



# CHEMISTRY

BOOKS - JEEVITH PUBLICATIONS

CHEMISTRY (KANNADA ENGLISH)

PUE BOARD MODEL QUESTION PAPER

1 WITH ANSWERS

**Part A**

1. State Henry's law.



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2. Van't Hoff's factor for a solution is less than one . What is the conclusion drawn from it ?



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3. How molar conductivity varies with dilution?



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4. Mention one criterion for intermolecular collisions of two reactants to be effective.



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5. Which metal is refined by Van-Arkel method?



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6. Name the first noble gas compound prepared by Neil Bartlett?



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7. Give an example of a Heteroleptic complex.



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8. Write the IUPAC name for



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9. Give the name of the product X.



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10. Name the storage polysaccharide present in animals.



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**Part B**

1. (a) Give one example of a paramagnetic substance.

(b) Which type of binding force existing in ice?



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2. Write anodic and cathodic half-cell reactions taking place in Daniel cell.



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3. Show that for first order reaction

$$t(87.5\%) = 3t_{50\%}$$



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4. What is lanthanoid contraction? Mention the cause for it.



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5. How do you convert bromomethane into tertiary-butyl ethyl ether? Give the chemical equation of the reaction.



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6. What is Stephen's reaction? Give the chemical equation of the reaction.



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7. What is the therapeutic action of



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8. What are anionic detergents? Give an example.



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**Part C**

1. Explain the extraction of aluminium from purified alumina by Hall-Heroult process.



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2. Explain manufacture of nitric acid by Ostwald's process.



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3. (a) How is ozonised oxygen prepared?

(b) Write the structure of sulphurous acid.



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4. How does phosphorus react with limited amount of chlorine? Give equation.



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5. (a) 3d Transition metals and their compounds are good catalysts. Give two reasons?

(b) Give the formula for the calculation of spin only magnetic moment.



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6. Explain the manufacture of Potassium dichromate from chromite ore.



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7. Using VBT explain, (i) Geometry of the complex

(ii) Type of hybridization, in the complex ion  $[CoF_6]^{3-}$

(iii) Is it an inner or outer orbital complex?



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8. Draw the cis and trans isomers of  $[Pt(NH_3)_2Cl_2]$ .



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## Part D

1. (a) Calculate the packing efficiency in a Face Centered Cubic lattice. (b) If a metal with atomic mass 209 crystallizes in a simple cubic lattice what is the edge length of its unit cell. (Given  $d = 91.5 \text{ kg m}^{-3}$ ).



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2. (a) 5.8g of a non-volatile solute was dissolved in 100g of carbon disulphide (Molar mass = 76). The vapour pressure of the solution was found to be 190 mm Hg. Calculate the molecular mass of the solute. The vapour pressure of pure carbon disulphide 195 mm Hg.

(b) What are azeotropes? Give an example.



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3. (a) The resistance of  $1/10$  M solution is found to be  $2.5 \times 10^3$  ohms. Calculate molar conductance (Given Cell constant = 1.15 cm).

(b) Mention two general methods for prevention of corrosion.



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4. What is the effect of positive catalyst on the energy of activation?



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5. (a) Mention two factors which affect adsorption of a gas on a solid.

(b) Is synthesis of ammonia by Haber's process, a homogeneous or heterogeneous catalysis?

(c) State Hardy-Schulze rule. Among  $Al_2(SO_4)_3$  and  $(NH_4)_3PO_4$  which is better coagulating agent for a negative sol?



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6. (a) Complete the following reaction and write its name  $2C_6H_5Cl + 2Na \xrightarrow{\text{“Dry Ether”}} ?$   
 $+ 2NaCl$

(b) Explain Zaitsev rule with an example.

(c) A Haloalkane when boiled with aqueous KOH which gives an alcohol having inversed configuration. Name the mechanism involved in this reaction.



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7. (a) Explain the mechanism involved in the conversion of ethanol into ethene.

(b) An organic compound with molecular formula  $C_6H_6O$  gives white precipitate with bromine water. Identify the functional group in the organic compound and write the chemical equation for the reaction.



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8. (a) Explain Cannizaro's reaction with an example.

(b) Name the product obtained by the reaction of acetyl chloride with dimethylcadmium. (c) Explain the reaction between carboxylic acid and  $\text{PCl}_5$



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9. (a) Explain carbylamine reaction by taking methyl amine as an example.

(b) Why do primary amine have higher boiling point than tertiary amines? (c) Give an example for a coupling reaction of diazonium salt and give its chemical equation.



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**10.** (a) Deficiency of which vitamin leads to night blindness?

(b) Which hormone is responsible for the hyperthyroidism?

(c) What is a Zwitter ion of an amino acid? Give

its general formula.

(d) What is a nucleotide?



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11. (a) What are Elastomers? Give example.



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