# CHEMISTRY

## BOOKS - MODERN PUBLICATION

## CARBON AND ITS COMPOUNDS

**Example**

**1.** Write the formula of two homologous lower and one higher of propane $(C_3H_8)$.

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**2.** Give the general name of the class of compound having the general formula $C_nH_{2n-2}$. Write name of first member of the homologous series.

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**3.** Classify the following compound as alkanes, alkenes or alkynes:

$C_2H_2, C_2H_6, C_2H_4$ and $C_3H_8$

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**4.** Give the general formula of alkynes. Identify the alkynes from the folowing:

$CH_4, C_2H_6, C_2H_2, C_3H_4, C_2H_4$

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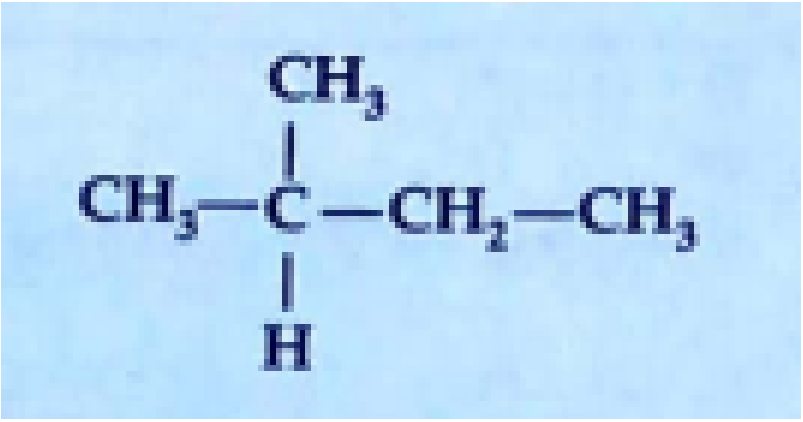
**5.** Name the compound



according to IUPAC system.

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**6.** Write the structure formulae of two types of butanes having the molecular formula $C_4H_{10}$. Write their common names and IUPAC names.

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**7.** Write the molecular formulae of an alkane and an alkene with twenty carbon atoms.

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**8.** Which of the following belong to same homologous series?

$C_3H_8, C_3H_6, C_4H_8, C_4H_6.$

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**9.** Write the structural formulae for

2-Methyl-2butene

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**10.** Write IUPAC names of the following compounds.

$CH_3CH_2COOH$

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**11.** Write IUPAC names of the following compounds.

$CH_3CHO$

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**12.** Write IUPAC names of the following compounds.

$$\underset{Cl}{\overset{CH_3}{|}}\ CHCH_3$$

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**13.** Write IUPAC names of the following compounds.

$$\underset{OH}{\overset{CH_3}{|}}\ CHCH_3$$

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**14.** Write the formulae of following compounds:

Butanoic acid.

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**15.** Write the formulae of following compounds:

2-Brompropane

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**16.** Write the formulae of following compounds:

Propanone

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**17.** Write the formulae of following compounds:

Methanol.

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**18.** Write the formulae of following compounds:

Ethanol

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**19.** Which of the following has a branched chain?

Iso-butane.

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**20.** Which of the following has a branched chain?

n-butane.

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**21.** A compound X has molecular formula $C_3H_6$. One mole of X reacts with one mole of bromine to yield a compound Y. Deduce the structures of X and Y.

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**22.** How can you establish that all the four hydrogen atoms of a methane molecular are equivaent?

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**23.** Which of the following compounds would give addition reactions:

$C_2H_6$, $C_3H_8$, $C_3H_6$, $C_2H_2$, $CH_4$ and $C_3H_4$.

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**24.** Write chemical equations for the reaction of ethanoic acid with

sodium carbonate

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**25.** Write chemical equations for the reaction of ethanoic acid with

potassium.

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**26.** Write chemical equations for the reaction of ethanoic acid with

soda lime

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**27.** Write chemical equations for the reaction of ethanoic acid with

ethanol in the presence of conc. $H_2SO_4$.

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**28.** An organic compound A of molecular formula $C_2H_6O$ on oxidation gives an acid B with the same number of carbon atoms in a molecules as A. compound A is often used for sterilisation of skin by doctors. Name the compound A and B. Write the chemical equations involved in the formation of B from A.

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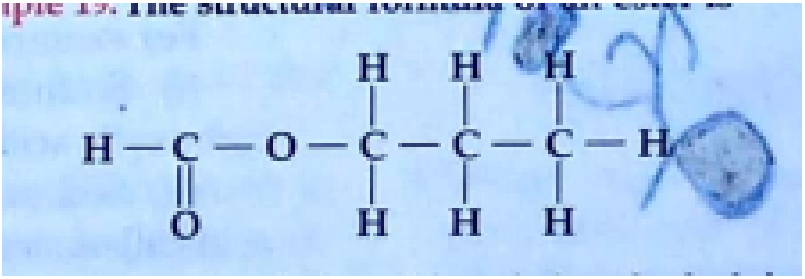
**29.** The structural formula of an ester is



Write the formula of the acid and the alcohol from which is it formed.

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**30.** Compare the following properties of ethanol and ethanoic acid:

Litmus test

Sodium metal reaction

Sodium bicarbonate test?

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

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

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**33.** How many structural isomers can you draw for pentane?

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

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

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**36.** Draw the structures for the following compounds:

Ethanoic acid.

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**37.** Draw the structures for the following compounds:

Bromopentane*

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**38.** Draw the structures for the following compounds:

Butanone

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**39.** Draw the sturctures for following compounds: Hexanal

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**40.** How would you name the following compounds?

$CH_3 - CH_2 - Br$

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**41.** How would you name the following compound ?

$$H - \overset{H}{\underset{|}{C}} = O$$

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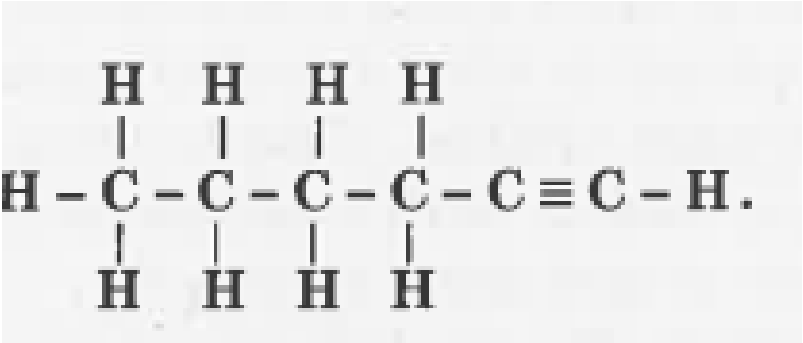
**42.** How would you name the following compounds?



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

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**44.** A mixture of oxygen and ethyne is brunt for welding. can you tell why a mixture of ethyne and air is not used?

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**45.** How would you distinguish experimentally between an alcohol and a carboxylic acid?

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**46.** What are oxidising agents?

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**47.** Would you be able to check if water is hard using a detergent?

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**48.** People use variety of methods to wash clothes usually after adding the soap. they beat the clothes on a stone or beat it with a paddle, scrub with a brush or the mixture is agitated in a washing machine. why agitation is necessary to get clean clothes clothes?

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**49.** Ethane, with the molecular formula $C_2\ H_6$ has:

A. 6 covalent bonds

B. 7 covalent bonds

C. 8 covalent bonds

D. 9 covalent bonds

**Answer:**

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**50.** Butanone is a four- carbon compound with the functional group:

A. carboxylic acid

B. aldehyde

C. ketone

D. alcohol

**Answer:**

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**51.** While cooking, if the bottom of the vesel is getting blackened on the outside, it means that:

A. the food is not cooked completely

B. the fuel is not burning completely

C. the fuel is wet

D. the fuel is burning completely.

**Answer:**

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**52.** Explain the nature of the covalent bond using the bond formation in $CH_3$ Cl

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**53.** Draw the electron dot structures for: ethanoic acid.

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**54.** Draw the electron dot structures for: $H_2S$

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**55.** Draw the electron dot structures for: propanone

Watch Video Solution

**56.** Draw the electron dot structures for: $F_2$

Watch Video Solution

**57.** What is an homologous series: explain with an example.

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

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**59.** 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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**60.** Why are carbon and its compounds used as fuels for most application?

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

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**62.** What change will you observe if you test soap with litmus paper?

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**63.** What is hydrogenation? what is its industrial application?

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**64.** Which of the following hydrocarbons undergo addition reaction : $C_2H_6$,$C_3$H_8, C_3$H_6$, C_2$H_2$ and `CH_4.

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**65.** Give a test that can be used to differentiate between butter and cooking oil.

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**66.** Explain the mechanism of the cleansing action of soaps

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**67.** Draw the electron dot structure of ethyne and also draw it structural formula.

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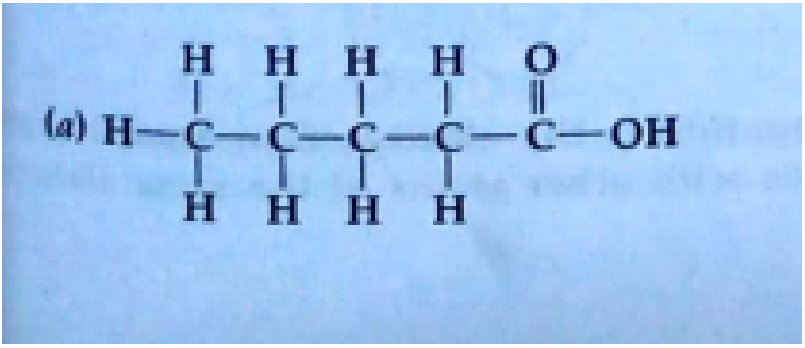
**68.** Write the names of the following compounds:

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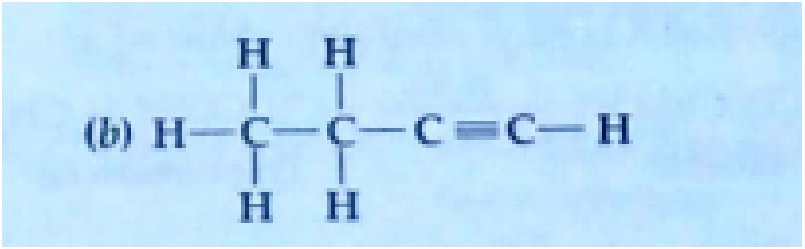
**69.** Write the names of the following compounds:

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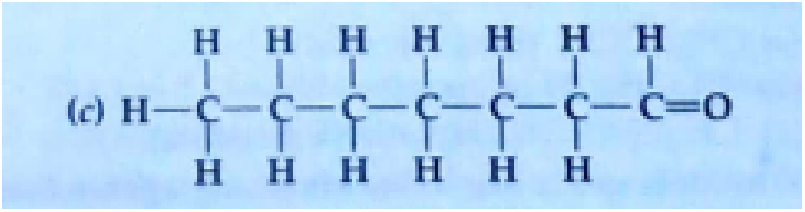
**70.** Write the names of the following compounds:

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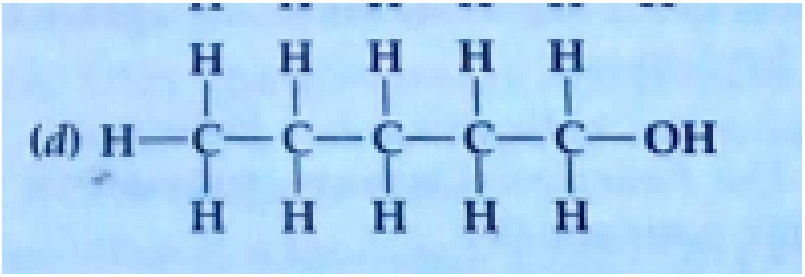
**71.** Write the names of the following compounds:

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**72.** Identify and name the functional groups present in the following compounds

$$H-\underset{H}{\overset{H}{C}}-\underset{H}{\overset{H}{C}}-\underset{H}{\overset{H}{C}}-OH$$

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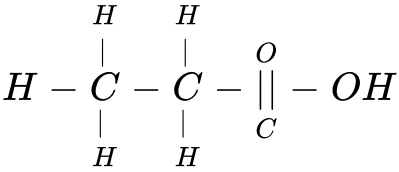
**73.** Identify and name the functional groups present in the following compounds



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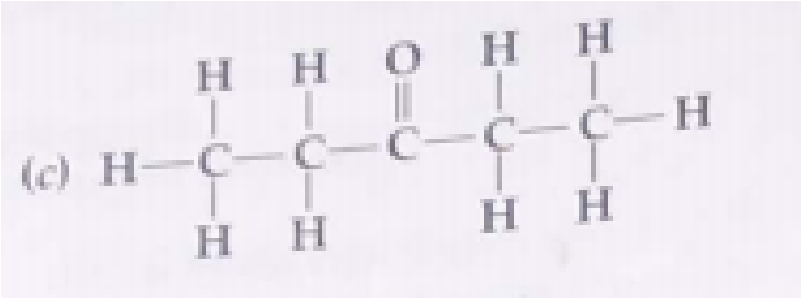
**74.** Identify and name the functional groups present in the following compounds



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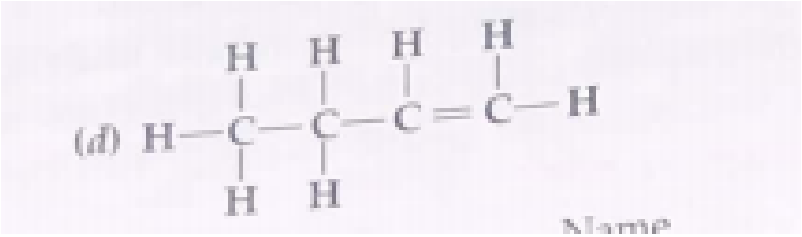
**75.** Identify and name the functional groups present in the following compounds



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**76.** A compound X is formed by the reaciton of a cabroxylic acid $C_2H_4O_2$ and an alcohol in presence of a few drops of $H_2SO_4$. The alcohol on oxidation with alkaline $KMnO_4$ followed by acidification gives the same carboxylic acid as used in this reaction. give the names and structures of carboxylic acid. Also write the reaction.

