CHEMISTRY

BOOKS - OSWAAL CHEMISTRY (KANNADA ENGLISH)

CARBON AND ITS COMPOUNDS

Topic I Carbon And Its Properties Homologous Series And Iupac Names Multiple Choice Question

1. Identify a property of amorphous silicon in the following

A. Does not burn in the air

B. Has dark grey colour

C. Oxidizes at the surface level when heated in the air

D. Less reactive

Answer: C

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2. An example of polyfunctional compound is

A. Glycine

B. Ethanol

C. Ethanamine

D. Methanal

Answer: A

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Topic I Carbon And Its Properties Homologous Series And Iupac Names Match The Column

1. The processes related to organic compounds are given in Column-A and their procedure are given in

Column-B. Match them and write the answer along with its letters:

Column A	Column B
(A) Preparation of Methane gas.	(i) Production of salts of fatty acids starting from oils or fats.
(B) Substitution reaction.	(ii) Conversion of liquid oils into solid saturated fats.
(C) Hydrogenation.	(iii) Heating fused sodium acetate with soda lime.
(D) Saponification.	(iv) Heating an aqueous solution of ammonium cyanate.
	(v) Burning of methane in air.
	(vi) Heating ethanol in the presence of acidified potassium permanganate.
	(vii) Exposing the mixture of methane and chlorine to ultraviolet light.

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Topic I Carbon And Its Properties Homologous Series And Iupac Names Very Short Answer Type Ouestions

1. What is a homologous series of carbon compounds?

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2. Write the next homologue of each of the following :

(i) C_2H_4, $(ii)C_4H_6$

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3. Write the name and formula of the 2^{nd} member of homologous series having general formula C_nH_{2n}.

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4. Write the name and molecular formula of the first member of the homologous series of alkynes.

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5. Write the name and formula of the 2^{nd} member of homologous series having general formula C_2H_2.

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6. Write the name and formula of the 2^{nd} member of homologous series having general formula C_nH_{2n+2}.

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7. Molecular formula of a hydrocarbon is C_3H_8. Draw its complete structure and write its name

Watch Video Solution

8. Write next two members of the homologous series

$C_2H_6, C_3H_8.$

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9. Which of the following belong to the same homologous series?

C_3C_8, C_4H_8, C_3H_6

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10. Write next two members of the homologous series $C_2H_6, C_3H_8.$

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11. What is the difference between two consecutive members in a homologous series in alkanes in terms of :

(i) Molecular mass

(ii) Number of atoms of elements.

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12. The molecular formula of 'A' is $C_{10}H_{18}$ and B is $C_{18}H_{36}$. Name the process by which they belong.

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13. Name the following compounds :

(i) $CH_3 - CH_2 - OH$, (ii) $CH_3 - \overset{H}{\underset{|}{HC}} = O$

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14. Which element exhibits the property of catenation to maximum extent and why ?

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15. Write the name and molecular formula of the fourth member of alkane series.

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16. Select saturated hydrocarbons from the followings :

$C_3H_6, C_5H_{10}, C_4H_{10}, C_6H_{14}, C_2H_4$

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17. Write the name and structure of an alcohol with three carbon atoms in its molecule.

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18. Write the name and structure of an aldehyde with four carbon atoms in its molecule.

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19. Write the name and structure of an aldehyde with four carbon atoms in its molecule.

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20. Name the process of converting vegetable oil to vegetable ghee.

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21. Write the number of covalent bonds in the molecule of Ethane.

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22. Write the number of covalent bonds in the molecule of Propane, C_3H_8

Watch Video Solution

Watch Video Solution

23. Name of process by which unsaturated fats are changed to saturarted fats.

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24. Write the name of each of the following functional groups :

(i) -OH

(ii) $-\underset{\underset{O}{||}}{C}-$

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25. Write the number of covalent bonds in the molecules of butane C_4H_{10}.

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26. Mention the percentage of carbon in earth's crust.

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27. Name the functional group present in CH_3COCH_3 and state the name of this compound.

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28. Name the functional group present in

(a) CH_3CHO (b) C_2H_5COOH

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29. Write the molecular formula of the following:

(i) Hexane, (ii) Benzene.

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30. Write the formula of functional group

(a) alcohol (b) aldehyde .

