



# CHEMISTRY

## BOOKS - JEEVITH PUBLICATIONS CHEMISTRY (KANNADA ENGLISH)

### SUPER MODEL QUESTION PAPER -2 (WITH ANSWERS)

#### Part A

1. State Henry's law.



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2. Components of a non-ideal binary solution cannot be completely separated by fractional distillation. Why?



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3. Write the equation for the reaction occurring at the anode in the lead storage battery when it is in use.



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4. What is collision frequency ?



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5. Give reason activated charcoal is used in gas masks "



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6. Write the composition of copper matte.



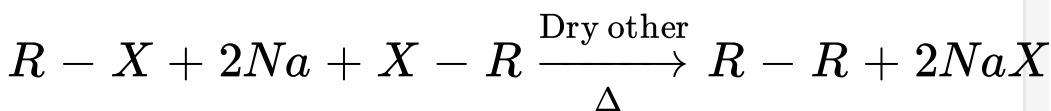
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7. Mention the noble gas element used in cancer therapy.



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8.



. If R is aryl group, what is the name of the reaction.



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9. Complete the following equation



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10. Write the Zwitter ion form of Alanine.



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1. Give two differences between amorphous and crystalline solids.



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2. Calculate the mass of aluminium deposited at cathode when 193 C of current is passed through molten electrolyte containing dissolved alumina.



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3. What is psuedo first order reaction ? Give example .



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4. Give reason :

a) Cerium (Ce) exhibits +4 oxidation state.

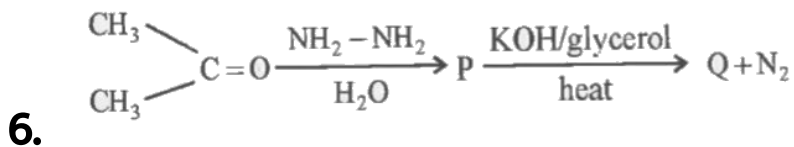
b) Actinoid contraction is greater from element to element than lanthanoid contraction.



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5. Explain Williamson's ether synthesis.

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What are P and Q.

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7. What are detergents ? Why are they preferred over soaps ?



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8. Give an example for - (a) Narrow spectrum antibiotics.

(b) Antifertility drugs.



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



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2. Describe the equation to manufacture nitric acid by Ostwald's process.



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3. Mention three anomalous behaviour of oxygen.



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4. How chlorine gas is manufacture by Decon 's process ?



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5. Inter halogen compounds are more reactive than halogens . Why ?



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6. How is potassium dichromate prepared from chromite ore ?



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7. Calculate the magnetic moment of  $Cr^{3+}$  .



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8. Transition elements exhibit variable oxidation states.

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9. Using VBT, explain the geometry and magnetic property of  $[CO(NH_3)_6]^{+3}$ .

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10. Give two postulates of Werner theory of coordination compounds.



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11. Identify the low spin complex in the following  $[CoF_5]^{3-}$   $[Ni(CN)_4]^{2-}$



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Part D

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



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2. Calculate the number of particles present in BCC unit cell .



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3. The boiling point of benzene is 353.23 K when 1.80 g of a non-volatile, non-ionising solute was dissolved in 90 g of benzene, the boiling point is raised to 354.11 K. Calculate the molar mass of solute.

[Given  $K_b$  for benzene = 2.53 K kg  $mol^{-1}$ ]



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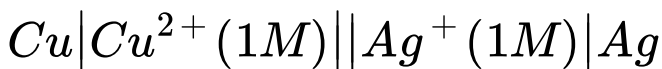
4. What is reverse osmosis ? Mention any one of its use.



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5. Find the value of  $AG^\circ$  at  $25^\circ C$  for the following electrochemical cell.



$$\left[ E_{Cu} = +0.34V, E_{Ag}^\circ = +0.8V \right]$$

$$F = 96487C$$

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6. Draw a neat labelled diagram of  $H_2 - O_2$  fuel cell. Write the reaction occurs at cathode

of the cell.



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



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8. What is (i) rate law (ii) Zero order reaction.



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9. Explain the mechanism of enzyme catalysis.



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10. What are (i) Multimolecular colloids (ii) Macromolecular colloids.



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11. Give reason " Potash alum is used in the clarification of water

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12. Explain  $S_N - 2$  reaction mechanism.

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13. Explain Swartz reaction.

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14. Explain (i) Kolbe 's reaction . (ii) Reimer - Tiemamm reaction.



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15. A carbonyl compound (P) with the formula  $C_2H_4O$  reacts with  $CH_3MgX$  followed by hydrolysis to form an alcohol (Q). Name the alcohol Q.



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**16.** Explain the mechanism of addition of HCN to a carbonyl group in presence of base.



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**17.** Explain Cannizzaro 's reaction.



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**18.** Explain Hoffmann bromamide degradation for the preparation of aniline.



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19. Name the major product formed when nitrous acid is treated with

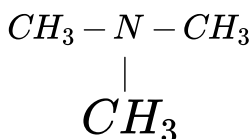
i) methylamine

ii) aniline at low temperature



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20. Give the IUPAC name of the following compound.





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**21.** Write Haworth structure for maltose.



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**22.** What is denaturation of proteins.



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**23.** Name the base present only in DNA but not in RNA.



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**24.** How polymers are classified based on source.



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25. Give the partial structure of (i) Teflon (ii) Nylon -6.



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