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**77.** A compound X is formed by the reaciton of a cabroxylic acid $C_2H_4O_2$ and an alcohol in presence of a few drops of $H_2SO_4$. The alcohol on oxidation with alkaline $KMnO_4$ followed by acidification gives the same carboxylic acid as used in this reaction. give the names and structures of alcohol. Also write the reaction.

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**78.** A compound X is formed by the reaciton of a cabroxylic acid $C_2H_4O_2$ and an alcohol in presence of a few drops of $H_2SO_4$. The alcohol on oxidation with alkaline $KMnO_4$ followed by acidification gives the same carboxylic acid as used in this reaction. give the names and structures of the compound X. Also write the reaction.

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**79.** Why detergents are better cleanising agenets than soaps? Explain.

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**80.** Name the functional groupus present in the following compounds:

$CH_3COCH_2CH_2CH_2CH_3$

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**81.** Name the functional groupus present in the following compounds:

$CH_3CH_2CH_2COOH$

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**82.** Name the functional groupus present in the following compounds:

$CH_3CH_2CH_2CH_2CHO$

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**83.** Name the functional groupus present in the following compounds:

$CH_3CH_2OH$

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**84.** How is ethene prepared from ethanol? Give the reaction involved in it.

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**85.** Intake of small quantity of methanol can be lethal. Comment.

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**86.** A gas is evolved when ethanol reacts with sodium. Name the gas evolved and also write the balanced chemical equations of the reaction involved.

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**87.** Ethene is formed when ethanol at 443 K is heated with excess of concentrated sulphuric acid. What is the role of sulphuric acid in this reaction? Write the balanced chemical equations of this reaction.

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**88.** Carbon, Groups elements in the periodic table, is known to form compounds with many elements. Write an example of a compound formed with

chlorine (Group 17 of Periodic table)

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**89.** Carbon, Groups elements in the periodic table, is known to form compounds with many elements. Write an example of a compound formed with

oxygen (Group 16 of Periodic table)

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**90.** In electron dot structure, the valence shell electrons are represent by crosses or dots.

The atomic number of chlorine is 17. Write its electric configuration.

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**91.** In electron dot structure, the valence shell electrons are represent by crosses or dots.

Draw the electron dot structure of chlorine molecule.

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**92.** Catenation is the ability of an atom to form bonds with other atoms of the same elements. It is exhibited by both carbon and silicon. Compre the ability of catenation of the two elements. Give reasons.

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**93.** Unsaturated hydrocabons contains multiple bonds between the two C-atoms and show addition reaction. Give

the test to distinguish ethane from ethene.

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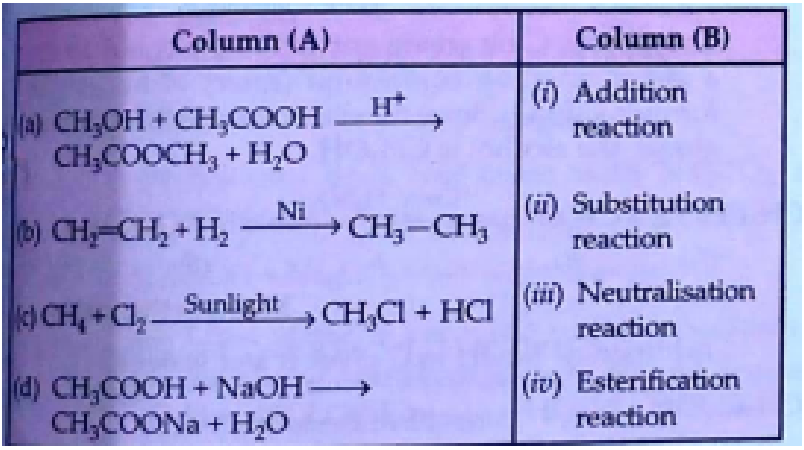
**94.** Match the reactions given in Column A with the names given in column B.



| Column (A) | Column (B) |
|---|---|
| (a) $CH_3OH + CH_3COOH \xrightarrow{H^+} CH_3COOCH_3 + H_2O$ | (i) Addition reaction |
| (b) $CH_2=CH_2 + H_2 \xrightarrow{Ni} CH_3-CH_3$ | (ii) Substitution reaction |
| (c) $CH_4 + Cl_2 \xrightarrow{Sunlight} CH_3Cl + HCl$ | (iii) Neutralisation reaction |
| (d) $CH_3COOH + NaOH \longrightarrow CH_3COONa + H_2O$ | (iv) Esterification reaction |

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**95.** Write the structural formulae of all the isomers of hexane.

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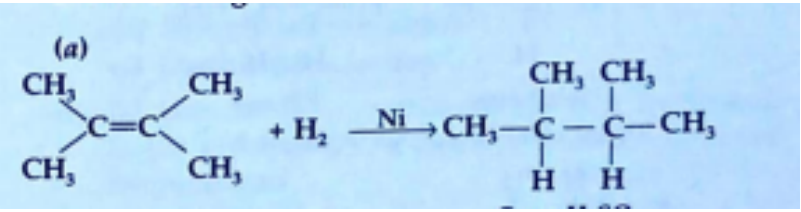
**96.** What is the role of metal of reagents written on arrows in the given chemical reaction:

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**97.** What is the role of metal of reagents written on arrows in the given chemical reaction:

$$CH_3COOH + CH_3CH_2OH \xrightarrow[Heat]{dil.\ H_2SO_4} CH_3COOC_3H_5 + H_2O$$

.

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**98.** What is the role of metal of reagents written on arrows in the given chemical reaction:

$$CH_3CH_2OH \xrightarrow[Heat]{Alk.\ KMnO_4} CH_3COOH.$$

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**99.** A salt X is formed and a gas is evolved when ethanoic acid reacts with sodium hydrogen carbonate. Name the salt X and the gas evolved. Also, write chemical equations of the reaction involved.

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**100.** What are hydrocabons? Give examples.

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**101.** Give the structural differences between saturated and unsaturated hydrocarbons with two examples each.

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**102.** What is the functional group? Give examples of four different functional groups.

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**103.** Name the reaction which is commonly used in the conversion of vegetable oils to fats. Explain the reaction involved in details.

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**104.** Write the formula and draw electron dot structure of carbon tetrachloride.

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**105.** What is saponification? Write the reaction involved in this process.

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**106.** Esters are sweet smelling substances and are used in making perfumes. Write the reaction involved for the preparatoin of an ester Name the reaction

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**107.** A compound C reacts with Na metal to form a compound R and evolves a gas which burns with a pop sound. Compound C on the treatment with an alcohol A in presence of an acid from a sweet smelling compound S(molecular formula, $C_3H_6O_2$). On addition of NaOH to C it also gives R and water. compound S on treatment with NaOH solution gives back R and A.

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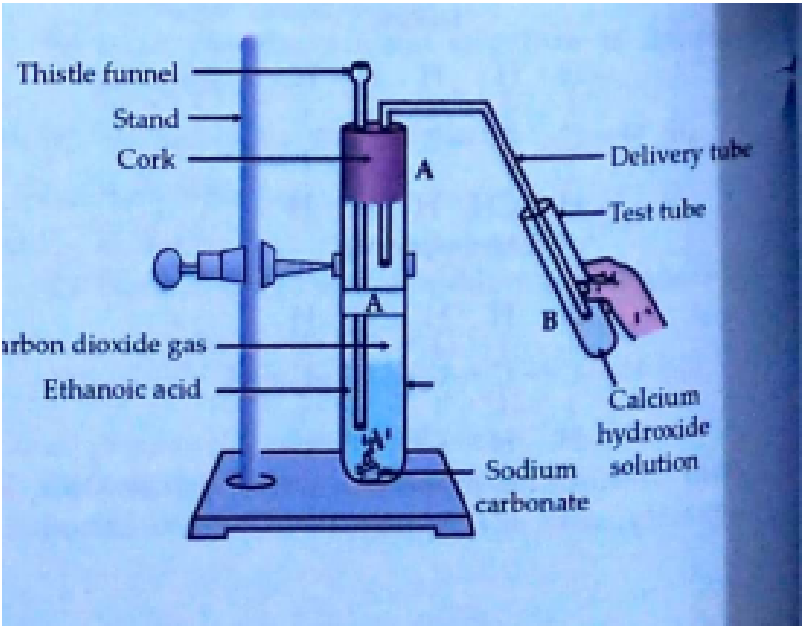
**108.** Look at the figure and answer the following questions:




What change would you observe in the calcium hydroxide solution taken in tube B?

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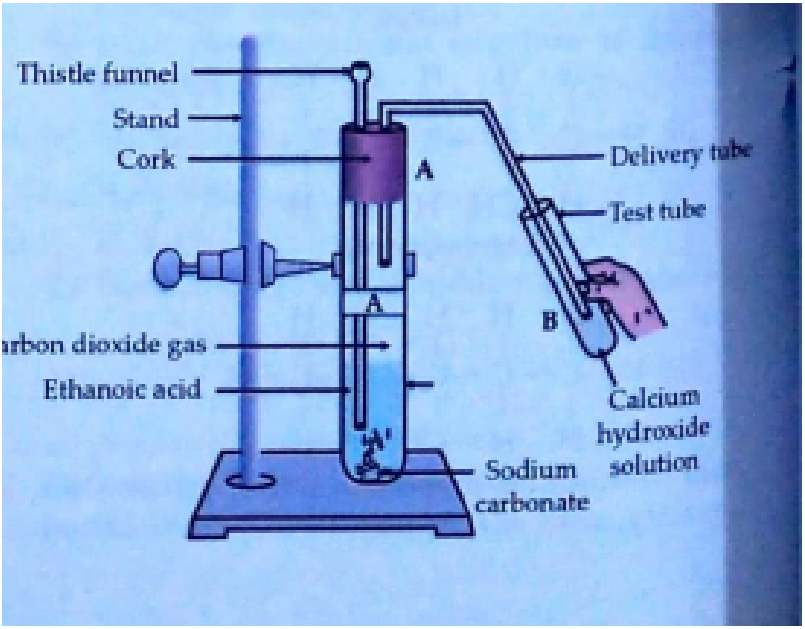
**109.** Look at the figure and answer the following questions:




Write the reaction involved in test tubes A and B respectively.

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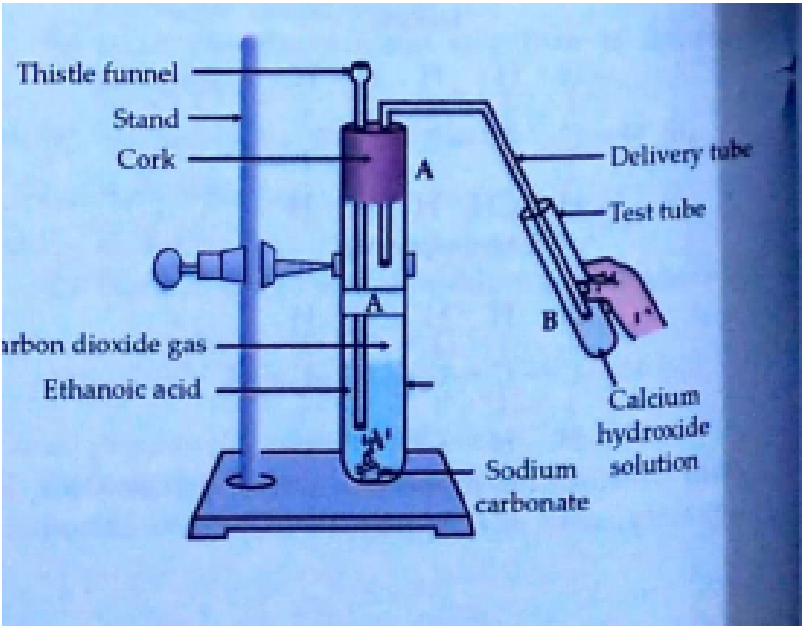
**110.** Look at the figure and answer the following questions:




If ethanol is given instead of ethanoic acid, would you expect the same change?