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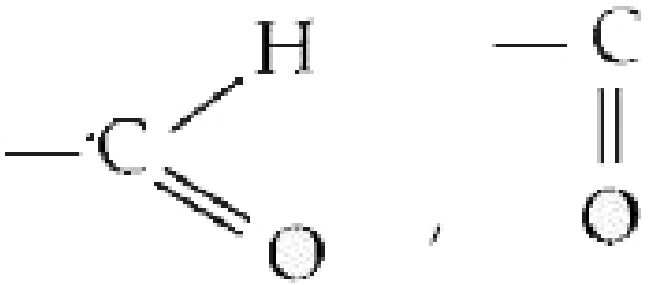
31. Given below are the formulae of some functional groups:



Write the name of these functional groups

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32. How is silicon carbide prepared? Write one of its uses.

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33. In the manufacture of sugar, the container of the sugarcane juice is connected to a vaccum pump. Why?

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Topic I Carbon And Its Properties Homologous Series And Iupac Names Short Answer Type Ouestions I

1. The molecular formula of the first member of a certain group of organic compounds is CH_2O (HCHO). Determine the name and the molecular formula of the third member of this group if the members of this group are in homologous series. What is the general name for this group of organic compounds ?

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2. Write molecular, electronic and structural formulae of ethene.

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3. What is covalent bond? What type of bond exists in the following?

$i]CCl_4 \quad ii]CaCl_2 \quad iii]CH_4 \quad iv]NH_3.$

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4. Why is it not easy for carbon to take part in the formation of ionic compounds ?

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5. (i) What is a functional group?

(ii) State two properties of carbon which lead to huge number of carbon compounds we see around us.

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6. List two differences between saturated and unsaturated hydrocarbons.

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7. Differentiate between addition reaction and substitution reaction.

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8. (i) Write the name of the following compounds :

(a) HCOOH (b) $CH_3COCH_2CH_3$.

(ii) Explain why carbon generally forms compounds by covalent bonds.

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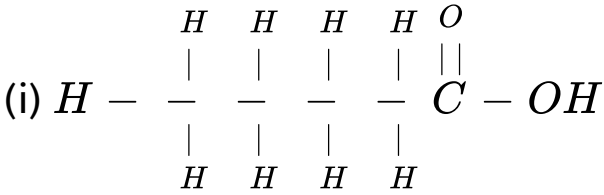
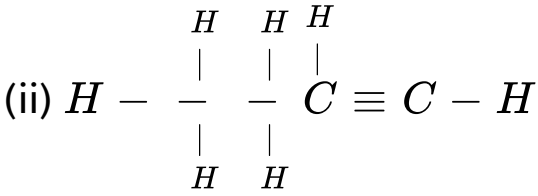
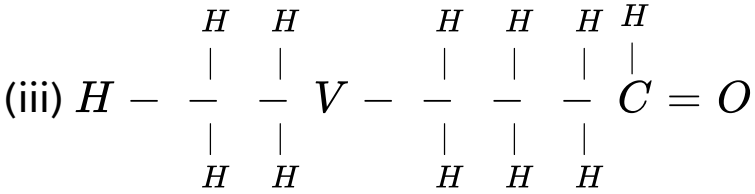
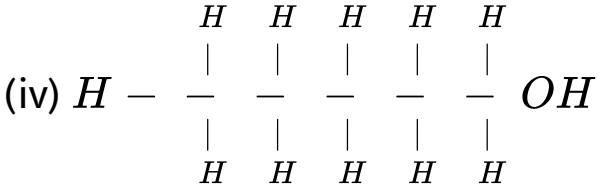
9. Write the name of the following compounds :

(i) 

(ii) 

(iii) 

(iv) 

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10. "Manufacture of ethyl alcohol from molasses is a good example for fermentation." Give reasons.

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Topic I Carbon And Its Properties Homologous Series And Iupac Names Short Answer Type Ouestions Ii

1. What are covalent compounds ? Why are they different from ionic compounds ? List their three characteristics.

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2. Draw the structures of the following compounds and identify the functional group present in them :

(i) Butanoic acid

(ii) Bromopropane

(iii) Butyne

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3. What is meant by isomers ? Draw the structure of two isomers of butane, C_4H_{10}. Explain why we cannot have isomers of first three members of alkane series.

