



CHEMISTRY

BOOKS - JEEVITH PUBLICATIONS

CHEMISTRY (KANNADA ENGLISH)

ANNUAL EXAMINATION QUESTION

PAPER NORTH-2018

Part A

1. Name the SI unit of amount of substance.



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2. Write ideal gas equation for one mole of gas.

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3. The hydrogen ion concentration of a solution is 0.01 M, What is P^H ?

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4. Among O^{2-} , F^{-} ions which one has smaller in size?



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5. What is the oxidation state of Manganese (Mn) in K_2MnO_4 ?



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6. Li^+ ion has maximum degree of hydration. Why?



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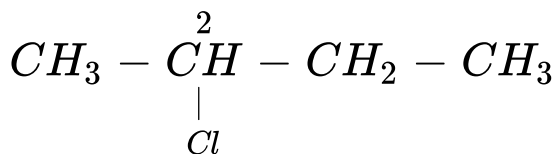
7. Name the colour imparted by CaO in borax bead test.

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8. Give the valence shell electronic configuration of P-block elements.

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9. Give the IUPAC name of





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10. Name the gas liberated when calcium carbide react with water.



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Part B

1. Calculate the amount of water produced in gram by the combustion of 8 g of Methane.



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2. State Boyle's law.



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3. Write the Lewis dot structure of

(i) Oxygen molecule (O_2)

(ii) Ethyne molecule (C_2H_2).



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4. Give any two diagonal relationship between Lithium and Magnesium.

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5. Give any two reasons for anomalous behaviour of carbon in its group.

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6. Define geometrical isomerism. Give an example.

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7. What is Wurtz reaction? Give example.



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8. Give any two effects of depletion of the ozone layer.



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1. What is ionization energy ? How does it change in a period as well as in a group ?

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2. Explain Sp^2 hybridisation taking boron trichloride (BCl_3) as an example.

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3. Write the electronic configuration of Li_2 molecule. Calculate bond order and mention its

magnetic property.



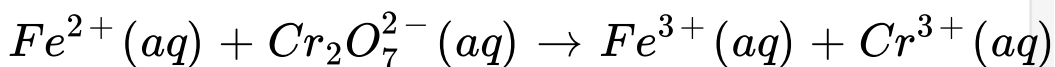
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4. Write any three postulates of VSEPR theory.



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5. Balance the following redox reaction by half reaction method.



(In acid medium)



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6. How temporary hardness of water is removed by Clark's Method?



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7. Give one example of ionic hydrides.



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8. Which isotope of hydrogen is radioactive?



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9. Give the chemical equation involved in the preparation of sodium carbonate by Solvay process.



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10. Write any two differences in the properties of Graphite and Diamond.



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11. Give the composition of WATER GAS.



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Part D

1. Write the postulates of Daltons Atomic theory.



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2. Determine the empirical formula of an oxide of Iron which has 69.9% Iron and 30.1% dioxygen by

mass. [Atomic mass of $Fe = 56$, $O = 16$]



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3. Explain the significance of Principal, Azimuthal and magnetic quantum numbers.



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4. Calculate the frequency of yellow radiation having wavelength 5800\AA .

$$[1\text{\AA} = 10^{-10}m, C = 3 \times 10^8ms^{-1}]$$



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5. State Pauli's exclusion principle. Give the possible values of l for $n = 2$

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6. Write De Broglie equation and explain the terms involved in it.

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7. Write any three postulates of Kinetic molecular theory of gases.

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8. Define (i) Boyle temperature (ii) Critical Volume (V_C)

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9. The enthalpy of combustion of one mole of benzene, carbon and hydrogen are $-3267 \text{ kJ mol}^{-1}$

,-393.5 kJ mol^{-1} and -285.8 kJ mol^{-1} respectively. Calculate the standard enthalpy of formation of benzene.

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10. Define Entropy. What is the value of Entropy change at equilibrium in a spontaneous reversible process?

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11. State Hess's law of constant heat summation.



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12. Explain an example for a extensive property.



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13. Explain Born-Haber cycle for the formation of 1 mole of sodium chloride crystal.



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14. State Le-Chatelier's principle.



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15. Explain the effect of temperature and pressure on the equilibrium equation.



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16. What is the buffer solution? Give an example.



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17. Explain Lewis acid base concept of acid and base.

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18. Define common ion effect. Mention any one factor, which affect acid strength.

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19. Give the value of ionic product of pure water at 298 K.



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Part E

1. How carbon and hydrogen in organic compound are estimated by Leibig's Method?



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2. What is inductive effect? Give an example for electron withdrawing group.



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3. What is position isomerism? Give an example.



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4. What are electrophile? Give an example.



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5. Write the bond line structure of 2-bromobutane.

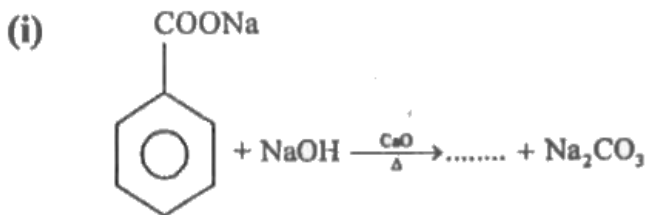


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6. Explain the mechanism of chlorination of methane.

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7. Complete the following reaction.



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8. $CH_3 - CH = CH_2 + HBr \rightarrow \dots\dots\dots$ (Major product)



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