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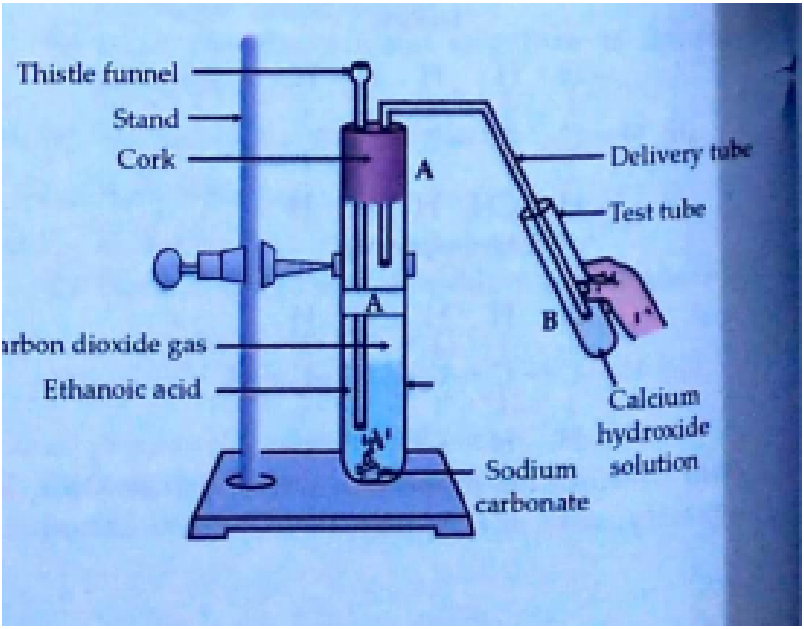
**111.** Look at the figure and answer the following questions:




How can a solution of lime water be prepared in the laboratory.

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**112.** How would you bring about the following conversoin? Name the process and the write the reaction involved.

ethanol to ethene.

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**113.** How would you bring about the following conversoin? Name the process and the write the reaction involved.

propanol to propanoic acid. Write this reactions.

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**114.** Draw the possible isomers of the compound with molecular formula $C_3H_6O$ and also give their electron dot structure.

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**115.** Explain the given reactions with the examples.

Hydrogenation reaction.

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**116.** Explain the given reactions with the examples.

Oxidation reaction.

Watch Video Solution

**117.** Explain the given reactions with the examples.

Substitution reaction.

Watch Video Solution

**118.** Explain the given reactions with the examples.

Saponification reaction.

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**119.** Explain the given reactions with the examples.

Combustion reaction.

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**120.** An organic compound A on heating with concentrated $H_2SO_4$ forms a compound B which on addition of one mole of hydrogen in presence of Ni forms a compound C. One mole of compound C on combustion forms two moles of

$CO_2$and 3 moles of $H_2O$. Identify the compounds A, B and C and write the chemical equations of the reactions involved.

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**121.** Complete the following equations:

$CH_4 + O_2 \rightarrow$

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**122.** Complete the following equations:

$CH_3COOH + C_2H_5OH \xrightarrow{Acid}$

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**123.** Complete the following reactions:

$$CH_3CH_2OH \xrightarrow[443K]{Conc.\,H_2SO_4}$$

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**124.** Write the IUPAC name of the next homologous of $CH_3OH$ and $CH_2 = CH_2$.

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**125.** Define homologous series of organic compounds. Mention any two characterstics of homologous series.

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**126.** Name the compound formed on heating ethanol at 443K with excess of conc. $H_2SO_4$.

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**127.** Describe a chemical test to distinguish between ethanol and ethenoic acid.

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**128.** Write the name and formula of the second member of the carbon compounds having the functional group -OH.

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**129.** Write the name and formula of the first member of the carbon compounds having functional group -COOH.

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**130.** Write the name and formula of the first member of the carbon compounds having the funcitonal group -CHO.

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**131.** Name the functional group present in each of the following compounds:

$CH_3COCH_3$.

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**132.** Name the functional group present in each of the following compounds:

$C_2H_5COOH.$

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**133.** What is meant by homologous series of organic componds? Write the chemical formula of two membres of a homologous series and state which part determines the physical properties

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**134.** What is meant by homologous series of organic componds? Write the chemical formula of two membres of a

homologous series and state which part determines the chemical properties of these compounds.

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**135.** Complete the following reactions:

$CH_4 + O_2 \rightarrow$

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**136.** Complete the following reactions:

$C_2H_5OH \xrightarrow{Hotconc.H_2SO_4}$

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**137.** Complete the following reactions:

$CH_3COOH + NaOH \rightarrow$

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**138.** What are hydrocarbons? Write the name and general formula of

saturated hydrocarbons

unstaturated hydrocarbons and draw the structure of one hydrocarbon of each type. How can an unsaturated hydrocarbon be made saturated?

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**139.** What are detergents chemicaly? List two merits and two demerits of using detergents for cleanising. State the reason for the suitability of detergents for washing, even in the case of water having calcium and a magnesium ions.

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**140.** What is the difference between the chemical composition of soaps and detergents?

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**141.** List in tabular form three physical on the basis of which ethanol and ethanoic acid can be differentiated.

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**142.** Complete the reaction given below and classify them as combustion/oxidation/addition/substitution reaction:

$$CH_3CH_2CH_2OH \xrightarrow[heat]{alkal \in eKMnO_4}$$

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**143.** Complete the reaction given below and classify them as combustion/oxidation/addition/substitution reaction:

$$C_2H_4 + H_2 \xrightarrow{Ni - catalyst}$$

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**144.** Write the name and the structural formula of the compound formed when ethanol is heated at 443K with excess of conc. $H_2SO_4$. State the role of conc. $H_2SO_4$ in this reaction. Write the chemical equaitons for the reaction.

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**145.** Define the term isomers.

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**146.** Draw two possible isomers of the compound with molecular formula $C_3H_6O$ and write their names.

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**147.** Give the electron dot structures of the compounds.

propanone

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**148.** Name the oxidising agent used for the conversion of ethanol to ethanoic acid. Distinguish between ethanol and ethanoic acid on the basis of

litmus test

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**149.** Name the oxidising agent used for the conversion of ethanol to ethanoic acid. Distinguish between ethanol and

ethanoic acid on the basis of

reaction with sodium carbonate.

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**150.** Differentiate between alkanes and alkenes.

Watch Video Solution

**151.** Alkanes generally burn with clean flame, why?

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**152.** What happen when

ethanol is burnt in air.

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**153.** What happen when

ethanol is heated with excess conc. $H_2SO_4$ at 443K

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**154.** What happen when

a piece of sodium is dropped in ethanol?

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**155.** A carboxylic acid $C_2H_4O_2$ reacts with an alcohol in the presence of $H_2SO_4$ to form a compound X. Write the name

and structure of

carboxlic acid.

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**156.** A carboxylic acid $C_2H_4O_2$ reacts with an alcohol in the presence of $H_2SO_4$ to form a compound X. Write the name and structure of

alcohol ?

Watch Video Solution

**157.** A compound X is formed by the reaciton of a cabroxylic acid $C_2H_4O_2$ and an alcohol in presence of a few drops of $H_2SO_4$. The alcohol on oxidation with alkaline $KMnO_4$

followed by acidification gives the same carboxylic acid as used in this reaction. give the names and structures of the compound X. Also write the reaction.

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**158.** We cannot have isomers of first three members of alkane series. Give reasons to justify this statement. Draw the structures of two isomers of pentane, $C_5H_{12}$.

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**159.** What is meant by homologous series of organic componds? Write the chemical formula of two membres of a

homologous series and state which part determines the physical properties

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**160.** What is meant by homologous series of organic componds? Write the chemical formula of two membres of a homologous series and state which part determines the chemical properties of these compounds.

Watch Video Solution

**161.** State the meaning of functional group in a carbon compound. Write the functional group in ethanol and also draw their structures.

Watch Video Solution

**162.** State the meaning of functional group in a carbon compound. Write the functional group in

ethanoic acid and also draw their structures.

Watch Video Solution

**163.** Write the name and formula of second member of homologous series having the general formula $C_nH_{2n}$.

Watch Video Solution

**164.** With the help of an example, explain the process of hydrogenation. Mention the essential conditons for the

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

Watch Video Solution

**165.** What is the difference between the molecules of soaps and detergents chemically? Explain the cleanising action of soaps.

Watch Video Solution

**166.** Write the name and formula of the 2nd member of the homoglous series having general formula $C_nH_{2n+2}$.

Watch Video Solution

**167.** Write the number of covalent bonds in the molecule of ethane.

Watch Video Solution

**168.** List two tests for experimentally distinguish between an alcohol and a carboxylic acid and describe how tests are performed.

Watch Video Solution

**169.** Draw the electron dot strucutre for ethyne. A mixture of ethyne and oxygen is burnt for welding. In your opinion why cannot we use a mixture of ethyne and air is this purpose?

Watch Video Solution

**170.** Why do soaps not from the lather in hard water? List two problems that arise due to the use of detergents instead of soaps.

Watch Video Solution

**171.** Write the name and formula of the 2nd member of the homoglous series having general formula $C_nH_{2n+2}$.

Watch Video Solution

**172.** Classify the following carbon compounds into two homologous series and name them.

$C_3H_8, C_3H_6, C_4H_{10}, C_4H_8, C_5H_{12}, C_5H_{10}$

Watch Video Solution

**173.** Write the number of covalent bonds in the molecule of butane $C_4H_{10}$.

Watch Video Solution

**174.** Write the name and general formula of a chain of hydrocarbons in which an addition reaciton with hydrogen is possible. State the essential conditon for an additon reaction. Stating this conditons, write a chemical equation of giving the name of the reactant and the product of the reaction.

Watch Video Solution

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

Watch Video Solution

**176.** Write chemical equation of the reacton of ethanoic acid with the following:

Sodium. Write the name of one main product of each reaction.

Watch Video Solution

**177.** Write chemical equation of the reacton of ethanoic acid with the following:

Sodium hydroxide . Write the name of one main product of each reaction.

Watch Video Solution

**178.** Write chemical equation of the reacton of ethanoic acid with the following:

Ethanol. Write the name of one main product of each reaction.

Watch Video Solution

**179.** An aldehyde as well as a ketone can be represented by the same molecular formula $C_3H_6O$. Write their structures and the name them. State the relation between the two in the language of science.

Watch Video Solution

**180.** A carbon compound P on heating with excess conc. $H_2SO_4$ forms another carbon compound Q which on addition of hydrogen in the presence of nickel catalyst forms a saturated compound R. One mole of 'R' on combustion forms two molecules of carbon dioxide and three molecules of water. identify P,Q and R and write the chemical equations for the reactions involved.

Watch Video Solution

**181.** Write the name and structure of an alcohol with four carbon atoms in its molecules.

Watch Video Solution

**182.** Write the names and structure of an aldehyde with four carbon atoms in its molecules.

Watch Video Solution

**183.** Write three different reactions showing the conversion of ethanoic acid to sodium ethanoate. Write balanaced equation in each case. Write the name of the reactants and

the products other than ethanoic acid and sodium ethanoate in each case.

Watch Video Solution

**184.** Write the next homologous of each of the following:

$C_2H_4$?

Watch Video Solution

**185.** Write the next homologous of each of the following:

$C_4H_6$?

Watch Video Solution

**186.** When ethanol reacts with ethanoic aid in the presence of conc. $H_2SO_4$ a solution a substance with fruity smell is produced. Answer the following:

State the class of compound to which the fruity smelling compounds belong. Write the chemical equaton for the reaction and write the chemical name of the produce formed.

Watch Video Solution

**187.** When ethanol reacts with ethanoic aid in the presence of conc. $H_2SO_4$ a solution a substance with fruity smell is produced. Answer the following:

State the role of conc. $H_2SO_4$ in the reaction.

Watch Video Solution

**188.** Give a chemical test to distinguish between satruated and unsaturated hydrocarbons.

Watch Video Solution

**189.** Name the products formed when ethane burns in the air. Write a balanced chamical equation for the reaction showing the type of energies liberated.

Watch Video Solution

**190.** Why is the reaction between methane and chlorine in the presence of sunlight considered a substitution reaction?

Watch Video Solution

**191.** Select saturated hydrocarbons form the following:

$C_3H_6, C_5H_{10}, C_4H_{10}, C_6H_{12}, C_2H_4$

Watch Video Solution

**192.** Name the compound formed when ethanol is heated in excess of conc. Sulphuric acid at 443K. Also write the chemical equaton of the reaction stating the role of conc. Sulphuric acid in it. What would happen if hydrogen is added to the product of this reaction in the presence of catalysts such as palladium or nickel?