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4. Write the molecular formula of the following compounds and draw their electron-dot structures :

(i) Ethane

(ii) Ethene

(iii) Ethyne

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5. Write the name and structural formula of the compound formed when ethanol is heated at 443K temperature with excess of conc. H_2SO_4. What is the role of conc. H_2SO_4 in this reaction ? Also give the chemical equation for the reaction.

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6. What is meant by homologous series of carbon compounds ? Write the general formula of (i) alkenes, and (ii) alkynes. Draw the structures of the first member of each series to show the bonding between the two carbon atoms.

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7. What is homologous series of carbon compounds ? Write the molecular formula of two consecutive members of homologous series of aldehydes. State

which part of these compounds determines their (i) physical and (ii) chemical properties.

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8. State the meaning of functional group in a carbon compound. Write the functional group present in (i) ethanol, and (ii) ethanoic acid and also draw their structures.

Watch Video Solution

9. State the meaning of functional group an organic compound. Write the formula of the functional group present in alcohols, aldehydes, ketones and carboxylic acids.

Watch Video Solution

10. Write the name and general formula of a chain of hydrocarbons in which ar addition reaction with hydrogen can take place Stating the essential conditions required for an addition reaction to occur, write the chemical equation giving the name of the reactant and the product of such a reaction.

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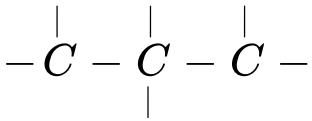
11. Carbon has the unique property to form bonds with other atoms of carbon.



(i) Name the characteristic property of carbon as depicted in the fig. A

(ii) Give reason for this unique property of carbon.

(iii) Draw the structure of cyclohexane.

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12. Name and draw the chain structure and dot structure of first two alkanes.

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13. Write the names of the following:

(i) $CH_3CH_2 - C \equiv CH$

(ii) CH_3CH_2OH

(iii) CH_3COCH_3.

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14. (a) List four characteristics of homologous series.

(b) Draw the electron dot structure of carbon dioxide.

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15. (i) Identify from the following the hydrocarbons that can undergo addition reactions:

$C_3H_4, CH_4, C_2H_6, C_2H_4$. Justify your answer.

(ii) Write the name of the homologous series to which they belong to.

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16. (i) Define the term functional group. Identify the functional group present in

$$(a)\,H-\overset{\overset{O}{||}}{C}-H,\ (b)\ H-\underset{\underset{H}{|}}{\overset{\overset{H}{|}}{H}}-\overset{\overset{OH}{|}}{C}=O$$

(ii) What happens when 5% alkaline $KMnO_4$ solution is added drop by drop to warm ethanol taken in a test-tube ? State the role of alkaline $KMnO_4$ solution in this reaction.

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17. An aldehyde and a ketone can be represented by the same molecular formula, say C_3H_6O. Write their

structures and name them. State the relation between the two in the language of science.

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18. Explain the following:

(i) CH_3COOH is a weak acid

(ii) Propene undergoes addition reaction

(iii) The gas stoves have inlets for air.

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19. List two tests for experimentally distinguishing between an alcohol and a carboxylic acid and describe how these tests are performed.

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20. How would you distinguish experimentally between an alcohol and a carhoxylic acid?

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21. What is meant by functional group in carbon compounds Write in tabular form the structural

formula and the functional group present in the following compounds :

(i) Ethanol

Ethanoic acid

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22. Write the molecular formula of two consecutive members of the homologous series of aldehydes. State which parts of these. Compounds determine their physical and chemical properties.

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23. A compound X is formed by the reaction of a carboxylic acid $C_2H_4O_2$ and an alcohol in the presence of a few drops of sulphuric acid. The alcohol on oxidation with alkaline potassium permanganate followed by acidification gives the same carboxylic acid as used in this reaction. Give the names and structures of the

a) carboxylic acid

b alcohol and

c) the compound X. Also write the reaction.

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Topic I Carbon And Its Properties Homologous Series And Iupac Names Long Answer Type Question

1. Explain the following reactions with one example for each giving relevant chemical equations : (i) Hydrogenation reaction,

(ii) Oxidation reaction,

(iii) Substitution reaction,

(iv) Saponification reaction.

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2. Give two examples of covalent compounds which you have studied. State any four properties in which covalent compounds differ from ionic compounds.

