CHEMISTRY

BOOKS - OSWAAL PUBLICATION CHEMISTRY (KANNADA ENGLISH)

II PUC MARCH - 2017

Part A

1. How does molarity varies with temperature ?

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2. 10 mL of liquid 'A' is mixed with 10 mL of liquid 'B', the volume of the resultant solution is 19.9 ml. What type of deviation expected from Raoult's law ?

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3. Write the mathematical expression for limiting molar conductivity of sodium chloride (NaCl).

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4. Define collision frequency .

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5. Name the adsorbent used to removal of colouring matter from solution.

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6. Give an example of a metal purified by Mond process.

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7. Which noble gas in most abundant in atmospheric dry air?

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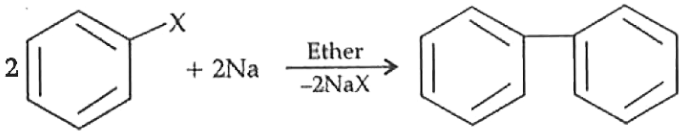
8. What is the name of the following reaction ?



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9. Formaldehyde (HCHO] undergoes Cannizzaro reaction : Give reason.

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10. Deficiency of which vitamin causes the disease scurvy.

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Part B

1. Give the differences between crystalline and amorphous solids with respect to shape and melting point.

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2. Write the cathodic and anodic cell reactions of Hydrogen-Oxygen fuel cell.

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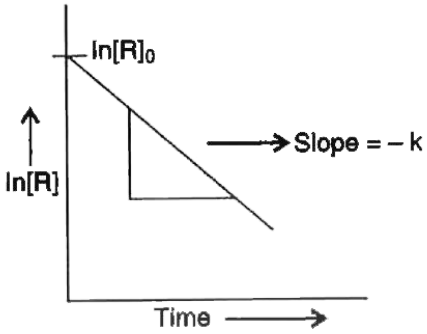
3. From the following graph, identify order of reaction and mention the unit of its rate

constant.



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

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5. How anisole reacts with acetyl chloride $[CH_3COCl]$ in the presence of anhydrous $AlCl_3$? Write the chemical equation for the reaction.

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6. What is the action of ammonia $[NH_3]$ on benzoic acid? Write equation.

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7. Give an example for

(i) Non-narcotic analgesics (ii) Antiseptics.

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8. What are anionic detergents? Give an example.

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Part C

1. In the extraction of Aluminium by Hall-Herault process:

Give the equation of overall cell reaction.

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2. In the manufactore of ammonia by Haber's process, write the flow chart and chemical equations with optimum conditions.

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3. (i) Mention any two reasons for the anomalous behaviour of oxygen.

(ii) Write the balanced chemical equation for the action of concentrated sulphuric acid on copper metal.

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4. Complete the following equations.

a) $\underset{\text{(cold and dil)}}{2NaOH} + Cl_2 \rightarrow$

b) $Cl_2 + \underset{\text{(excess)}}{3F_2} \xrightarrow{573K}$

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5. Which element of 3d series exhibits maximum oxidation state?

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6. How is $KMnO_4$ [Potassium permanganate] is prepared from MnO_2? Write equations.

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7. With the help of Valence Bond theory account for hybridisation, geometry and magnetic property of $\left[Ni(CN)_4\right]^{2-}$ complex ion $[Z \text{ for } Ni = 28]$

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8. Write the cis and trans isomeric structures of $\left[Fe(NH_3)_2(CN)_4\right]^{-}$.

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Part D

1. An element having atomic mass 63.1 g/mol has face centered cubic unit cell with edge length 3.608×10^{-8} cm. Calculate the density of unit cell [Given $N_A = 6.022 \times 10^{23}$ atoms/mol].

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2. (a) 10 g of non-electrolyte solute dissolved in 50 g of benzene lowered the freexing point

of benzene by 0.4 K. Find the molar mass of the solute.[Given : Freezing point depression constant of benzene $= 5.12K.\, kgm \text{ or } ^{-1}]$

(b) How solubility of a gas in liquid varies with (i) Temperature and (ii) pressure?

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3. (a) The electrode potential for the Daniell cell given below is 1.1 V.

$$Zn(s)\left|Z_n^{2+}(aq)\right|\left|Cu^{2+}(aq)\right|Cu(s)$$

Write overall cell reaction and calculate the

standard Gibb's energy for the reaction. $[F96487c/mol]$

(b) Mention any two factors which affects the conductivity of electrolytic solution .

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

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5. (a) Give any two differences between lyophilic and lyophobic colloids.

(b) Write the two steps involved in the mechanism of enzyme catalysed reaction.

(c) What is the entropy change (Δs) for adsorption ?

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6. Write SN^2 mechanism of the conversion of methyl chloride to methyl alcohol.

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

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8. What is the effect of electron withdrawing group on the acidity of carboxylic acid ?

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9. i) Write IUPAC name of $CH_3CH_2NH_2$.

ii) Arrange the following amines in the order of their increasing basic strength in aqueous solution.

$(CH_3)_3N_1, (CH_3)_2NH_1, CH_3NH_2$.

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10. Give an example for

i) Globular proteins.

ii) Naturally occurring optically inactive amino acid.

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11. Name the monomer present in the following polymer

i) Poly vinyl chloride. Ii) Natural rubber.

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