Watch Video Solution

**193.** Name the following compounds:

$CH_3 - CH_2 - OH$

Watch Video Solution

**194.** Name the following compounds:

$$CH_3 - \overset{H}{\underset{C}{|}} = O$$

Watch Video Solution

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

Watch Video Solution

**196.** Two compounds 'A' and 'B' have the same molecular formula $C_6H_{12}$, compound 'A' is saturated, while compound 'B' is unsaturated. Draw their structures. What type of reactions compounds 'A' and 'B' are ecpected to undergo?

Watch Video Solution

**197.** Give one example of each of the following:

An organic compound of three carbon atoms with one triple bond.

Watch Video Solution

**198.** Give one example of each of the following:

An organic compound of four cabron atoms with a double bond.

Watch Video Solution

**199.** Give one example of each of the following:

A carboxylic acid contianing only one carbon atom.

Watch Video Solution

**200.** Give one example of each of the following:

An isomer of butane which has branched chain.

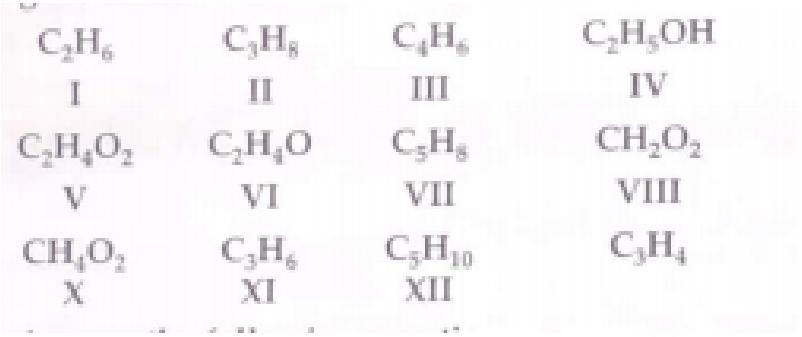
Watch Video Solution

**201.** Give one example of each of the following:

An organic compound of molecular formula $C_3H_6$ which is not alkane.

Watch Video Solution

**202.** The formulae of some oraganic compounds are given below:




Which of these are carboxylic acids?

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**203.** A sweet smelling compound A has moelcular formula $C_4H_8O_2$. On hydrolysis with dil. $H_2SO_4$, A gives two compunds B and C. Compound B on oxidation with $K_2Cr_2\frac{O_7}{H_2}SO_4$ gives C. Identify A,B and C.

Watch Video Solution

**204.** An organic compound 'A' is widely used s a preservative in pickels and has a molecular formula $C_2H_4O_2$. The compound reacts with ethanol to form a sweet smelling compound 'B'

Identify the compound 'A'.

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**205.** An organic compound 'A' is widely used s a preservative in pickels and has a molecular formula $C_2H_4O_2$. The compound reacts with ethanol to form a sweet smelling compound 'B'

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

Watch Video Solution

**206.** An organic compound 'A' is widely used s a preservative in pickels and has a molecular formula $C_2H_4O_2$. The compound reacts with ethanol to form a sweet smelling compound 'B'

Which gas is produced when compound 'A' reacts with washing soda. Write the chemical equation.

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**207.** The molecular formula of an organic compound A is $C_2H_4O_2$. It has vinegar like smell

Identify the compound A.

Watch Video Solution

**208.** The molecular formula of an organic compound A is $C_2H_4O_2$. It has vinegar like smell

Write its chemical formula and IUPAC name.

Watch Video Solution

**209.** The molecular formula of an organic compound A is $C_2H_4O_2$. It has vinegar like smell

Which gas is obtained when a pinch of sodium bicarbonate is added to it?

Watch Video Solution

**210.** The molecular formula of an organic compound A is $C_2H_4O_2$. It has vinegar like smell

Name the compound 'B' from which it is obtained by oxidation.

Watch Video Solution

**211.** The molecular formula of an organic compound A is $C_2H_4O_2$. It has vinegar like smell

Write its reaction with 'B' ethanol

Watch Video Solution

**212.** A compound C reacts with Na metal to form a compound R and evolves a gas which burns with a pop sound. Compound C on the treatment with an alcohol A in presence of an acid from a sweet smelling compound S(molecular formula, $C_3H_6O_2$). On addition of NaOH to C it also gives R and water. compound S on treatment with NaOH solution gives back R and A.

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## Exercise

**1.** Write the chemicla formula of the simplest hydrocarbon.

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**2.** Select alkenes and alkynes from the following list of hydrocarbons:

$C_6H_6, C_3H_4, C_2H_4, CH_4, C_4H_8, C_5H_8$

Watch Video Solution

**3.** Give two examples of each of

saturated hydrocabons.

Watch Video Solution

**4.** Give two examples of each of

unsaturated hydrocarbons.

Watch Video Solution

**5.** Give IUPAC names of the following compounds:

$$CH_3 - \underset{CH_2}{\overset{C}{||}} - CH_3$$

Watch Video Solution

**6.** Give IUPAC names of the following compounds:

$$CH_3 - C \equiv C - CH_3$$

Watch Video Solution

**7.** Write the structural formula of each of the following compounds:

2-Methylbutane

Watch Video Solution

**8.** Write the structural formula of each of the following compounds:

2-Methyl-1-butene

Watch Video Solution

**9.** Write the structural formulae of neo-pentane and iso-pentane. Give their IUPAC names.

Watch Video Solution

**10.** Draw the structural isomers of the two isomers of butane.

Watch Video Solution

**11.** Write the IUPAC names of the following:

$CH_3COOH$

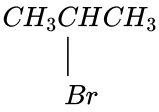
Watch Video Solution

**12.** Write the IUPAC names of the following:

$CH_3CH_2CH_2OH$

Watch Video Solution

**13.** Write the IUPAC names of the following:



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**14.** Complete the following statements:

$C_nH_{2n}$ is the general formula of.....hydrocarbons.

Watch Video Solution

**15.** Complete the following statements:

Hydrocarbons having the general formula $C_nH_{2n-2}$ are called.....

Watch Video Solution

**16.** Complete the following statements:

The next highe homologue of ethane is..... .

Watch Video Solution

**17.** Complete the following statements:

The compound $C_3H_6$ and $C_4H_8$ belong to homologous series of..... .

Watch Video Solution

**18.** Complete the following statements:

Ethene and ethyne are examples of.....hydrocabons.

Watch Video Solution

**19.** Complete the following statements:

In the saturated compound $CH_2 = CH_2$, the valency of carbon is..... .

Watch Video Solution

**20.** Answer the following:

How many hydogen atoms are in n-alkane with 8 carbon atoms?

Watch Video Solution

**21.** Answer the following:

How many carbon atoms are in an n-alkane with 24 hydrogen atom?

Watch Video Solution

**22.** Write the structural formulae of two compounds having molecular formula $C_4H_8$. Give their IUPAC names.

Watch Video Solution

**23.** Is there an n-alkane containing 23 hydrogen atoms. If so give its structural formula, if not explain why?

Watch Video Solution

**24.** Give the structural formulae and IUPAC name of second member of alkenes.

Watch Video Solution

**25.** Give the structural formulae and IUPAC name of an alkyne containing four carbon atoms.

Watch Video Solution

**26.** Give the structural formulae and IUPAC name of an alkane having molecular mass 42.

Watch Video Solution

**27.** Give the structural formulae and IUPAC name of first member of alkyne series.

Watch Video Solution

**28.** Give the structural formula of first cyclic alkane molecule?

Watch Video Solution

**29.** How many isomers of following hydrocarbons are possible?

$C_2H_6$?

Watch Video Solution

**30.** How many isomers of following hydrocarbons are possible?

$C_5H_{12}$?

Watch Video Solution

**31.** How many isomers of following hydrocarbons are possible?

$C_4H_{10}$

Watch Video Solution

**32.** How many isomers of following hydrocarbons are possible?

$C_3H_8$?

Watch Video Solution

**33.** A hydrocarbon has three carbon atoms. Write down its molecular formular if its is an

alkane?

Watch Video Solution

**34.** A hydrocarbon has three carbon atoms. Write down its molecular formular if its is an

alkene?

Watch Video Solution

**35.** A hydrocarbon has three carbon atoms. Write down its molecular formular if its is an alkyne.

Watch Video Solution

**36.** Give the molecular formulae of ethyl radical?

Watch Video Solution

**37.** Give the molecular formulae of propyne.

Watch Video Solution

**38.** Write the formulae of

Propanoic acid?

Watch Video Solution

**39.** Write the formulae of

Propanone

Watch Video Solution

**40.** Write the formulae of

Propanol?

Watch Video Solution

**41.** Complete the reaction

$CH_3CH_2OH + Na \rightarrow \ldots\ldots\ldots\ldots\ldots + \ldots\ldots\ldots\ldots\ldots$

Watch Video Solution

**42.** Name the product formed when ethanol is heated with conc. $H_2SO_4$ at 443K.

Watch Video Solution

**43.** Ethanol on complete oxidation gives a product which is acidic in nature. Write equation of this.

Watch Video Solution

**44.** What is meant by deatured alcohol?

Watch Video Solution

**45.** How will you convert ethanol into ethanoic acid?

Watch Video Solution

**46.** What is vinegar?

Watch Video Solution

**47.** Name the gas produced when

ethanol reacts with sodium metal.

Watch Video Solution

**48.** Name the gas produced when

ethanoic acid reacts with sodium carbonate.

Watch Video Solution

**49.** Complete the reaction:

$CH_3COOH + NaHCO_3 \rightarrow$

Watch Video Solution

**50.** Name the reaction which takes place when ethanoic acid reacts with ethanol. What is the general name of the produce obtianed in this reaction?

Watch Video Solution

**51.** What happens when ethanol is treated with acidified potassium dichromate? Give chemical equation.

Watch Video Solution

**52.** Write chemical equations for the reactions of ethanoic acid with sodium carbonate.

Watch Video Solution

**53.** Will $CH_3COOH$ be acidic, neutral or basic?

Watch Video Solution

**54.** Complete the table

| | Chemical formula | Structural formula | IUPAC name | Functional group |
|---|---|---|---|---|
| (i) | $C_4H_8$ | $CH_3CH_2CH=CH_2$ | ..... | ..... |
| (ii) | $C_2H_4O$ | ..... | ethanal | ..... |
| (iii) | ..... | ..... | propanol | ..... |
| (iv) | $C_3H_6O$ | ..... | ..... | $-\overset{\vert}{C}=O$ |
| (v) | $C_2H_2$ | ..... | ..... | ..... |
| (vi) | $C_3H_6O_2$ | ..... | ..... | $-\overset{O}{\overset{\Vert}{C}}-OH$ |

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**55.** Give the molecular formula and I.U.P.A.C name of the following organic compounds:

a saturated hydrocarbon containing 5 carbon atoms.

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**56.** Give the molecular formula and I.U.P.A.C name of the following organic compounds:

a cycloalkane containing 4 carbon atoms.

Watch Video Solution

**57.** Give the molecular formula and I.U.P.A.C name of the following organic compounds:

a carboxylic acid used as preservative.

Watch Video Solution

**58.** Give the molecular formula and I.U.P.A.C name of the following organic compounds:

an alkyne containing 4 carbon atoms.

Watch Video Solution

**59.** Give the molecular formula and I.U.P.A.C name of the following organic compounds:

an alcohol used in cough syrups.

Watch Video Solution

**60.** Give the molecular formula and I.U.P.A.C name of the following organic compounds:

first member of alkane series.

Watch Video Solution

**61.** Give the molecular formula and I.U.P.A.C name of the following organic compounds:

first member of aldehyde series.

Watch Video Solution

**62.** Give the molecular formula and I.U.P.A.C name of the following organic compounds:

an alkene containing 4 carbon atoms with branching.

Watch Video Solution

**63.** Give the molecular formula and I.U.P.A.C name of the following organic compounds:

carboxylic acid containing least number of carbon atoms.

Watch Video Solution

**64.** Give the molecular formula and I.U.P.A.C name of the following organic compounds:

an alcohol containing 4 carbon atoms.

Watch Video Solution

**65.** Name the functional groups present in the following

HCHO

Watch Video Solution

**66.** Name the functional groups present in the following

$CH_3COCH_3$

Watch Video Solution

**67.** Name the functional groups present in the following

$$CH_3CH_2\underset{OH}{\overset{CH}{|}}CH_3$$

Watch Video Solution

**68.** Name the functional groups present in the following

$CH_3CH_2COOH$

Watch Video Solution

**69.** Name the functional groups present in the following

$CH_3CH_2CH_2COCH_2CH_3$

Watch Video Solution

**70.** Draw all the possible isomers of pentane. Give their IUPAC names.

Watch Video Solution

**71.** Give one example each of

hydrogenation reaction.

Watch Video Solution

**72.** Give one example each of

esterification reaction

Watch Video Solution

**73.** Give one example each of

addition reaction.

Watch Video Solution

**74.** Give one example each of

combustion reaction.

Watch Video Solution

**75.** Give one example each of

saponificaton reaction.