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3. Draw the structure for the following compounds :

(i) 2-Bromopentane, (ii) 2-methyl propane,

(ii) Butanal, (iv) 1-Hexyne.

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4. Describe the following chemical properties of carbon compounds briefly and give one chemical reaction for each :

(i) Combustion

(ii) Addition

(iii) Substitution

(iv) Esterification

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5. i] Give a chemical test to distinguish between saturated and unsaturated hydrocarbon.

ii] Name the product formed when ethane burns is air. Write the balanced chemical equation for the reaction showing the types of energies liberated.

iii] Why is the reaction between methane and chlorine in the presence of sunlight considered a substitution reaction?

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6. (a) State any three physical properties of carbon compounds.

(b) Carbon is a versatile element. Justify this medium statement.

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7. Explain why carbon forms compounds mainly by covalent bonds. Explain in brief two main reasons for carbon forming a large number of compounds. Why does carbon form strong bonds with most other elements.

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8. What are the two properties of carbon which lead to the huge number of carbon compounds we see around us?

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9. Elements forming ionic compounds attain noble gas electronic configuration by either gaining or losing electrons from their valence shells. Explain giving reason why carbon cannot attain such a configuration in this manner to form its compounds.

Name the type of bonds formed in ionic compounds and in the compounds formed by carbon. Also explain with reason why carbon compounds are generally poor conductors of electricity.

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10. List two reasons for carbon forming a large number of compounds. Name the type of bonding found in most of its compounds. Why does carbon form compounds mainly by this kind of bonding. Give reason why the carbon compounds:

(i) Generally have low melting and boiling points.

(ii) Do not conduct electricity in molten state.

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11. State the reason why carbon forms a covalent compound and not C^{4+} and C^{-4}. Also give reasons why covalent compounds are bad conductors of electricity and have law melting and low boiling points.

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Topic Ii Carbon Compounds Soap And Detergents Multiple Choice Question

1. Select a sweet smelling compound out of the following:

A. $CH_3CH_2CH_2OH$

B. CH_3CH_3X

C. CH_3CH_2COOH

D. $CH_3COOC_2H_5$

Answer: D

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2. Detergents are sodium or potassium salts of long chains of

A. Carboxylic acids

B. Sulphonic acids

C. Aldehydes

D. Stearic acids

Answer: B

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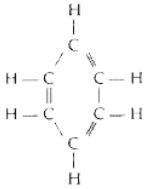
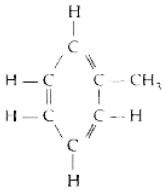
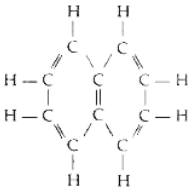
Topic Ii Carbon Compounds Soap And Detergents Match The Column

1. The structural formulae of hvdrocarbons are given in Column-A and their uses are given in Column-B.

Column - *A*	Column - *B*
(a) 	(i) Preparation of moth balls
(b) 	(ii) Solvent for lacquers (iii) Separation of soap (iv) Dry cleaning
(c) 	(v) Used as fuel (vi) Preparation of esters
(d) 	(vii) Peparation of aspirin.

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Topic Ii Carbon Compounds Soap And Detergents Very Short Answer Type Ouestions

1. What is saponification?

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2. Name the simplest ketone.

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3. What is the common name of CH_3COOH ?

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4. Name the products formed when ethanoic acid reacts with a sodium hydrogen carbonate.

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5. An organic compound burns with a sooty flame. Is it saturated or unsaturated compound ? Justify.

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6. Draw the electron dot structure of nitrogen molecule.

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7. Why is Ethanoic acid called a glacial acetic add?

Watch Video Solution

8. In organic compound, which part largely determine its physical and chemical properties?

Watch Video Solution

9. What happens when methane is burnt in air?

Watch Video Solution

10. What happens when bromine water is added to ethene gas?

Watch Video Solution

11. Complete the following reaction :

$CH_3COOH + NaHCO_3 \rightarrow$

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12. Write the chemical equations for the conversion of ethanol to ethanoic acid in the presence of $KMnO_4$.

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Topic Ii Carbon Compounds Soap And Detergents Short Answer Type Question I

1. (i) Describe the mechanism of cleansing action of soaps.

(ii) Why do soaps not work in hard water?

