



# CHEMISTRY

## BOOKS - SUNSTAR CHEMISTRY

### (KANNADA ENGLISH)

## II PUC CHEMISTRY (SUPPLEMENTARY EXAM QUESTION PAPER JULY - 2014)

### Part A

1. What is Binary Solution?



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2. Define the term 'Molarity'.



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3. Mention the SI unit for molar conductivity.



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4. Give an example for a zero order reaction.



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5. What is physical Adsorption?



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6. Write the composition of copper matte.



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7. Write the structure of  $XeF_4$



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8. What are Freons?



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9. Give the IUPAC name of  $CH_3CHO$



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10. Name the protein present in hair.



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## Part B

1. Calculate the number of atoms per unit cell of FCC.



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2. What is corrosion? Mention a general method to prevent it.



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3. Derive an expression for half life period of a first order reaction.



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4. Give reasons:

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



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5. Explain Kolbe's reaction.



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6. How are carboxylic acids prepared from nitriles ?



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7. What are antiseptics ? Give examples.



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8. What are food preservatives ? Give an example .



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## Part C

1. Describe the three steps involved in the leaching of bauxite to get pure alumina.



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2. How is ammonia manufactured by Haber's process?



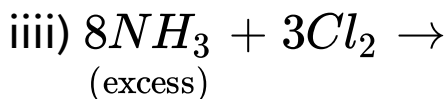
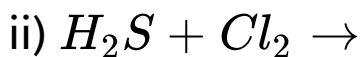
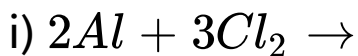
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3. Describe the preparation of Ozonised oxygen with an equation. Name the ozonised product obtained when the ozone reacts with lead-sulphide.



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4. Complete the following equations:



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5. How is potassium dichromate prepared from chromite ore ?



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6. Why do transition elements form complex compounds? Name the elements which exhibit highest oxidation state.



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7. State any three postulates of Werner theory of co-ordination compounds?



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8. Using VBT, explain the geometry and magnetic property of  $[Ni(CN)_4]^{-2}$ . (Atomic Number of Ni=28).



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## Part D

1. Calculate the packing efficiency in a simple cubic lattice.



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2. What is Frenkel defect? Give an example.



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3. The vapour pressure of pure benzene at certain temperature is 0.850 bars. A non-volatile, non-electrolyte solid weighing 0.5 grams when added to 39 grams of benzene (molar mass 78grams), vapour pressure of the solution becomes 0.845 bars. What is the molar mass of the solid substance?



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4. What happens to the solubility of a gas in a liquid on increasing temperature.



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



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6. State Faraday's second law of electrolysis.



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7. a) The rate of a particular reaction doubles when the temperature changes from 300 K to 310 K. Calculate the energy of activation of the reaction. [Given :  $R = 8.314 \text{ JK}^{-1} \text{ mol}^{-1}$ ].



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**8.** Write any two differences between order and molecularity of a reaction?



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**9.** What is coagulation of a sol? Name two methods by which a lyophobic sol can be coagulated.



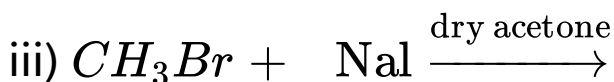
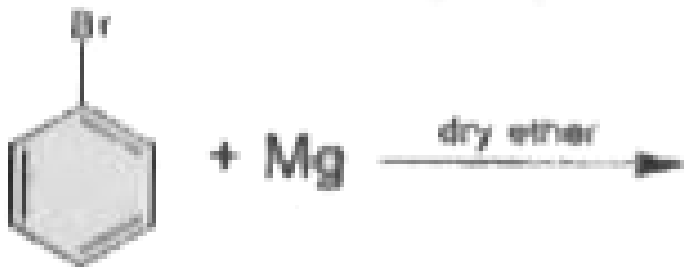
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10. What is homogenous catalysis? Give an example.

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11. Mention the major product formed in the following reaction:





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**12.** Write equations for the steps in  $SN^1$  mechanism of the conversion of tert.butyl bromide into tert.butyl alcohol.



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**13.** What is the effect of

i) Electron withdrawing group on acidity of phenols.

ii) Electron donating group on acidity of alcohols.

iii) Boiling point of alcohols on increasing number of carbon atoms.



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**14.** Write the general equation of Williamson's ether synthesis



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**15.** Write equation for:

i) The reaction between Carboxylic acid and



ii) The reaction between formaldehyde and  
conc KOH.

iii) The formation of oxime from carbonyl  
compound.

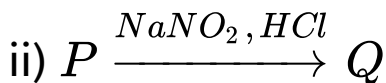
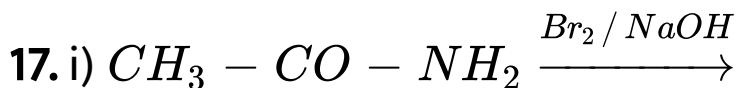


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16. Explain aldol condensation with an example.



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What are P and Q? Name the reaction occurring in step(i).



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18. Explain carbylamine reaction.



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19. i) What is denaturation of protein?

ii) Give an example of acidic amino acid.



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20. Write the Haworth's structure of  $\alpha$ -D(+)

Glucose.





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**21.** Name the monomers used for getting following polymers:

i) PVC ii) Bakelite iii) Polystyrene



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**22.** What is vulcanisation of rubber?



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