Watch Video Solution

**76.** Complete the following reactions:

$$CH_3CH_2OH \xrightarrow[KMNO_4]{alk}$$

Watch Video Solution

**77.** Complete the following reactions:

$$CH_3CH_2OH \xrightarrow[443K]{Conc.\,H_2SO_4}$$

Watch Video Solution

**78.** Complete the following reactions:

$$CH_3COOH + C_2H_5OH \xrightarrow{Conc.\,H_2SO_4}$$

Watch Video Solution

**79.** Complete the following reactions:

$$CH_3COONa + NaOH \xrightarrow{CaO}$$

Watch Video Solution

**80.** Complete the following reactions:

$$CH_3COOH + Na_2CO_3 \rightarrow$$

Watch Video Solution

**81.** Complete the following reactions:

$CH_3CH_2CH_2OH + Na \rightarrow$

Watch Video Solution

**82.** Complete the following reactions:

$CH_3CH_2CH_2COOC_2H_5 + NaOH \rightarrow$

Watch Video Solution

**83.** Complete the following reactions:

$HC = CH + H_2 \xrightarrow[catalyst]{Ni}$

Watch Video Solution

**84.** Complete the following reactions:

$$H_2C = CH_2 + Br_2 \xrightarrow{\mathbb{C}\,Cl_4}$$

Watch Video Solution

**85.** Complete the following reactions:

$$CH_3COOH + NaOH \rightarrow$$

Watch Video Solution

**86.** Match the name given in column A with the formula in column B:

| Column A | Column B |
|---|---|
| (i) Butane | (a) $C_4H_8$ |
| (ii) Butene | (b) $C_4H_{10}O$ |
| (iii) Butyne | (c) $C_4H_8O_2$ |
| (iv) Butanol | (d) $C_4H_{10}$ |
| (v) Butanoic acid | (e) $C_4H_6$ |

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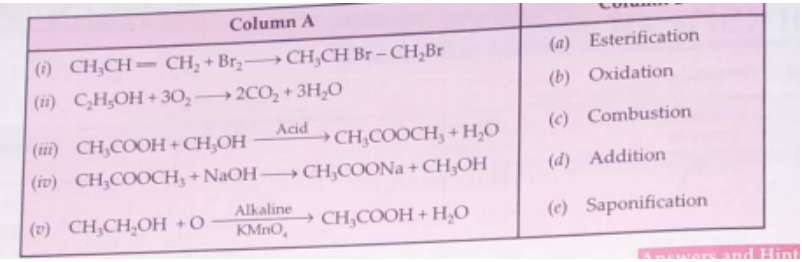
**87.** Match the dreaction in column A with its name in column B:



| Column A | Column B |
|---|---|
| (i) $CH_3CH=CH_2+Br_2 \longrightarrow CH_3CHBr-CH_2Br$ | (a) Esterification |
| (ii) $C_2H_5OH+3O_2 \longrightarrow 2CO_2+3H_2O$ | (b) Oxidation |
| (iii) $CH_3COOH+CH_3OH \xrightarrow{Acid} CH_3COOCH_3+H_2O$ | (c) Combustion |
| (iv) $CH_3COOCH_3+NaOH \longrightarrow CH_3COONa+CH_3OH$ | (d) Addition |
| (v) $CH_3CH_2OH+O \xrightarrow[KMnO_4]{Alkaline} CH_3COOH+H_2O$ | (e) Saponification |

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**88.** The general fomula of alkyne is:

Watch Video Solution

**89.** Give the second member of alkene series?

Watch Video Solution

**90.** What is the functional group of carboxylic acids?

Watch Video Solution

**91.** Which out of graphite and diamond is good conductor of electricity?

Watch Video Solution

**92.** What is a functional group?

Watch Video Solution

**93.** What is the formula of propanal?

Watch Video Solution

**94.** What is the common name of ethyne?

Watch Video Solution

**95.** Select alkenes from the following:

$C_3H_8, C_4H_8, C_3H_4, C_2H_4$

Watch Video Solution

**96.** Name the compound formed when ethyne reacts with alkaline $KMNO_4$.

Watch Video Solution

**97.** the catalyst used in the hydrogenation of oils is :

Watch Video Solution

**98.** Name the gas produced when

ethanol reacts with sodium metal.

Watch Video Solution

**99.** Is combustion of ethanol exothermic or endothermic reaction?

Watch Video Solution

**100.** What is vinegar?

Watch Video Solution

**101.** What is rectified spirit?

Watch Video Solution

**102.** What is the action of acetic acid on litmus solution?

Watch Video Solution

**103.** Which gas is evolved when acetic acid is treated with $NaHCO_3$?

Watch Video Solution

**104.** What is the formula of stearic acid?

Watch Video Solution

**105.** What is catenation?

Watch Video Solution

**106.** What are soaps?

Watch Video Solution

**107.** What is the chemical formula of ethyl ethanoate?

Watch Video Solution

**108.** Alkenes as well as alkynes decolourises bromine water.

Watch Video Solution

**109.** How vanaspati ghee is obtained by the hydrogenation of vegetable oil.

Watch Video Solution

**110.** Alkanes undergo substitution reactions.

Watch Video Solution

**111.** Alkenes and alkynes are unsaturated compounds.

Watch Video Solution

**112.** Ethanol is oxidised by alkaline $KMNO_4$ to oxalic acid.

Watch Video Solution

**113.** Detergents give scum with hard water.

Watch Video Solution

**114.** The polar end in soap is called hydrophillic end.

Watch Video Solution

**115.** The reaction of ethanol with conc. $H_2SO_4$ gives ethane.

Watch Video Solution

**116.** Carboxylic acids react with alcohol to form esters.

Watch Video Solution

**117.** The general formula of alkenes is $C_nH_{2n-2}$.

Watch Video Solution

**118.** Detergents can be used even in hard water.

Watch Video Solution

**119.** Alkenes decolourise bromine water by undergoing addition reactions.

Watch Video Solution

**120.** The reactions of ethanoic acid with ethanol in the presence of conc. $H_2SO_4$ is called saponification reaction.

Watch Video Solution

**121.** The first number of carboxylic acid series is ethanoic acid.

Watch Video Solution

**122.** Methanol is safe to be used for drinking purposes.

Watch Video Solution

**123.** The functional groups of alcohols and aldehydes respectively -OH and $-\overset{O}{\underset{C}{||}}-OH$

Watch Video Solution

**124.** The formula of propanone is $CH_3COCH_3$

Watch Video Solution

Watch Video Solution

**125.** The formula of methanol is $CH_3COCH_3$.

Watch Video Solution

**126.** Rectified spirit is the purest form of ethanol.

Watch Video Solution

**127.** The polar heat of soaps is insoluble in oil or grease.

Watch Video Solution

**128.** Fill ups

Alkenes and alkynes are.....hydrocarbons.

Watch Video Solution

**129.** Fill ups

The formula of ethanoic acid is..... .

Watch Video Solution

**130.** Fill ups

The molecular formula of cyclobutane is..... .

Watch Video Solution

**131.** Fill ups

The important aromatic compound is..... .

Watch Video Solution

**132.** Fill ups

100% acetic acid is also called..... .

Watch Video Solution

**133.** Fill ups

Non-biodegradable detergents have.....hydrocarbon chains.

Watch Video Solution

**134.** Fill ups

The number of structural isomers of $C_5H_{12}$ are ..... .

Watch Video Solution

**135.** Fill ups

IUPAC name of acetylene is..... .

Watch Video Solution

**136.** Fill ups

Out of diamond and graphite,.....is a good conductor.

Watch Video Solution

**137.** Fill ups

The gas evolved when sodium metal reacts with ethanoic acid is..... .

Watch Video Solution

**138.** Fill ups

The IUPAC name of $CH_3COOCH_2CH_3$ is..... .

Watch Video Solution

**139.** Fill ups

The formula of pamitic acid is..... .

Watch Video Solution

**140.** Fill ups

The first member of ketone series contains .....carbon atoms.

Watch Video Solution

**141.** Fill ups

.....is the first member of cabroxylic acid series.

Watch Video Solution

**142.** Fill ups

.....acid is vinegar smelling liquid.

Watch Video Solution

**143.** Fill ups

Ethanol is oxidised to .....with alkaline $KMNO_4$.

Watch Video Solution

**144.** Fill ups

The general formula of cycloalkanes and .....is same.

Watch Video Solution

**145.** Fill ups

.....have fruity sweet smell.

Watch Video Solution

**146.** Fill ups

All alchols contain.....functional group.

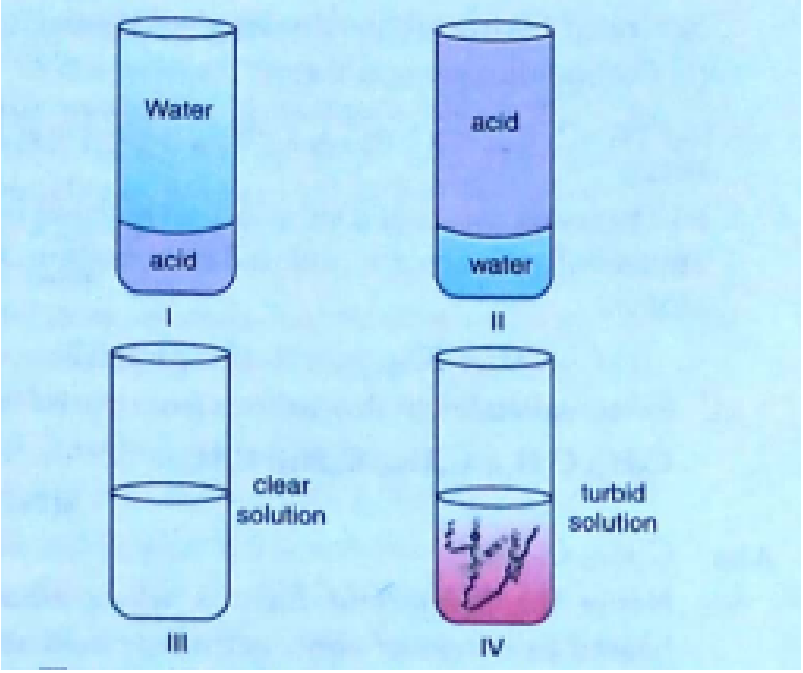
Watch Video Solution

**147.** Fill ups

IUPAC name of $CH_2 - C(CH_3)_2$is..... .

Watch Video Solution

**148.** 10mL each of acetic acid and water are mixed together and shaken in different test tubes as given below:




The resulting mixture after standing would appear as shown in test tube:

A. I

B. II

C. III

D. IV

**Answer:**

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**149.** Dilute acetic acid was added to the four test tubes containing the following chemicals:

Brisk effervescence was observed in the test tubes containing :

A. KOH

B. $NaHCO_3$

C. $K_2CO_3$

D. NaCl

**Answer:**

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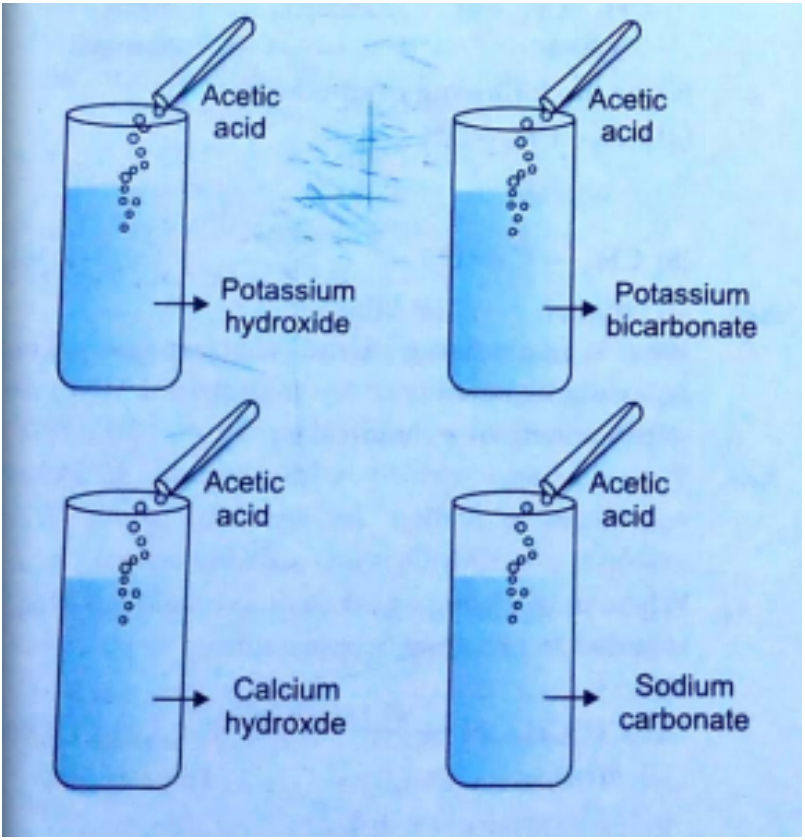
**150.** A student added acetic acid to test tubes I,II,III and IV




The lighted candle would be extinguish when placed near the mouth of the test tube.