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2. The general formula of a group of organic compounds in $C_nH_{2n+1}OH$. . Write the molecular formula of first two members of this group. Examine whether these two compounds are in homologous series, based on their molecular formula.

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3. What is hydrogenation of oils ? Write two advantage of its.

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4. (i) What is vinegar ? Give its uses.

(ii) Why does carbon form compounds having low melting and boiling points ?

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5. Give a chemical test to distinguing between butter and cooking oil.

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6. List any four differences between soaps and detergents.

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7. (a) Complete the following reactions :

$$CH_4 + CI_2 \xrightarrow{\text{Sunlight}} \ldots\ldots\ldots + HCI$$

$$CH_3CH_2OH \xrightarrow[H_2SO_4]{\text{Hot.conc.}} H_2C = CH_2 + H_2O$$

(b) How is scum formed ?

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8. (i) What would be observed on adding a 5% alkaline potassium permanganate drop by drop to some warm ethanol taken in a test-tube?

(ii) Write the name of the compound formed during the chemical reaction.

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9. (i) An organic compound 'X' reacts with sodium metal to form sodium ethoxide and a gas 'Y'. Identify 'X' and 'Y'.

(ii) What happens when ethanol is heated at 443 K with conc. H_2SO_4?

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10. An organic acid 'X' is a liquid which often freezes during winter time in cold countries. It has molecular formula $C_2H_4O_2$. On warming with ethanol in the presence of a few drops of conc. H_2SO_4 a compound Y with a sweet smell is formed.

(i) Identify 'X' and 'Y'.

(ii) Write chemical equations for the reactions involved.

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11. (i) What is a catalyst ? Write the chemical equation to represent the hydrogenation of ethene.

(ii) Which of the following compounds belong to the same homologous series ?

$C_2H_6, C_2H_6O_2, C_2H_6O, C_4H_{10}.$

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Topic Ii Carbon Compounds Soap And Detergents Short Answer Type Question Ii

1. What is an oxidising agent? What happens when an oxidising agent is added to propanol ? Explain with the help of a chemical equation.

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2. Write the molecular, electron-dot , and structural formula of ethyne.

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3. Draw the electron dot structure of ethyne and also draw its structural formula.

Watch Video Solution

4. (i) Differentiate between alkanes and alkenes. Name and draw the structure of one member of

each.

(ii) Alkanes generally burn with clean flame. Why?

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5. Explain why it is difficult to wash clothes with soap when water is hard. How do detergents help in overcoming this problem?

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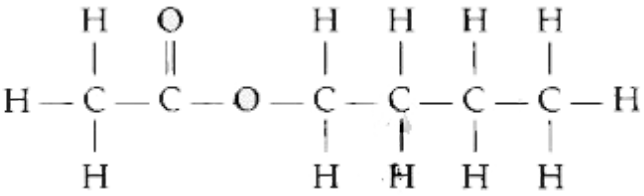
6. The structural formula of an ester is :



Write the structural formula of the acid and the alcohol from which it might be prepared. Name the process of formation of ester.

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7. Write three different chemical reactions showing the conversion of ethanoic acid to sodium ethanoate. Write balanced chemical equation in each

case. Write the name of the reactants and the products other than ethanoic acid and sodium ethanoate in each case.

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8. When ethanol reacts with ethanoic acid in the presence of conc. H_2SO_4, a substance with fruity smell is produced. Answer the following:

(i) State the class of compounds to which the fruity smelling compounds belong. Write the chemical equation for the reaction and write the chemical name of the product formed.

Sate the role of conc.H_2SO_4.

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9. Name the compound formed where ethanol is heated is excess of concentrated sulphuric acid at 443 K. Also write the chemical equation of the reaction stating the role of concentrated sulphuric acid in it. What would happen if hydrogen is added to the product of this reaction in the presence of a catalyst such as potassium or nickel?

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10. Write the name and molecular formula of an organic compound having its name suffixed with 'ol' and having two carbon atoms in its molecule. Write balanced chemical equation to indicate what happens when this compound is heated with excess conc. H_2SO_4 and the name of main product formed. Also state the role of conc. H_2SO_4 in the reaction.

