



CHEMISTRY

BOOKS - JEEVITH PUBLICATIONS CHEMISTRY

(KANNADA ENGLISH)

SUPPLEMENTARY EXAMINATION QUESTION PAPER

JUNE - 2018

Part A

1. In a binary solution, mole fraction of one component is 0.068.

What is the mole fraction of another component?



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2. State Henry's law.

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3. Why does the conductivity of a solution decrease with dilution?

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4. A chemical reaction has the rate expression, $\text{Rate} = [A]^2[B]$.

What is its overall order ?

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5. Give the principle involved in zone refining process.

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6. Which noble gas does not occur in atmosphere?

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7. What is the value of co-ordination number of Fe in $K_4[Fe(CN)_6]$

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8. In aryl halides, what is the hybridisation of carbon atom to which halogen is attached ?

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9. Write the IUPAC name of $CH_3COCH_2CH_2CH_3$.

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10. Name the nitrogen base present only in DNA not in RNA.

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Part B

1. Calculate the number of particles (atoms) per unit cell in a FCC crystal lattice.

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2. Draw a neat labelled diagram of $H_2 - O_2$ fuel cell and write overall cell reaction.

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3. The rate constant of a first order reaction is $1.15 \times 10^{-3} \text{ s}^{-1}$.

Calculate its half life period ($t_{1/2}$).

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4. What is lanthanoid contraction ?

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5. Which is the general oxidation state shown by actinoids ?

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6. How does phenol react with conc. Nitric acid ? Give equation.

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7. Explain Cannizzaro reaction with an example.

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

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9. What is saponification ? Give the equation to form sodium stearate by this method.

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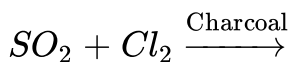
1. Draw a neat labelled diagram of electrolytic cell used in the extraction of Aluminium by Hall - Heroult Process. Write the reactions take place at cathode and anode.

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2. Write the equations with conditions for the manufacture of nitric acid by Ostwald's process.

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3. Complete the equation :



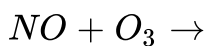
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4. Complete the equation :



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5. Complete the equation :



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6. Write any two anomalous properties of fluorine.

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7. Give an equation for the reaction of chlorine with hydrogen sulphide.



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8. Transition metals show catalytic property: Give reasons.



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9. Between $Cu_{(aq)}^{2+}$ and $Cu_{(aq)}^{+}$ which is more stable?



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10. Write the balanced equations in the manufacture of potassium dichromate from chromite ore.



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11. Explain the hybridisation, geometry and magnetic property of $[CoF_6]^{3-}$ based on VBT.

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

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13. Write the IUPAC name of $K_2[Zn(OH)_4]$.

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1. a. Calculate the packing efficiency in a Body Centered Cubic (BCC) lattice.

b. Silver forms a ccp lattice. The edge length of its unit cell is 408.6 pm. Calculate the density of silver.

($N_A = 6.022 \times 10^{23}$, Atomic mass of Ag = 108 g mol^{-1})

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2. What is Schottky defect ?

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3. 5.8 g of non - volatile, non - electrolyte solute was dissolved in 100 g of carbon disulphide (CS_2). The vapour pressure of the solution was found to be 190 mm of Hg. Calculate molar mass of the solute.

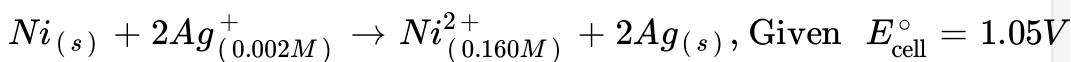
Given : Vapour of pure CS_2 is 195 mm of Hg and molar mass of CS_2 is $76g/mol$.

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4. Mention any two differences between ideal and non-ideal solutions.

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5. Calculate the e.m.f. of the cell in which the following reaction takes place.



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6. State the Faraday's first law of electrolysis. How many Faraday of electricity is required for the reduction of 1 mole of Mg^{2+} ions?

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

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8. Explain the effect of catalyst on the activation energy of the reaction with the graph.

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9. Write any two characteristics of chemical adsorption.



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10. What is Brownian movement? What is the cause for it?



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11. What is homogeneous catalysis?



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12. Write equations for the steps in S_N1 mechanism of conversion of tertiary butyl bromide into tertiary butyl alcohol.



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13. Explain Wurtz-Fittig reaction with equation.



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14. $CH_3Cl + NaI \xrightarrow{\text{Dry acetone}} CH_3I + NaCl$. Name the above reaction.



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15. Write the mechanism of acid catalysed dehydration of ethanol to ethene.



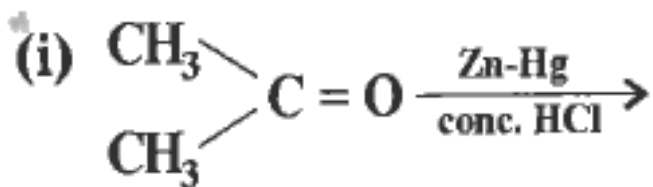
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16. How does anisole react with bromine in ethanoic acid ? Give equation.



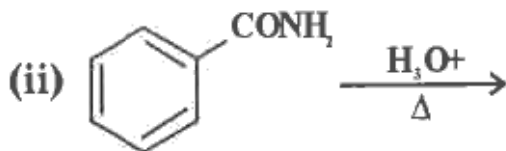
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17. Complete the equations:



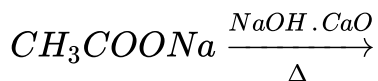
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18. Complete the equations:



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19. Complete the following equations:



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20. Explain esterification reaction with an example.

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21. How is methylamine prepared by Hoffmann bromamide degradation reaction ? Give equation.

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22. How is aniline converted to Benzene diazonium chloride ? Give equation.

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23. Between ammonia and aniline, which is more basic ?

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24. Write Haworth structure for maltose.

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25. What are non-essential amino acids ? Name naturally occurring amino acid which is not optically active.

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26. Which vitamin deficiency causes the disease 'scurvy' ?

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27. How is nylon 6,6 prepared ? Give equation.

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28. Write the partial structure of

Polythene

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29. Write the partial structure of

Neoprene.

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30. Name the monomer present in natural rubber.

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