A. I and II

B. II and III

C. II and IV

D. I and IV

**Answer:**

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**151.** Four students observed the colour and colour of acetic acid and its reaction with sodium hydrogen carbonate. They tabulated their observations as given below:

| Student | Colour of acetic acid | Odour of acetic acid | Action with sodium hydrogen carbonate |
|---|---|---|---|
| I | light blue | fruity | effervescence |
| II | colourless | like rotten eggs | gas evolved without bubbles |
| III | colourless | smell of vinegar | effervescence |
| IV | light brown | smell of vinegar | colourless gas |

The correct set of observations is that of student

A. I

B. II

C. III

D. IV

**Answer:**

Watch Video Solution

**152.** A student while observing the properties of acetic acid would report that this acid smells like

A. vinegar and turns blue litmus red.

B. rotten egg and turns red litmus blue

C. vinegar and turns blue litmus red

D. rotten egg and turns blue litmus red.

**Answer:**

Watch Video Solution

**153.** On adding acetic acid to sodium hydrogen carbonate in a test tube, a student observes

A. no reacton

B. a colourless gas with pungent smell

C. bubbles of a colourless and odourless gas

D. a strong smell of vinegar.

**Answer:**

Watch Video Solution

**154.** Which one of the following are the correct observatons about acetic acid?

A. It turns blue litmus red and smells like vinegar.

B. It turns blue litmus red and smells like burning sulphur

C. It turns red litmus blue and smells like vinegar

D. it turns red litmus blue and has a fruity smell.

**Answer:**

Watch Video Solution

**155.** Hard water required for an experiment is not available in a schol laboratory. However, following salts are available in the laboratory. Select the salt which may be dissolved in water to make it hard for the experiment.

Calcium sulphate

Sodium sulphate

Calcium chloride

Potassium sulphate

sodium hydrogen carbonate

Magnesium chloride

A. 1,2 and 4

B. 1,3 and 6

C. 3,5 and 6

D. 2,4 and 5

**Answer:**

Watch Video Solution

**156.** In the preparation of soap, a small amount of sodium chloride is added to the mixture of fat and sodium hydroxide. The role of common salt is to

A. favour the percipitation of soap

B. enhance the cleansing capacity of soap

C. increase the weight of the soap to earn money

D. decrease the acidity of the soap

**Answer:**

Watch Video Solution

**157.** Select the observation about dilute solution of acetic acid.

A. It smells like rotten egg and turns blue litmus red

B. It smells like vinegar and turns red litmus blue

C. It smells like rotten egg and turns red litmus blue

D. It smells like vinegar and turns blue litmus red.

**Answer:**

Watch Video Solution

Watch Video Solution

**158.** When yo add about 2 mL of acetic acid to a test tube contianing an equal amount of distilled water and leave the test tube to settle after shaking its contents then after about 5 minutes what will you observe in the test tube?

A. A white precipitate settling at its bottom

B. A clear colourless solution

C. A layer of water over the layer of acetic acid

D. A layer of acetic acid over the layer of water.

**Answer:**

Watch Video Solution

**159.** While studying saponification reaction for the preparatoin of soap, the teacher suggested a student to add a small quantity of common salt into the reaction mixture. The functions of common slat in this reaction mixture. The function of common salt in this reaction is to

A. reduce the alkalinity of the soap.

B. reduce the acidity of the soap

C. enhance the cleansing capacity of soap

D. favour precipitation of soap.

**Answer:**

Watch Video Solution

**160.** In and experiment to study the properties of ethanoic acid, a student takes about 3 mL of ethanoic acid in a dry test tube. He adds an equal amount of distilled water to it and shakes the test tube well. After some time he is likely to observe that:

A. a colloid is formed in the test tube

B. the ethanoc acid dissolved readily in water

C. the solutoin becomes light orange.

D. water floats ove the surface of ethanoic acid.

**Answer:**

Watch Video Solution

**161.** A student takes about 2 mL ethanoic acid in a dry test tube and adds a pinch of sodium hydrogen carbonate to it. He reports the following observations:

Immediately a colourles and odourless gas evolves with a brisk effervescence.

the gas turns lime water milky when passed through it.

The gas burns with an explosion when a burning splinter is brough near it.

the gas extinguishes the burning splinter that is brought near it.

The correct observations are

A. I,II and III

B. II,III and IV

C. III,IV and I

D. I,II and IV

**Answer:**

Watch Video Solution

**162.** In order to study saponification reaction we first prepare 20% solution of sodium hydroxide. If we record the temperature of this solution just afte radding sodium hydroxide flakes to water and also test its nature using litmus, it may be concluded that the process of making this solution is

A. exothermic and the solution is alkaline

B. endothermic and the solution is alkaline

C. endothermic and the solution is acidic

D. exothermic and the solution is acidic.

**Answer:**

Watch Video Solution

**163.** A student prepared 20% sodium hydroxide solution in a beaker to studey saponification reaction. Some observations related to this are given below:

Sodium hydroxide solution turns red litmus blue.

sodium hydroxide readily dissolves in water.

The beaker containing solutions appears cold when touched from outside

The blue litmus paper turns red when dipped into the solution

A. I,ii and iv

B. only iii and iv

C. I,ii and iii

D. only I and ii

**Answer:**

Watch Video Solution

**164.** Hard water is not available for an experiment. Some salts are given below:

Sodium chloride, sodium sulphate, calcium chloride, Calcium sulphate, Potassium chloride, Magnesium sulphate

Select the following a group of these salts, each member of which may be dissolved in water to make it hard.

A. I,ii,v

B. I,iii,v

C. iii,iv and vi

D. ii,iv,vi

**Answer:**

Watch Video Solution

**165.** What do we observe on pouring acetic acid on red and blue litmus papers?

A. Red litmus remians red and blue litmus turns red

B. Red litmus turns blue and blue litmus remians blue

C. Red litmus turns blue and blue litmus turns red

D. Red litmus becomes colourless and blue litmus remians blue

**Answer:**

Watch Video Solution

**166.** A student takes about 4 mL of distilled water in four test tubes marked P,Q,Rand S. He then dissolves in each test tube an equal amount of one salt in one test tube, namely sodium sulphate in P, potassium sulphate in Q, calcium sulphate in R and magnesium sulphate in S. AFter that he adds on equal amount of soap solution en each test tube. on shaking each of these tubes well, he observes a good amount of lather in the test tubes marked

A. P and Q

B. Q and R

C. P,Q and S

D. P,R and S

**Answer:**

Watch Video Solution

**167.** In the neighbourhood of your school, hard water required for an experiment is not avialable. Select from the following groups of salts available in your school, a group each member of which, if dissolved in distilled water, will make it hard

A. Sodium chloride, calcium chloride

B. Potassium chlorde, sodium chloride

C. Sodium chlorde, magnesium chloride

D. calcium chloride, magnesium chloride.

**Answer:**

Watch Video Solution

**168.** A student puts a drop of reaction mixture of a saponification reaction first on a blue litmus paper and then on a red litmus paper. He may observe that:

A. There is no change in the blue litmus paper and the red litmus paper turns white

B. There is no change in the red litmus paper and the blue litmus paper turns red.

C. There is no change in the blue litmus paper and the red litmus paper turns blue.

D. No change in colour is observed in both the litmus paper

**Answer:**

Watch Video Solution

**169.** For preparing soap in the laboratory we requires an oil and a base. Which of the following combinations of an oil and a base would be the best suited for the preparation of soap

A. Castor oil and calcium hydroxide

B. Turpentine oil and sodium hydroxide

C. Castor oil and sodium hydroxide

D. Mustard oil and calcium hydroxide

**Answer:**

Watch Video Solution

**170.** How will you test in the laboratory, whether the given sample of water is hard or soft? Name two salts which make the water hard.

Watch Video Solution

**171.** When a compound X in its aqueous from is added to acetic acid taken in a test tube, a gas is evolved. This gas turns lime water milky. Name the compound X and the gas evolved. Also wrie the equatoins for the reaction.

Watch Video Solution

**172.** Can we test hard water by using a detergent? Write one more method othe than using soap to test the hardness of hard water.

Watch Video Solution

**173.** When boilers of water are used for a very long time. Then write layers get deposited on inside of these boilers.

How can these white layers be removed?

Watch Video Solution

**174.** Write two tests you would perofrm to detec whether the given colourless liquid is acetic acid or not.

Watch Video Solution

**175.** Name two salts each of calcium and magnesium which make the water hard?

Watch Video Solution

**176.** What happens when acetic acid is added in a solution of $Na_2CO_3$ in a test tube? Write the equations for detecting the evolved gas.

Watch Video Solution

**177.** List two observations which you make when you add a pinch of sodium hydrogen carbonate to acetic acid in a test tube. Write the chemical equations for the reaction that occurs.

Watch Video Solution

**178.** What do you observe when you drop a few drops of acetic acid to a test tube contaning:

phenolpthalein.

Watch Video Solution

**179.** What do you observe when you drop a few drops of acetic acid to a test tube contaning:

distilled water

Watch Video Solution

**180.** What do you observe when you drop a few drops of acetic acid to a test tube contaning:

universal indicator.

Watch Video Solution

**181.** What do you observe when you drop a few drops of acetic acid to a test tube contaning:

sodium hydrogen carbonate

Watch Video Solution

**182.** To which group of the periodic table does cabron belong

Watch Video Solution

**183.** Define catenation?

Watch Video Solution

**184.** What are saturated hydrocarbons? Give one example.

Watch Video Solution

**185.** Give the electron-dot structure of methane.?

Watch Video Solution

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

Watch Video Solution

**187.** What is meant by tetravalency of carbon?

Watch Video Solution

**188.** What are alkynes?

Watch Video Solution

**189.** Write the molecular formulae and names of immediate lower and higher homologous of $C_3H_4$.

Watch Video Solution

**190.** Write the structural formula of 1-propanol and 2-propanol.

Watch Video Solution

**191.** Write the combustion reaction of ethanol.

Watch Video Solution

**192.** Name the main constituent of alcoholic drinks. Give its oxidation product.

Watch Video Solution

**193.** Compare the effect of blue litmus on ethanol and ethanoic acid.

Watch Video Solution

**194.** Write the IUPAC name of

an aldyhyde?

Watch Video Solution

**195.** Write the IUPAC name of

a ketone having the molecular formula $C_3H_6O$. What are these called?

Watch Video Solution

**196.** What is the first member of homologous series contianing -CHO group? Give its IUPAC name.

Watch Video Solution

**197.** What are the next two higher homologous of methanol?

Watch Video Solution

**198.** Name two soaps.

Watch Video Solution

**199.** Give the IUPAC name of $(CH_3)_3COH$.

Watch Video Solution

**200.** How can you explain the meaning of functional group?

Watch Video Solution

**201.** What is meant by denatturated alcohol? How is it prepared?

Watch Video Solution

**202.** Which gas is evolved during the reaciton of ethanol with sodium?

Watch Video Solution

**203.** Name the functional group present in $CH_3COOH$.

Watch Video Solution

**204.** Name the functional group present in

$CH_3COCH_3$.

Watch Video Solution

**205.** An organic compound is a consituent of beer, whisky and some cough syrup. Identify the compound.

Watch Video Solution

**206.** What happens when a small piece of sodium is dropped into ethanol.

Watch Video Solution

**207.** Explain the two properties responsible for versatile character of carbon.

Watch Video Solution

**208.** Why does carbon from covalent bonds rather than ionic bonds in its compounds.

Watch Video Solution

**209.** Why does carbon exhibit catenation to the maximum extent?

Watch Video Solution

**210.** How will you distinguish between ethane and ethene? Give the chemical equations for the reactions involved.

Watch Video Solution

**211.** Explain the formation of covalent bonds by taking the examples of $H_2$ and HCl.

Watch Video Solution

**212.** Draw electron dot structures for the following:

Methane?

Watch Video Solution

**213.** Draw electron dot structures for the following:

Ethane?

Watch Video Solution

**214.** Draw electron dot structures of ammonia and water.

Watch Video Solution

**215.** How does the following burn in air or oxygen?

Propane

Watch Video Solution

**216.** How does the following burn in air or oxygen?

Propanol.

Watch Video Solution

**217.** How will you distinguish between an alkene and an alkanes?

Watch Video Solution

**218.** What are hydrocarbons? Give general formulae of alkanes and alkynes.

Watch Video Solution

**219.** Which of the following hydrocarbons undergo addition reaction?

$C_2H_2, C_3H_8, C_2H_4, C_3H_4, C_4H_{10}$

Watch Video Solution

**220.** Write the molecular formula and names of lower and higher homologous of $C_4H_6$.

Watch Video Solution

**221.** The formula of ethanoic acid is.....

Watch Video Solution

**222.** The general formula for alkyne is.....

Watch Video Solution

**223.** $C_nH_{2n}$ is the general formula of.....

Watch Video Solution

**224.** Vanaspati ghee is obtained by.....of oils.

Watch Video Solution

**225.** What is alcohol? Write the molecular formula, condensed formula and structural formula of ethyl alcohol.

What is the IUPAC name?