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11. An organic compound 'P' is a constituent of wine. 'P' on reacting with acidified $K_2Cr_2O_7$ forms another compound 'Q'. When a piece of sodium is

added to 'Q' a gas 'R' evolves which burns with a pop sound. Identify P, Q and R and write the chemical equations of the reactions involved.

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12. Write chemical equation of the reaction of ethanoic acid with the following:

(i) Sodium

(ii) Sodium hydroxide

(iii) Ethanol.

Write the name of one main product of each reaction.

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13. On dropping a small piece of sodium in a test-tube containing carbon compound 'X' with molecular formula C_2H_6O, a brisk effervescence is observed and a gas Y is produced. On bringing a burning splinter at the mouth of the test-tube the gas evolved burns with a pop sound. Identify 'X' and 'Y'. Also write the chemical equation for the reaction. Write the name and structure of the product formed, when you heat 'X' with excess conc. sulphuric acid.

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14. When we take 1 ml ethanol and 1 ml ethanoic acid along with a few drops of concentrated sulphuric acid in a test-tube a sweet smelling substance is formed. Name the compound and give the balanced chemical equation for the reaction. What do we call the reverse reaction to give back alcohol and carboxylic acid which is used in the preparation of soap ?

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15. With the help of an example, explain the process of hydrogenation. Mention the essential conditions

for the reaction and state the change in physical property with the formation of the product.

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16. What is the difference between the molecules of soaps and detergents, chemically ? Explain the deansing action of soaps.

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17. Write the name and structural formula of the compound formed when ethanol is heated at 443K

temperature with excess of conc. H_2SO_4. What is the role of conc. H_2SO_4 in this reaction ? Also give the chemical equation for the reaction.

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18. What are esters ? How they are prepared ? List two uses of esters.

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19. Draw the electron dot structure of ethyne. A mixture of ethyne and onygen is burnt for welding In

your opinion, why camalot we use a mixture of ethyne and air for this purpose.

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20. Write the chemical equations for the following chemical reactions and name the carbonic compound obtained.

(i) Reaction of acidified potassium dichromate solution with ethanol on heating.

(ii) Reaction of sodium metal with ethanol.

(iii) Reaction of concentrated sulphuric acid with ethanol at 443 K.

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21. Name the oxidising agents used for the conversion of ethanol to ethanoic acid. Distinguish between ethanol and ethanoic acid on the basis of (i) litmus test (ii) reaction with sodium carbonate.

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22. Complete the following equations :

(i) $CH_3COOC_2H_5 \xrightarrow{NaOH}$

(ii) $CH_3COOH + NaHCO_3 \rightarrow$

$CH_4CI_2 \overset{\text{Sunlight}}{r} i\hat{g}rrow$

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23. How are the following products obtained from ethanol ?

(i) Ethyl ethanoate

(ii) Sodium ethoxide.

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24. An organic compound of molecular formula C_2H_4 on reduction gives another compound B of molecular formula C_2H_6. B on reaction with chlorine in the presence of sunlight gives of molecular formula $C_2H(5)CI$.

(i) Name the compounds A, B and C.

(ii) Write the chemical equation for the conversion of A to B and name the a reactions.

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25. Two compounds 'A' and 'B' have the molecular formula C_3H_8 and C_3H_6 respectively. Which one of the two is most likely to show addition reactions? Justify your answer. Explain with the help of a chemical equation, how an addition reaction is useful in vegetable ghee industry.

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26. (i) Give a kherical test to distinguish between saturated and unsaturated hydrocarbons.

(ii) Name the products fornted when ethanol burns in air. List two forms of energy that are liberated on burning ethanol.

(iii) Why is the reaction between methane and chlorine considered a substitution reaction?

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27. An organic compound 'A' of molecular formula C_2H_6O on oxidation with dilute alkaline $KMnO_4$ solution gives an acid 'B' with the same number of

carbon atoms. Compound 'A' is often used for sterilization of skin by doctors.

(i) Name the compounds 'A' and 'B'.

(ii) Write the chemical equation involved in the formation of 'B' from 'A'.

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28. (i) Write chemical name and formula of Vinegar.

(ii) Describe with a chemical equations what happens when sodium reacts with ethanol.

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29. (i) Write the chemical names of $CH_3COCH_3, C_2H_5OH.$

(ii) What happens when acetic acid and ethanol react in presence of concentrated H_2SO_4 ? Write the reactions there in.

