CHEMISTRY

BOOKS - OSWAAL PUBLICATION CHEMISTRY (KANNADA ENGLISH)

II PUC APRIL - 2016

Part A

1. Name the law behind the dissolution of CO_2 gas In soft drinks under high pressure.

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2. Ornamental gold containing copper is an example for what type of solution?

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3. Which gas is evolved at cathode dring the electrolysis of an aqueous solution of NaCl?

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4. What happens to the half life period of a first order reaction if the Initial. concentration of the reactants is increased?

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5. Out of physisorption and chemisorption which one has lower enthalpy of adsorption?

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6. Give the composition of copper matte.

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7. Noble gases are chemically inert. Give one reason

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8. What is chirality ?

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9. Complete the following chemical reaction.

$$> C = O + NH_2OH \rightarrow \_\_\_\_\_ + H_2O$$

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10. Which hormone regulates the sugarlevel in the blood ?

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Part B

1. Calculate the no. of particles (atoms) per unit cell in a FCC crystal lattice:

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2. What are ferromagnetic substances? Give one example.

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3. The rate constant of a certain first order reaction is $200S^{-1}$. What is its half life period ?

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4. Zr and Hf have almost identical atomic radii. Give reason?

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5. Explain Kolbe's reaction.

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6. What is the action of dil NaOH on ethanal (acetaldehyde) ? Name the reaction

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7. What is the role of the following chemicals in food?

(a) Sodium benzoate

(b) Saccharin.

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8. What are antifertility drugs ? Give an example

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Part C

1. In the extraction of Aluminimum by electrolysis.

i. Give the composition of electrolyte used

ii. Overall cell reaction

iii. Role of cryolite

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2. Write the balanced Chemical equation with condition involved in manufacture of nitric acid by ostwald's process.

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3. Complete the following chemical equations

(i) $PbS + 4O_3 \rightarrow PbSO_4 +$ _____

(ii) $Cu + 2H_2SO_4 \rightarrow CuSO_4 +$ _____ $+2H_2O$

(iii) $Cl_2 + 2H_2O + SO_2 \rightarrow$ _____ $+2HCl$

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4. How is chlorine prepared using $KMnO_4$?

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5. Why is I_2 less reactive that ICl?

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6. Calculate the spin only magnetic moment of

Fe^{2+}

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7. Why Sc^{3+} salts are colourless whereas Cr^{3+} salts are coloured.

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

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9. On the basis of VBT explain the hybridization, geometrical shape and magnetic property of $[CoF_6]^{3-}$, hexafluorido cobaltate (III) ion.

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10. Write any two postulates of Werner's theory of co-ordination compounds.

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11. Write the IUPAC name of $\left[Pt(NH_3)_2(H_2O)Cl_2\right)$

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Part D

1. a) Calculate the packing efficiency of particles in a body centred cube.

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2. Silver forms ccp lattice and x-ray studies of its crystals show that the edge length of its unit cell is 408.6 pm. Calculate the density of silver. (Atomic mass of Ag = 107.9 u)

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3. 5.8 g of non - volatile, non - electrolyte solute was dissolved in 100 g of carbon disuiphide (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. State Faraday's First law of electrolysis. Write its mathematical form using usual

notations.

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6. i) State Kohlrausch law.

ii) What is meant by limiting molar conductance.

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7. Write the overall cell reaction taking place in Daniel Cell

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

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9. Draw a graph of potential energy V/S reaction co - ordinates showing the effect of catalyst on activation energy (E_a) of a reaction.

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10. Mention any three differences between lyophilic and lyophobic colloids.

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11. What is heterogeneous catalysis ? Give an example.

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12. Explain the mechanism of S_N1 reaction taking 2-bromo-2-methyl propane (t-butyl bromide)

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13. Explain wurtz-Fitting's reaction

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14. Write the general formula of Grignard reagent

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15. How is phenol manufactured by Cumene process?

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16. Among alcohols and phenols which one is more acidic ? And why ?

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

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18. How is bezamide obtained from benzoic acid ?

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19. Explain Carbyl amine reaction

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20. What is the action of bromine water on Benzenamine (Aniline) at room temp.

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21. The pkb values of Ammonia, methanamine and Benzenamic (aniline) are 4.75, 3.38 and 9.38 respectively. Arrange them in the increasing order of their basic strength.

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22. How do you show that glucose contains a linear chain of six carbon atoms.

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23. What are essential amino acids?Is glycine an essential amino acid ?

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24. Write the general formula of Zwitter ionic form of an amino acid

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25. Explain addition polymerisation with an example.

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26. Name the monomers usedl in the manufacture of Nylon-6, 6.

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27. Write the partial structure of Neoprene

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