reaction.



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5. Enthalpy of physical adsorption is quite low:
Give reason.



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6. Name the method used for concentration of sulphide ores.



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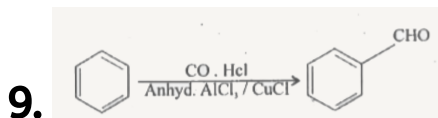
7. Among Noble gases which one is most abundant in air?



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8. Name the major organic product formed when 2-bromopentane is heated with alcoholic potassium hydroxide solution.

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Name the above reaction.

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10. Name the Hormone which, regulates blood sugar level.



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Part B

1. Which type of extrinsic semiconductor is formed when silicon is doped with phosphorus? Mention the major charge carrier in it.



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2. Draw a neat labeled diagram of Standard Hydrogen Electrode (SHE). Write its Half-Cell reaction.



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3. Name any two factors affecting the rate of a reaction.



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4. (a) Zr and Hf have almost identical radii :

Give reason.

(b) Name the gas liberated when Lanthanoids

(Ln) react with acids.



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5. How does phenol react with conc. Nitric acid? Give equation.



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6. Explain Cannizzaro reaction with an example.



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7. What is the role of the following chemicals in food?

(a) Sodium benzoate

(b) Saccharin.



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8. What is saponification? Write the equation to get sodium stearate by this method.



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Part C

1. In the extraction of Aluminium by Hall-Herault process:

Give the equation of overall cell reaction.



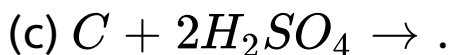
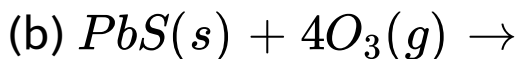
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2. For the manufacture of Ammonia by Haber's process, write the flow chart and chemical equation with suitable conditions.



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3. Complete the following equations:



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4. (a) Give any two reasons for anomalous behaviour of Fluorine.

(b) Write the structure of perchloric acid



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5. (a) Calculate the spin only magnetic moment of Ti^{3+} ion (Atomic number of Ti = 22).

(b) Cu^{2+} salt solutions are coloured : given reason.



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6. Write the balanced equations involved in the preparation of potassium dichromate from chromite ore.



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7. Explain the hybridization, geometry and magnetic property of $[Co(NH_3)_6]^{3+}$ ion on

the basis of Valence Bond Theory (VBT).

[Atomic number of Co= 27].



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8. Which set of d-orbitals of a metal atom/ion experience more repulsion in octahedral field created by the ligands?



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1. (a) Calculate number of particles in Face Centred Cubic (FCC) structure.

(b) Write any two differences between Frenkel and Schottky defects.



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2. On dissolving 2.34g of non-electrolyte solute in 40g of benzene, the boiling point of solution was higher than benzene by 0.81K. K_b value for benzene is $2.53 \text{ K kg mol}^{-1}$. Calculate

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

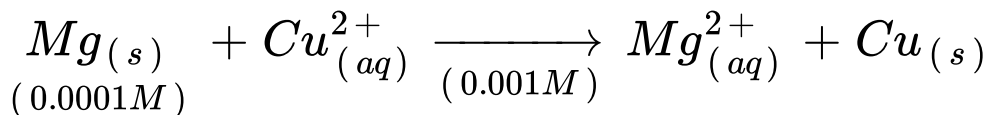


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3. For a given data

$$: E_{Mg^{2+} / Mg}^{\circ} = -2.37V, E_{Cu^{2+} / Cu}^{\circ} = +0.34V$$

Calculate the emf of the cell in which the following reaction takes place .



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



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5. (a) How is Gold-sol prepared by Bredig's-arc method?

(b) What is Homogeneous catalysis? Give an example.



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6. (a) Write the equations for the steps involved in SN^1 mechanism for the conversion of tert-butyl bromide to tert-butyl alcohol.



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7. (a) Explain the mechanism of acid catalysed dehydration of ethanol to

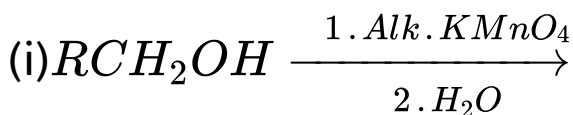
(b) Write general equation for preparation of ether by Williamson's synthesis.

(c) Among alcohols and phenols which one is more acidic?



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8. (a) Complete the following equations:



(b) Explain Aldol condensation reaction for acetaldehyde. Write equation.

(c) What is Formalin solution?



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9. (a) How does Primary amine undergoes carbyl amine reaction? Give chemical equation.

(b) How is aniline is prepared by Hoffmann bromamide degradation reaction? Give equation.

(c) Write the general formula of diazonium salt.



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10. (a) Write the Haworth structure of Maltose.

(b) (i) Name a naturally occurring amino acid which is optically inactive.

(ii) How many peptide bonds are present in a tripeptide?

(c) Deficiency of which Vitamin causes Night blindness?



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11. (a) What is meant by polymerisation? Name the monomer used in the preparation of Polyvinyl Chloride (PVC).

(b) Write partial structure of the following polymers.

(i) Poly propene

(ii) Teflon

(iii) Neoprene



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