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30. Complete the following reactions :

(i) $CH_3CH_2OH \xrightarrow[KMnO_4+Heat]{\text{Alkaline}} ?$

(ii) $2Na + 2CH_3CH_2OH \rightarrow ? + ?$

(iii) $CH_3COOH + CH_3CH_2OH \xrightarrow{\text{acid}} ?$

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Topic Ii Carbon Compounds Soap And Detergents Long Answer Type Questions

1. (a) What is isomerism ? Name the isomers of butane.

(b) Name the air pollutant liberated during incomplete combustion of methane.

(c) Name the importance of hydrogenation of oils.

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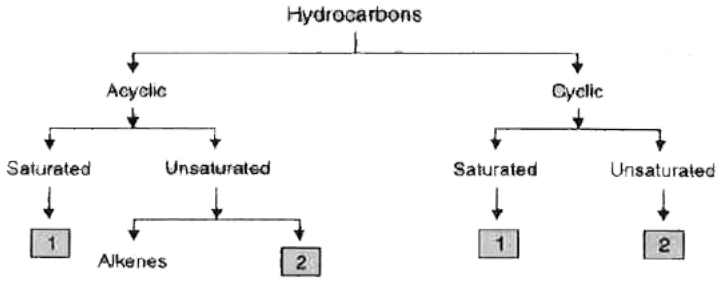
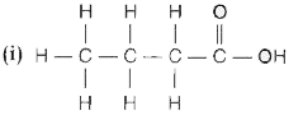
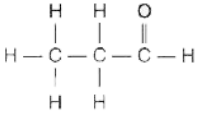
2. (a) The boxes given here with numbers 1, 2, 3 and 4 represent a class of hydrocarbons. Write the name of first member of that respective class according to

the numbers given.



(b) Name the functional group in the following structures of hydrocarbon compounds and name these hydrocarbon compounds :

(i) 

(ii) 

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3. (a) How will you bring about following reactions? Write the concerned chemical equations

(i) Ethanol to Ethene

(ii) Ethanol to Ethanoic acid

(b) Give one example with chemical equation for the following reactions :

(i) Substitution reaction

(ii) Combustion reaction

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4. Write balanced chemical equation for the following:

(i) Methane is burned in sufficient air

(ii) Ethanol is treated with sodium

(iii) Ethanoic acid is reacted with sodium hydroxide

(iv) Ethanoic acid is treated with sodium carbonate.

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5. (a) Complete the following equations :

(i) $CH_3COOH + KHCO_3 \xrightarrow{\text{Sunlight}}$

(ii) $CH_2 + Cl_2 \rightarrow$

(b) Write the name of the following:

(i) CH_3CH_2COOH

(ii) $CH_3CH_2CH_2Br.$

(c) Draw the electron dot structure of ethene $(C_2H_4).$

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6. (a) Complete the following equations :

(i) $nCH_2 = CH_2 \rightarrow \ldots\ldots\ldots$

(ii)

$CH_3COOH - NaHCO_3 \rightarrow \ldots\ldots + \ldots\ldots + \ldots\ldots$

(b) What is the cause of hardness of water? Why soap does not form lather with hard water? Mention the disadvantage of cleaning clothes with soap in hard water?

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7. (i) "Covalent compounds have low melting and boiling points". Justify this statement.

(ii) What is an ester ? Describe an activity to form an ester in a school laboratory.

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8. Describe the additon reaction of carbon compounds with its application. State the function of catalyst in this reaction. How this reaction is different from a substitution reaction?

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9. (i) You have three unlabelled test-tubes containing ethanol, ethanoic acid and soap solution. Explain the method you would use to identify the compounds in different test tubes by chemical tests using litmus paper and sodium metal.

(ii) Give the reason of formation of scum when soaps are used with hard water.

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10. A carbon compound on heating with excess cond. H_2SO_4 forms another carbon compound 'Q' which on addition of hydrogen in the presence of nickel

catalyst forms a saturated carbon compound 'R' One molecule of R on combustion forms two molecules of carbon dioxide and three molecules of water. Identify P, Q and R and write chemical equations for the reactions involved.

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11. Both soap and detergent are same type of salts. What is the difference between them ? Describe in brief the cleansing action of soap. Why do soaps not form lather in hard water?

