



CHEMISTRY

BOOKS - SUNSTAR CHEMISTRY (KANNADA ENGLISH)

II PUC CHEMISTRY (ANNUAL EXAM QUESTION PAPER MARCH - 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 during 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.



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10. Which hormone regulates the sugar level in the blood

?

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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 Aluminium by electrolysis.

i. Give the composition of electrolyte used

ii. Overall cell reaction

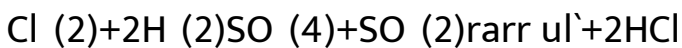
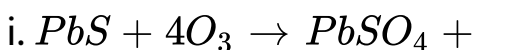
iii. Role of cryolite

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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.





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4. How is chlorine prepared using $KMnO_4$?



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5. Why is I_2 less reactive than 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 equation in the manufacture of $K_2Cr_2O_7$ 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 coordination compounds.

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

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Part D

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. 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 76 g/mol .

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

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4. State Faraday's First law of electrolysis. Write its mathematical form using usual notations.

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5. State Kohlrauseh law.

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

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

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8. 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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9. Mention any three differences between lyophilic and lyophobic colloids.

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10. What is heterogeneous catalysis? Give an example.

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

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12. Explain wurtz-Fitting's reaction

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13. Write the general formula of Grignard reagent

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14. How is phenol manufactured by Cumene process?

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

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

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17. How is benzamide obtained from benzoic acid ?

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18. Explain Carbyl amine reaction

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

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20. The pK_b 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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21. How do you show that glucose contains a linear chain of six carbon atoms.

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

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

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24. Explain addition polymerisation with an example.



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25. Name the monomers used in the manufacture of Nylon-6, 6.



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26. Write the partial structure of Neoprene



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