CHEMISTRY

BOOKS - JEEVITH PUBLICATIONS CHEMISTRY (KANNADA ENGLISH)

ANNUAL EXAM QUESTION PAPER MARCH 2017

Part A

1. How does molarity varies with temperature?

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2. 10ml of liquid 'A' is mixed with 10ml 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 mathemtatical expression for limiting molar conductivity of sodiumm

chloride $[NaCI]$.

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4. Define collision frequency.

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5. Name the adsorbent used to remove 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. During the extraction of aluminium by Hall-Heroult process at which electrode oxygen gas is liberated.

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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 . .

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4. (i) Complete the following equations.

(a) $2NaOH + Cl_2 \rightarrow$

(b) $Cl_2 + 3I_2 \xrightarrow{934K}$

(ii) Write the structure of chlorous acid $[HOClO]$.

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5. (i) Calculate the spin - only magnetic moment of Fe^{2+} [Atomic number of iron =26].

(ii) 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. Explain the hybridisation, geometry and magnetic property of $\left[Ni(Cl)_4\right]^{2-}$.

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8. (i) Write the cis and trans isometric structures of $\left[Fe(NH_3)_2(CN)_4\right]$.

(ii) What is the co-ordination number of Fe in $\left[FeCl_2(en)_2\right]Cl$?

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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. 1.0 g of non - electrolyte solute dissolved in 50 g of benzene lowered the freezing point of

benzene by 0.4 K. Find the molar mass of the solute. [Given : Freezing point depression constant of benzene = 5.12 K. kg mol].

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

(b) Write (i) Arrhenius equation

(ii) The formula to calculate half life period of 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. (a) How primary amine is prepared by Hoffmann bromamide degradation reaction? Write equation.

(b) (i) Write IUPAC name of $CH_3CH_2NH_2$.

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10. (a) Write the Haworth structure of maltose.

(b) Give an example for

(i) Globular proteins.

(ii) naturally occuring optically inactive amino

acid.

(c) Name the nucleic acid which is responsible for genetic information.

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11. (a) Explain the preparation of Buna-N with equation.

Name the monomer present in the following polymer

(i) Poly vinyl chloride

(ii) Natural rubber.

(c) Give an example of bio-degradable polymer.

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