



CHEMISTRY

BOOKS - GURUKUL BOOKS & PACKAGING CHEMISTRY (HINGLISH)

FEBRUARY 2019

Section A

1. A compound used as pistachio flavour in ice cream is

A. vanillin

B. acetophenone

C. muscone

D. butyraldehyde

Answer: B



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2. Common oxidation state of Scandium, a transition element is /are (At. No =21)

A. + 1, + 2

B. + 1, + 3

C. + 2, + 3

D. + 3, + 4

Answer: C



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3. In Van Arkel method for refining zirconium or titanium, the halogen used is

A. fluorine

B. chlorine

C. bromine

D. iodine

Answer: D



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4. A system absorbs 6 kJ of heat and does 1.5 kJ of work on its surroundings. The change in internal energy is

A. -7.5kJ

B. -4.5kJ

C. $+4.5\text{kJ}$

D. $+7.5\text{kJ}$

Answer: C



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5. Write the molecular formula of novestrol.



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6. Write the number of hydroxyl groups present in $\alpha - D - (+) -$ Glucopyranose (trans).



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7. What is Nessler's reagent?



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1. What are ethers? How are they classified?



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2. What are antachids? Write the main constituents of dettol.



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3. Draw a neat, labelled diagram of electrolytic cell for the extraction of aluminium.



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4. How many faradays of electricity are required to produce 6 g of Mg from $MgCl_2$?



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5. The molar conductivity of 0.05 M $BaCl_2$ solution at $25^\circ C$ is $223\Omega^{-1}cm^2mol^{-1}$. What is its conductivity?



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6. van't Hoff equation is



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7. Write the conditions for maximum work done by the system.



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8. Write balanced chemical equations for the following :

(i) Action of sodium metal on ethanol

(ii) Action of zinc dust on phenol.



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Section C

1. Write chemical reactions to prepare the following polymers :

(i) Teflon



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2. Write chemical equation to prepare

(i) Nylon-6 (ii) Nylon-66



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3. Write chemical reactions to prepare the following polymers :

(iii) Dextron



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4. How is glucose prepared by commercial method?

How is peptide linkage formed ?



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5. Write a short note on Hoffmann elimination.



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6. Ethyl bromide on treatment with alcoholic KOH gives



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7. When ethyl bromide is treated with moist Ag_2O main product is//are.



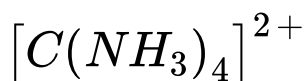
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8. Reaction of ethyl bromide and silver acetate gives –



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9. What is effective atomic number ? Calculate effective atomic number of copper ($Z = 29$) in



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10. Write chemical reactions for different steps in the manufacture of sulphuric acid by lead chamber process. Draw the structure of phosphorus pentachloride.



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11. Write Arrhenius equation. Derive an expression for temperature variations.



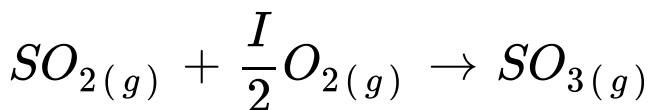
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12. Define electrochemical series. Write its applications.



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13. Calculate the work done in the following reaction at $50^{\circ}C$. State whether work is done on the system or by the system.



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14. The standard enthalpy of combustion of formaldehyde $\Delta_c H^\circ = -571 \text{ kJ}$. How much heat will be evolved in the formation of 22 g of CO_2 ?



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15. Define, (i) Hypertonic solution, (ii) Hypotonic solution, (iii) Isotonic solution.



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16. Define Anisotropy, Distinguish between crystalline solids and amorphous solids.



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Section D

1. Write the structure of Phenylmethanamine.



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2. Which of the following is a Gatterman aldehyde synthesis ?



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3. ROSENMUND REDUCTION



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4. Write chemical equation for the following :

Fischer esterification



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5. Write the reactions involved in the following:

(i) Hell-Volhard Zelinsky reaction

(ii) Decarboxylation reaction



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6. What are anines ?



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7. How will you convert :

(i) calcium acetate to acetaldehyde



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8. How will you convert :

(ii) acetone to acetone cyanohydrin



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9. How will you convert :

(iii) sodium acetate to methane



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10. How will you convert :

(iv) benzoic acid to m-bromobenzoic acid?



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11. Enantiomers are



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12. How the potassium dichromate prepared from chrome iron ore?



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13. grignard reagent



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14. Explain the position of actinoids in the periodic table.

What is the action of sulphur on lanthanoids ?

Calculate the magnetic moment of divalent ion in aqueous solution if its atomic number is 24.



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15. The rate of a first order reaction. $A \rightarrow B$ is $5.4 \times 10^{-6} \text{ M s}^{-1}$ when $[A]$ is 0.3 M. Calculate

the rate constant of the reaction



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16. Explain the following properties of group 16 elements :

(i) Electronegativity



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17. Explain the following properties of group 16 elements :

(ii) Melting and boiling points



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18. Explain the following properties of group 16 elements :

(iii) Melting and character



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19. Explain the following properties of group 16 elements :

(iv) Allotropy



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20. The half life period of a first order reaction is 6.0 h. Calculate the rate constant.



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21. What are oxides ?

Write different types of oxides with one example each.



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