



# CHEMISTRY

BOOKS - JEEVITH PUBLICATIONS

CHEMISTRY (KANNADA ENGLISH)

PUE BOARD MODEL QUESTION PAPER

2 WITH ANSWERS

Part A

1. Define the term molality.



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2. How does the enthalpy change during the formation of a non-ideal solution two liquids showing positive deviation from Raoult's law?



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3. What is a primary electrochemical cell?



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4. For the reaction  $2N_2 + 3H_2(g)$  what is the order?



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5. What do you mean by selectivity of a catalyst?



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6. Write the composition of copper matte.





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7. Name the noble gas that is radioactive?



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8. Write the general equation of the preparation of alkyl chlorides from alcohols using  $SOCl_2$ .



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9. What are acetals?



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10. a) Name the water insoluble component of starch.



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**Part B**

1. An element having atomic mass 60 amu. has fcc unit cell. The edge length of the unit cell is  $4 \times 10^2$  pm. Find the density of the unit cell.



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2. Mention any one application of Kohlrausch law.



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3. The half-life period of a certain reaction is directly proportional to initial concentration of the reactant. Predict the order of the reaction and write the expression to calculate the half-life period of the reaction.



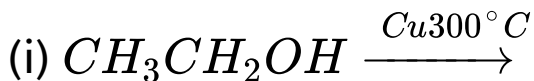
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4. Give two consequences of lanthanoid contraction.



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5. Complete the following reaction,



(ii)  $R - COOH \rightarrow RCH_2OH$ . Name the reagent used in the conversion?



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6. How does ketone react with ethylene glycol.

Write chemical equation for the reaction.



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7. What are analgesics ? Give one example for non-narcotic analgesic.



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8. What are artificial sweeteners? Give an example.



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1. On the basis of Ellingham's diagram explain the principle of extraction of iron from its oxide ore.



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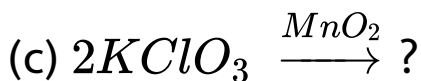
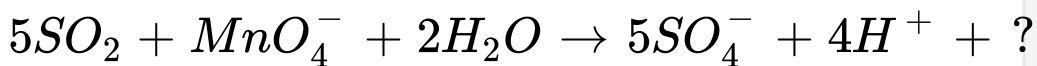
2. Explain the principles involved in the manufacture of ammonia by Haber's process.



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3. Complete the following equations :

(a)



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4. (a) Explain the action of Cone. HCl on  $KMnO_4$  crystals

(b) Write the structure of perchloric acid.





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5. (a) Transition metals show variable oxidation states. Explain.

(b) Which metal of 3d-series exhibit maximum number of oxidation state?



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6. How is  $K_2Cr_2O_7$  manufactured from chromite ore.



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7. Using valence bond theory (VBT), account for the geometry, type of hybridization and magnetic property of  $[NiCl_4]^{2-}$ .



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8. Define linkage isomerism of co-ordination compounds. Give an example.



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1. (a) Calculate the number of particles in BCC lattice.

(b) Calculate the number of particles per unit cell in FCC.



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2. (a) Acetone boils at  $56.38^{\circ}C$  and a solution of 1.41g of an organic compound in 20 g of acetone boils at  $56.88^{\circ}C$ . Calculate the molar

mass of the organic compound (Given  $K_b$  for acetone =  $1.67 \text{Kkg/mol}$ ).

(b) What is reverse Osmosis? Mention one important application of it.



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3. (a) Standard EMF of the cell,  $\text{Cu}|\text{Cu}^{2+}||\text{Ag}|\text{Ag}$  is  $0.46\text{V}$  at  $25^\circ\text{C}$ . Find the value of standard free energy change for the reaction that occurs in the cell.

(b) Draw the neat labeled diagram of SHE and write its symbolic representation.



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4. (a) Mention the integrated rate equation for a zero order reaction

(b) Give any two differences between order and molecularity of reaction



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5. (a) Write any two differences between lyophilic sols and lyophobic sols

(b) What are the differences between physisorption and chemisorption

(c) Give an example for homogeneous catalysis



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6. (a) (i) Name the organic product formed when chloroalkane is heated with concentrated solution of sodium iodide (NaI)

in acetone?

(ii) Write the chemical equation for the above reaction

(iii) Name the above reaction.

(b) Explain Fittig's reaction with an equation.



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7. Organic compounds A, B and C are aliphatic saturated hydroxyl compounds when they react with Lucas reagent (anhyd. $ZnCl_2$ + conc.HCl ), the following observations are

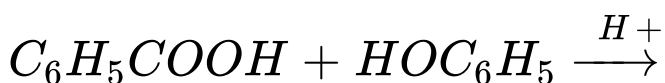
made

(i) Compound A gave turbidity immediately.

(ii) Compound B gave turbidity after five minutes

(iii) Compound C gave turbidity only on heating. Identify the type of compound A, B and C.

(b) Complete the equation:



(c) Name the main organic product formed when anisole is reacted with HI.



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8. (a) Which of the following organic compound undergoes Cannizzaro's reaction?

(i)  $CH_3CHO$  (ii)  $HCHO$

(b) Write the mechanism of addition of  $HCN$  to a carbonyl compounds

(c) Explain the conversion of carboxylic acid into an acid amide. Give the general chemical equation



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9. (a) Explain Mendius reduction with an equation.

(b) When aniline is treated with  $HNO_2$  at 273-278 K, benzene diazonium chloride is formed.

Write the equation and name the reaction.

(c) What is Hinsberg's reagent?



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10. (a) What are non-essential amino acids?

(b) Name the heterocyclic N-containing base

present only in DNA but not in RNA.

(c) Vitamin-C cannot be stored in the body.

Give reason.



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**11.** (a) How is Buna-N prepared ?. Write the equation

(b) Give one example for a non-biodegradable polymer



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