Watch Video Solution

**226.** Write the formulae and names of first three carboxylic acid.

Watch Video Solution

**227.** What is soap? Why is it not suitable for washing clothes when the water is hard?

Watch Video Solution

**228.** What are advantages and disadvntages of synthetic detergents over soaps?

Watch Video Solution

**229.** What is denatured alcohol? What are the harmcul effects of drinking this alcohol?

Watch Video Solution

**230.** What is hydrogenation? Give its industrial application.

Watch Video Solution

**231.** How will you convert:

ethanol to ethanoic acid.

Watch Video Solution

**232.** How will you convert:

ethanol to ethyl ethanoate?

Watch Video Solution

**233.** What are isomers? Give the isomers of $C_5H_{12}$.

Watch Video Solution

**234.** What is homologous series? State three characterstics of homologus series.

Watch Video Solution

**235.** What do you understand by addition reactions/ give two examples.

Watch Video Solution

**236.** Write chemical equation for the reaction of ethanol with alkaline potassium permanganate.

Watch Video Solution

**237.** Write chemical equation for the reaction of ethanoic acid with sodium hydrogen carbonate

Watch Video Solution

**238.** Write chemical equation for the reaction of ethanol with oxygen.

Watch Video Solution

**239.** A compound A has molecular formula $C_3H_4$. One mole of A reacts with two moles of hydrogen to yield a compound B. deduce the structure of A and B.

Watch Video Solution

**240.** Give an example of each

a straight chain hydrocarbon.

Watch Video Solution

**241.** Give an example of each

branched chain hydrocarbon

Watch Video Solution

**242.** Give an example of each

ring chain hydrocarbon

Watch Video Solution

**243.** Write the structural formulae of

propyne?

Watch Video Solution

**244.** Write the structural formulae of

propanoic acid

Watch Video Solution

**245.** Write the structural formulae of

propanol

Watch Video Solution

**246.** Write the structural formulae of

propanone

Watch Video Solution

**247.** Write two tests to demonstrate that $CH_3COOH$ is an acid. What do you understand by saponification of ester?

Watch Video Solution

**248.** How do synthetic detergents differ from soaps? What is the cleanising action of soaps and detergents?

Watch Video Solution

**249.** What is meant by functional group? What functional group is present in

$CH_2CH_2OH$

Watch Video Solution

**250.** What is meant by functional group? What functional group is present in

$CH_3CH_2COCH_3$?

Watch Video Solution

**251.** What is meant by functional group? What functional group is present in

HCOOH?

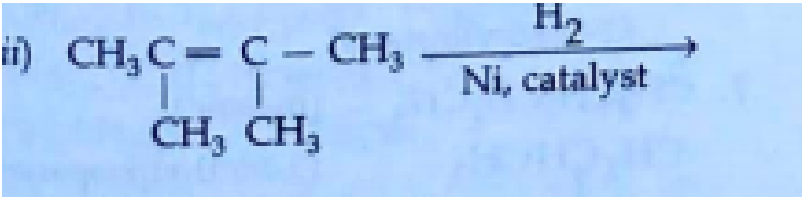
Watch Video Solution

**252.** Complete the following reactions:

$CH_4 + O_2 \rightarrow$

Watch Video Solution

**253.** Complete the following reactions:

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**254.** Complete the following reactions:

$$CH_3CH_2OH \xrightarrow[443K]{Conc.\,H_2SO_4}$$

Watch Video Solution

**255.** How can ethanoic acid and ethanol be differentiated on the basis of their physicla and chemical properties.

Watch Video Solution

**256.** Draw electron dot structure of

Propanal

Watch Video Solution

**257.** Draw the electron dot structures for: propanone

Watch Video Solution

**258.** Draw electron dot structure of

Propanoic acid

Watch Video Solution

**259.** Ethanoic acid turns blue litmus solution..... .

Watch Video Solution

**260.** When treated with soap.....water gives scum.

Watch Video Solution

Watch Video Solution

**261.** The self linkage property of an element is called.....

Watch Video Solution

**262.** The numebr of C-H bonds in ethane are..... .

Watch Video Solution

**263.** Cyclohexane has.....bonds.

Watch Video Solution

**264.** The suffix for aldehydes is.....

Watch Video Solution

**265.** Complete the following reactions:

$CH_3CH_2OH \xrightarrow{Alk.KMnO_4}$

Watch Video Solution

**266.** Complete the following reactions:

$C_2H_5OH + Na \rightarrow$

Watch Video Solution

**267.** Complete the following reactions:

$CH_3CH_2OH + O_2 \rightarrow$

Watch Video Solution

**268.** An organic compound 'A' is widely used s a preservative in pickels and has a molecular formula $C_2H_4O_2$. The compound reacts with ethanol to form a sweet smelling compound 'B'

Identify the compound 'A'.

Watch Video Solution

**269.** An organic compound 'A' is widely used s a preservative in pickels and has a molecular formula $C_2H_4O_2$. The compound reacts with ethanol to form a sweet smelling compound 'B'

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

Watch Video Solution

**270.** An organic compounds 'A,s is widely uses as preservative in pickels and has a molecular formula $C_2H_4O_2$. The compound reacts with ethanol to form a sweet smelling compound 'B'.

How can we get compound 'A' back from 'B'?

Watch Video Solution

**271.** An organic compound 'A' is widely used s a preservative in pickels and has a molecular formula $C_2H_4O_2$. The

compound reacts with ethanol to form a sweet smelling compound 'B'

Which gas is produced when compound 'A' reacts with washing soda. Write the chemical equation.

Watch Video Solution

**272.** Why does carbon from largest number of compounds?

Watch Video Solution

**273.** Why are some compound called saturated and other unsaturated compounds?

Watch Video Solution

**274.** Write the names of the compounds

$CH_3 - CH_2 - Br$

Watch Video Solution

**275.** Write the names of the compounds?

$$H - \overset{\overset{H}{|}}{\underset{\underset{H}{|}}{C}} - \overset{\overset{H}{|}}{\underset{\underset{H}{|}}{C}} - \overset{\overset{H}{|}}{\underset{\underset{H}{|}}{C}} - C = C - H$$

Watch Video Solution

**276.** Two carbon 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 reaction? Justify your answer

explain with the help of chemical equaton, how an addition reaction is useful in vegetable ghee industry?

Watch Video Solution

**277.** What would be obsreved on adding 5% solution of alkaline potassium permanganatge drop by drop to some warm ethanol taken in a test tube?

Watch Video Solution

**278.** Write the name of the compounds formed during the chemical reaction?

Watch Video Solution

**279.** How would you distinguish experimentally between an alcohol and a carboxylic acid?

Watch Video Solution

**280.** What is vinegar?

Watch Video Solution

**281.** Write the chemical reaction between sodium hydrogen carbonate and ethanoic acid.

Watch Video Solution

**282.** Write the name and molecular formula of an organic compound having its name suffixed with '-ol' and having two carbon atoms in the moleculae.

Watch Video Solution

**283.** An ester has the moelcular formula $C_4H_8O_2$. Write its structural formula. What happens when this ester is heated in the presence of sodium hydroxide solution? Write the balanced chemical equation for the reaction and name the prodcues.

Watch Video Solution

**284.** What is covalent bond? Draw electron dot structures for the following:

Methane?

Watch Video Solution

**285.** Draw electron dot structures for the following:

Carbon dioxide.

Watch Video Solution

**286.** Draw electron dot structures for the following:

Ammonia.

Watch Video Solution

**287.** Draw electron dot structures for the following:

Water

Watch Video Solution

**288.** What is covalent bond? Draw electron dot structures for the following:

Ethane

Watch Video Solution

**289.** Explain the following:

Catenation.

Watch Video Solution

**290.** Explain the following:

Saponification

Watch Video Solution

**291.** Explain the following:

Decarboxylation.

Watch Video Solution

**292.** Explain the following reaction with one example each

Substitution reactions.

Watch Video Solution

**293.** Explain the following

Addition reactions.

Watch Video Solution

**294.** Explain the following

Combustons reactions.

Watch Video Solution

**295.** Explain the following reaction with one example each

Oxidation reactions.

Watch Video Solution

**296.** What is ethanoic acid? Give its important physical and chemical properties.

Watch Video Solution

**297.** What are alcohols? What is the functional group?

Watch Video Solution

**298.** Write names and formulae of first four members of alcohol family.

Watch Video Solution

**299.** How does the second member of alcohol family react with

Sodium metal.

Watch Video Solution

**300.** How does the second member of alcohol family react with

Ethanoic acid.

Watch Video Solution

**301.** What are soap and synthetic detergents? How do they differ? Discuss their cleansing actions.

Watch Video Solution

Watch Video Solution

**302.** Which properties of carbon make it a versatile element.

Watch Video Solution

**303.** What are saturated hydrocarbons? Write the formulae and structures of first three saturated hydracarbons.

Watch Video Solution

**304.** What happen when

ethanol is heated with excess conc. $H_2SO_4$ at 443K

Watch Video Solution

**305.** Name the functional group of organic compounds that can be hydrogentate. With the help of suitable example explain the process of hydrogenation mentioninig the conditions of the reaciton and any one change in physical properties with the formations of the products. name any one natural source of organic compouns that are hydrogentate.

Watch Video Solution

**306.** Carbon exists in the atmosphere in the form of

A. carbon monoxide only

B. carbon monoxide in traces and carbon dioxide

C. carbon dioxide only

D. coal

**Answer:**

Watch Video Solution

**307.** Which of the following statements are usually correct for carbon compounds? These

A. are good conductors of electricity

B. are poor conductors of electricity

C. have strong forces of attraction between their molecules

D. do not have strong forces attraction between their molecules

**Answer:**

Watch Video Solution

**308.** A molecule of ammonia $(NH_3)$ has

A. only single bonds

B. only double bonds

C. only triple bonds

D. two double bonds and one single bond

**Answer:**

Watch Video Solution

**309.** Buckminster fullerece is an allotropic form of

A. phosphorus

B. sulphur

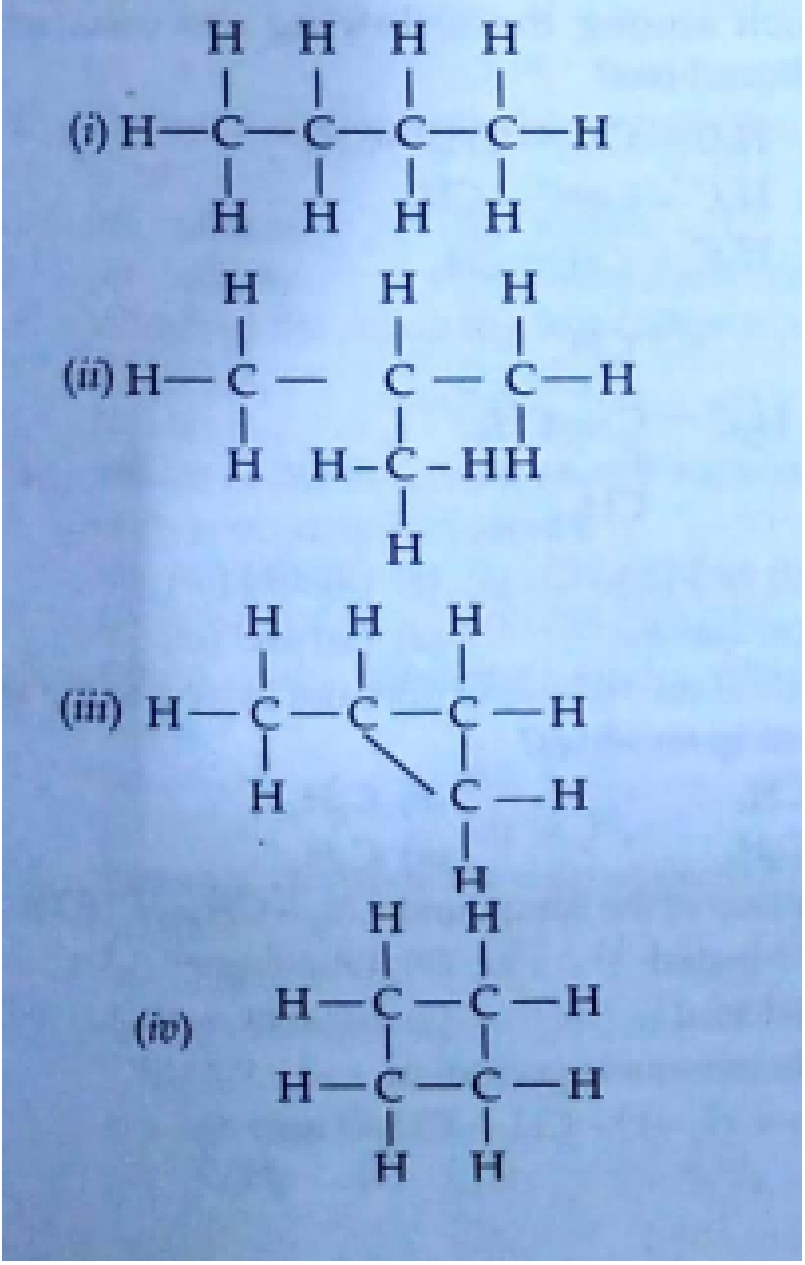
C. carbon

D. tin

**Answer:**

Watch Video Solution

**310.** Which of the following correct structural isomers of butane?




A. (i) and (iii)

B. (ii) and (iv)

C. (i) and (ii)

D. (iii) and (iv)

**Answer:**

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**311.** $CH_3 - CH_2 - OH \xrightarrow{Alk.KMnO_4 + Heat} CH_3 - COOH$