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12. An organic compound A is widely used as a preservative in pickles and has a molecular formula $C_2H_4O_2$. This compound reacts with ethanol to form a sweet smelling compound B.

(i) Identify the compound A.

(ii) Write the chemical equation for its reaction with ethanol.

(iii) Name the products formed.

(iv) Name the process involved in the reaction.

(v) How can we get back the compou A from B.

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13. Make the structure of methane by showing sharing of electrons between carbon and hydrogen atoms. How could you convert methane into chloroform by substitution reaction Explain with the help of chemical reactions.

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14. (i) Write the name of the following compounds.

CH_3CH_2COOH, C_6H_6

(ii) What is a homologous series ? Write the formula of functional group of ketone and aldehyde.

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15. An organic compound is widely used as a preservative in pickles and has a molecular formula $C_2H_4O_2$. The compound reacts with ethanol in presence of an acid to form a sweet smelling compound 'B'.

(i) Identify the compound 'A'.

(ii) Write the chemical equation for its reaction with ethanol to form compound 'B'.

(iii) How can you get 'A back from 'B'?

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Ncert Corner Intext Questions

1. What would be electron dot structure of carbon dioxide which has the formula CO_2?

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2. What would be the electron dot structure of a molecule of sulphur which is made up of eight atoms of Silnhur ?

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3. How many structural isomers can you draw for pentane ?

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4. What are the two properties of carbon which lead to the huge number of carbon compounds we see around us?

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5. What will be the formula and electron dot structure of cyclopentane?

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6. Draw the structures for the following compounds.

(i) Ethanoic acid

(ii) Bromo pentane

(iii) Butanone

(iv) Hexanal

Are structural isomers possible for bromo- pentane?

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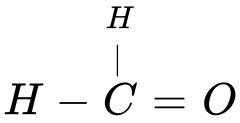
7. How would you name the following compounds ?

(i) $CH_3 - CH_2 - Br$

(ii)



(iii) $CH_3 - CH_2 - CH_2 - CH_2 - C \equiv CH_2$

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8. Why is the conversion of ethanol to ethanoic acid an oxidation reaction?

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9. A mixture of oxygen and ethyne is burnt for welding . Can you tell why a mixture of ethyne and

air is not used ?

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10. How would you distinguish experimentally between an alcohol and a carhoxylic acid?

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11. What are oxidising agents ?

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12. Would you be able to check if water is hard by using a detergent?

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13. People use a variety of methods to wash clothes, Usually after adding the soap, they 'beat' the clothes ona stone or beat it with a paddle scrub with a brush or the mixture is agitated in a washing machine. Why is agitation necessary to be clean clothes?

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Ncert Corner Textbook Exercises

1. Ethane with the molecular formula C_2H_6 has

A. 6 covalent bonds

B. 7 covalent bonds

C. 8 covalent bonds

D. 9 covalent bonds

Answer: A::B::C::D

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2. Butanone is a four-carbon compound with the functional group

A. Carboxylic group

B. Aldehyde

C. Ketone

D. Alcohol

Answer: C

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3. While cooking, if the bottom of the vessel is getting blackened on the outside, it means that

A. food is not cooked completely

B. the fuel is not burning completely

C. the fuel is wet

D. the fuel is burning completely

Answer: C::D

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4. Explain the nature of the covalent bond using the bond formation in CH_2Cl

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5. Draw the electron-dot structure for

(i) Ethanoic acid (ii) H_2S (iii) propanone (iv) F_2

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6. What is a homologous series? Explain with an example.

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7. How can ethanol and ethanoic acid be differentiated on the basis of their physical and chemical properties?

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8. Why does micelle formation take place when soap is added to water? Will a micelle be formed in other solvents such as ethanol also?

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9. Why are carbon and its compounds used as fuels for most applications?

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10. Explain the formation of scum when hard water is treated with soap

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11. What change will you obsenre if you test soap with litmus paper (red and blue)?

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12. What is hydrogenation ? What is its industrial application ?

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13. Which of the following hydrocarbon undergo addition reactions ?

$C_2H_6, C_3H_8, C_3H_6, C_2H_2$ and CH_4

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14. Give a test that can be used to differentiate chemically between butter and cooking oil.

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15. Explain the mechanism of the cleaning action of soaps.

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