



# CHEMISTRY

## BOOKS - JEEVITH PUBLICATIONS CHEMISTRY (KANNADA ENGLISH)

### PUE BOARD MODEL QUESTION PAPER 3 WITH ANSWERS

#### Part A

1. What is the effect of rise in temperature on the solubility of gases in liquids?





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2. Define osmotic pressure.



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3. Mention the concentration of  $H^+$  ions in the solution used in SHE.



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4. From the following plot, predict the order of the reaction.



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5.  $2SO_2(g) + O_2(g) \xrightarrow{NO_2(g)}$  Is this reaction an example for Homogeneous or Heterogeneous catalysis.



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6. Name the depressant used in separation of ZnS from PbS by froth floatation process.



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7. Which noble gas does not occur in nature?

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8.  $R - X + NaI \xrightarrow{\text{Dry Acetone}} RI + NaX.$  This reaction is known as.....

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9. Give reason : Acetic acid is soluble in water.

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10. Among the following which is a fat soluble vitamin

Vitamin -  $B_{12}$ , Vitamin - C, Vitamin - D.



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## Part B

1. Give two differences between p-type & n-type semiconductors.



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2. What is limiting molar conductivity? Represent graphically the variation in molar conductivity with concentration for acetic acid.

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3. Rate constant of a first order reaction is  $6.93 \times 10^{-3} \text{min}^{-1}$ . Calculate the half-life period.

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4. (i) What is actinide contraction?

(ii) Which is the common oxidation state exhibited

by actinides?



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5. How do you prepare diethyl ether by dehydration of ethanol.



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6. How do you convert benzamide to benzoic acid?



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7. Give one example each for (a) Tranquilizer (b) Antiseptic.

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8. What is saponification with an example.

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## Part C

1. How copper is refined by electrolytic method?

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2. (i) Write the structure and mention basicity of hypo phosphorous acid.

(ii) Which gas is liberated when zinc reacts with dil.

$HNO_3$ ?



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3. Draw the flow chart for the manufacture of sulphuric acid by Contact process. Name the catalyst used in the process.



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4. (a) Give two reasons for the anomalous behaviour of fluorine.

(b) Give one example of interhalogen compounds.

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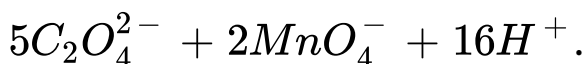
5. What are interstitial compounds?

Write any two characteristics of interstitial compounds.

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6. (i) Write the two chemical equations to show the inter conversion of chromates & dichromates in aqueous solution.

(ii) Complete the equation:



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7. With the help of valence bond theory account for the geometry and magnetic property of  $(Co(NH_3)_6)^{3+}$ .



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8. What is an ambidentate ligand ? Name the type of structural isomerism arises when such ligand present in the complex.



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## Part D

1. (a) Calculate the packing efficiency in c ccp crystal lattice.

(b) What is the number of particles per unit cell of a simple cube.



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2. (a) Calculate the osmotic pressure of 0.05% urea solution in water at 20°C.

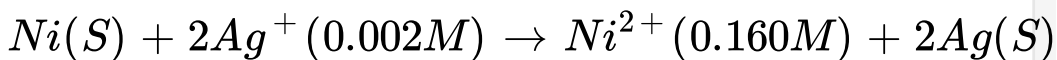
Given  $R = 0.0821 \text{ Latm mol}^{-1} \text{K}^{-1}$ , Molar mass of urea =  $60 \text{ gmol}^{-1}$ .

(b) Give two general characteristics of an ideal solution of two liquids.



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3. (a) Calculate the emf of the cell in which the following reaction takes place



Given that  $E_{cell}^{\circ} = 1.05V$

(b) A galvanic cell after use is recharged by passing current through it. What type of cell is it? Give an example.

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4. Rate constant of reaction at 300 K and 400 K are  $0.0345S^{-1}$  and  $0.1365S^{-1}$  respectively. Calculate the activation energy for the reaction.

[Given :  $R = 8.314JK^{-1}mol^{-1}$ ]

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5. (a) Mention two applications of adsorption.

(b) What are emulsions? Give an example for  $O/W$  emulsion.

(c) What is the cause for Brownian movement?



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## Part E

1. (a) Explain  $SN^2$  mechanism with an example.

(b) Name the product formed when chloromethane reacts with (i) aqueous KOH & (ii) alcoholic AgCN.

(c) Give an example of polyhalogen compound.



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2. (a) Explain esterification reaction between acetic acid and ethyl alcohol as example.

(b) Boiling point of alcohol is greater than the boiling point of hydrocarbons of comparable molar masses, Why?

(c) What is the effect of  $-NO_2$  group on the acidic strength of phenol? Give reason.

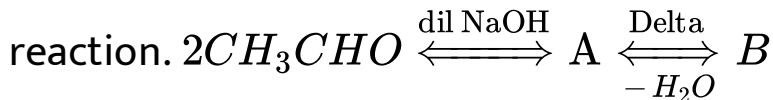


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3. (a) Explain Etards reaction.

(b) Name the products A and B in the following





(c) Name the reagent used in the decarboxylation of carboxylic acid.

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4. a) How do you convert benzene diazonium chloride into chloro benzene.

(b) Explain Hoffman Bromamide reaction with example.

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5. (a) Write the Harworth's structure of maltose.

(b) What are hormones? Give one biological function of insulin.

(c) What are nucleosides?



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6. (a) Name the monomers of Nylon - 6,6.

(b) How is Neoprene prepared? Given equation.

(c) Give an example for thermoplastic polymer.



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