In the above give reaction, alkaline $KMnO_4$ acts as

A. reducing agent

B. oxidising agent

C. catalyst

D. dehydrating agent

**Answer:**

Watch Video Solution

**312.** Oils an treating with hydrogen in the presence of palladium or nickel catalyst form fats. This is an example of

A. Addition reaction

B. Substitution reaction

C. Displacement reaction

D. Oxidation reaction

**Answer:**

Watch Video Solution

**313.** In which of the following compounds-OH is the functional group?

A. Butanone

B. Butanol

C. Butanoic acid

D. Butanal.

**Answer:**

Watch Video Solution

**314.** The soap molecule has a

A. hydrophilic head and a hydrophobic tail

B. hydrophobic head and a hydrophilic tail

C. hydrophobic head and a hydrophilic tail

D. hydrophilic head and a hydrophobic tail

**Answer:**

Watch Video Solution

**315.** Which of the following is the correct representation of electron dot structure of nitrogen?

A. $: \ddot{N} : \ddot{N} :$

B. $: \dot{N} : : \dot{N} :$

C. $: \ddot{N} \vdots \dot{N} :$

D. $: N \vdots \quad \vdots N :$

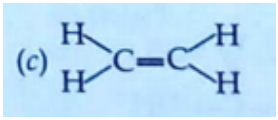
**Answer:**

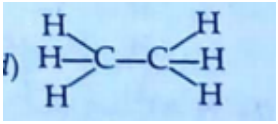
Watch Video Solution

**316.** Structural formula of ethyne is

A. $H - C \equiv C - H$

B. $H_3 - C \equiv H$

C. 


D. 


**Answer:**

Watch Video Solution

**317.** Identify the unsaturated compounds from the following:

A. Propane

B. Propene

C. Propyne

D. Chloropropane

**Answer:**


**318.** Chlorine reacts with saturated hydrocarbons at room temperature in the

A. absence of sunlight

B. presence of sunlight

C. presence of water

D. presence of hydrochloric acid

**Answer:**

Watch Video Solution

**319.** In the soap micelles

A. the ionic end of soap is on the surface of the cluster while the carbon chain is in the interior of the cluster.

B. ionic end of soap is in the interior of the cluster and the carbon chain is out of the cluster

C. both ionic end and carbonchain are in the interior of the cluster

D. both ionic end and carbon chain are on the exterior of the cluster

**Answer:**

Watch Video Solution

**320.** Pentane has the molecular formula $C_5H_{12}$ it has

A. 5 covalent bonds

B. 12 covalent bonds

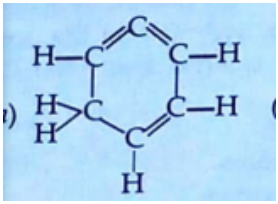
C. 16 covalent bonds

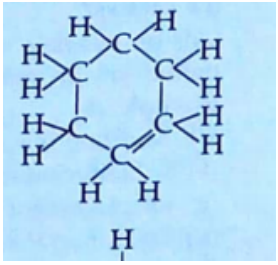
D. 17 covalent bonds

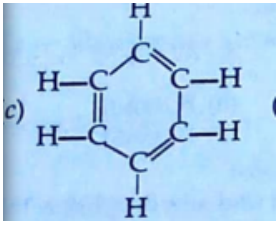
**Answer:**

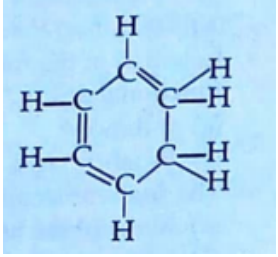
Watch Video Solution

**321.** Structural formula of benzene is

A. 

B. 

C. 

D. 

**Answer:**

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**322.** Ethanol reacts with sodium and forms two products these are

A. sodium ethanoate and hydrogen

B. sodium ethanoate and oxygen

C. sodium ethoxide and hydrogen

D. sodium ethoxide and oxygen

**Answer:**

Watch Video Solution

**323.** Vinegar is a solution of

A. 50%-60% acetic acid in alcohol

B. 5%-8% acetic acid in alcohol

C. 5%-8% acetic in water

D. 50%-60% acetic acid in water

**Answer:**

Watch Video Solution

**324.** Mineral acids are stronger acids than carboxylic acids because

A. minenral acids are completely ionised

B. cabroxylic acids are completely ionised

C. mineral acids are partially ionised

D. carboxylic acids are partially ionised

**Answer:**

Watch Video Solution

**325.** Cabron forms four covalent bonds by sharing its four valence electrons with four univalent atoms e.g. hydrogen.

After the formation of four bonds, carbon attains the electronc configuraiton of

A. helium

B. neon

C. argon

D. krypton

**Answer:**

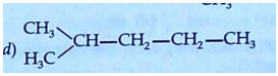
Watch Video Solution

**326.** Which of the following is not a straight chain hydrocarbon?

A. $H_3C - CH_2 - CH_2 - CH_2 - \underset{CH_3}{\overset{CH_2}{|}}$

B. $H_3C - CH_2 - CH_2 - CH_2 - CH_2 - CH_3$

C. $\underset{H_2C}{\overset{CH_3}{|}} - H_2C - H_2C - CH_2 - CH_3$

D. 

**Answer:**

Watch Video Solution

**327.** Which of the following does not belong to the same homologous series?

A. $CH_4$

B. $C_2H_6$

C. $C_3H_8$

D. $C_4H_8$

**Answer:**

Watch Video Solution

**328.** The name of the compound $CH_3 - CH_2 - CHO$ is

A. Proponal

B. Propanone

C. Ethanol

D. Ethanal

**Answer:**

Watch Video Solution

**329.** The heteroatoms present in

$CH_3 - CH_2 - O - CH_2 - CH_2Cl$

A. oxygen

B. carbon

C. hydrogen

D. chlorine

**Answer:**

Watch Video Solution

**330.** Which of the following represents saponificaiton reaction?

A. $CH_3COONa + NaOH \xrightarrow{CaO} CH_4 + Na_2CO_3$

B. $CH_3COOH + C_2H_5 \xrightarrow{H_2SO_4} CH_3COOC_2H_5 + H_2O$

C. $2CH_3COOH + 2Na \rightarrow 2CH_3COONa + H_2$

D.

$$CH_3COOC_2H_5 + NaOH \rightarrow CH_3COONa + C_2H_5OH$$

**Answer:**

Watch Video Solution

**331.** The first member of alkyne homologous series is

A. ethyne

B. ethene

C. propyne

D. methane

**Answer:**

Watch Video Solution

**332.** The number of isomers for pentane is

A. 2

B. 3

C. 4

D. 5

**Answer:**

Watch Video Solution

**333.** The hydrocarbon when the general formula $C_nH_{2n+2}$ is an

A. alkyne

B. alkene

C. alkyne

D. unsaturated compound

**Answer:**

Watch Video Solution

**334.** Which of the following is an alkyne?

A. $C_2H_6$

B. $C_6H_{12}$

C. $C_6H_{10}$

D. $C_6H_{14}$

**Answer:**

Watch Video Solution

**335.** Which of the following gives ethene when heated with conc. Sulphuric acid

A. $CH_3CHO$

B. $CH_3COOH$

C. $CH_3OH$

D. $CH_3CH_2OH$

**Answer:**

Watch Video Solution

**336.** Which of the following will decolourise bromine water?

A. $C_3H_8$

B. $C_5H_{12}$

C. $C_2H_4$

D. $C_4H_{10}$

**Answer:**

Watch Video Solution

**337.** Which of the following will not decolourise bromine water?

A. $C_4H_8$

B. $C_3H_4$

C. $C_3H_8$

D. $C_4H_6$

**Answer:**

Watch Video Solution

**338.** In the reaction

$CH_3COONa + NaOH \rightarrow$ the gas obtained is

A. $C_2H_6$

B. $C_2H_2$

C. $CH_4$

D. $C_2H_4$

**Answer:**

Watch Video Solution

**339.** Which of the following will undergo addition reactions?

A. $C_2H_4$

B. $C_2H_6$

C. $CH_4$

D. $C_3H_6$

**Answer:**

Watch Video Solution

**340.** Which of the following formula represents alkenes?

A. $C_nH_{2n+2}$

B. $C_nH_{2n-2}$

C. $C_nH_{2n}$

D. $C_nH_{2n+1}$

**Answer:**

Watch Video Solution

**341.** In the presence of concentrated $H_2SO_4$, acetic acid reacts with ethyl alcohol to produce

A. aldehyde

B. alcohol

C. ester

D. carboxylic acid

**Answer:**

Watch Video Solution

**342.** The reaction of alcohol with carboxylic acid is called

A. combustion

B. esterification

C. saponificaiton

D. none of these

**Answer:**

Watch Video Solution

**343.** An organic compound which contains an -OH functional group is called

A. aldehyde

B. alcohol

C. carboxyl

D. ester

**Answer:**

Watch Video Solution

**344.** The number of single and double bonds present in benzene are

A. 12 single and 3 double bonds

B. 6 single and 6 double bonds

C. 3 single and 3 double bonds

D. 6 single and 6 double bonds

**Answer:**

Watch Video Solution

**345.** The difference between general formula of alkenes and alkynes is of

A. $CH_2$

B. one carbon and one hydrogen atom

C. two hydrogen atoms

D. one hydrogen atom

**Answer:**

Watch Video Solution

**346.** A cabroxylic group is present in

A. ethynlene

B. methanoic acid

C. formaldehyde ethanol

D.

**Answer:**

Watch Video Solution

**347.** The functional group is an alcohol is

A. $-\overset{O}{\underset{\copyright}{||}}-O-$

B. $-\overset{O}{\underset{C}{||}}-OH$

C. $-OH$

D. $-\overset{H}{\underset{\copyright}{|}}=O$

**Answer:**

Watch Video Solution

**348.** Vinegar is a dilute solution of

A. acetic acid

B. formic acid

C. ethyl alcohol

D. acetylene

**Answer:**

Watch Video Solution

**349.** Which of the following will react with sodium metal?

A. Ethanol

B. Ethanal

C. Ethene

D. Ethane

**Answer:**

Watch Video Solution

**350.** Which of the following will give a pleasant smell of ester when heated with ethanol and a small quantity of sulphuric

acid?

A. $CH_3COOH$

B. $CH_3CH_2OH$

C. $CH_3OH$

D. $CH_3CHO$

**Answer:**

Watch Video Solution

**351.** The hydrophilic end of a synthetic detergent is

A. $CH_3 - (CH_2)_{10} - CH_2 -$

B. $-CO - Na^+$

C. $-SO_3^- Na^+$

D. $-COO^{-}Na^{+}$

**Answer:**

Watch Video Solution

**352.** Ethanol on complete oxidation gives

A. $CO_2$ and water

B. acetaldehyde

C. acetic acid

D. acetone

**Answer:**

Watch Video Solution

**353.** Ethanoic acid turns blue litmus solution

A. green

B. red

C. pink

D. bluish green

**Answer:**

Watch Video Solution

**354.** When ethanoic acid is treated with $NaHCO_3$ the gas evolved is

A. $H_2$

B. $CO_2$

C. $CH_4$

D. $CO$

**Answer:**

Watch Video Solution

**355.** Which out of the following hydrocarbons undergo addition reactiosn?

A. $C_2H_6$ and $C_3H_8$

B. $C_3H_6$ and $C_2H_2$

C. $CH_4$ and $C_2H_6$

D. $C_3H_8$ and $C_2H_2$

**Answer:**

Watch Video Solution

**356.** The main constituent of LPG is

A. butane

B. methane

C. propane

D. ethane

**Answer:**

Watch Video Solution

**357.** .....is the pollutant released from air conditioner

A. chlorofluoro carbons

B. carbon dioxde

C. methane

D. carbon monoxide

**Answer:**

Watch Video Solution

**358.** IUPAC name of the first member of homologous series of ketones is

A. Ethanone

B. Proponal

C. MethanonE

D. propanone

**Answer:**

Watch Video Solution

**359.** An alkyne has 4 numbers of hydrogen atoms what will be the number of carbon atoms in it?

A. Two

B. Three

C. Four

D. Five

**Answer:**

Watch Video Solution

**360.** Which of the following statements is false about a soap?

A. The soap solution in water is neutral and can be used to wash all kinds of fabrics

B. soap forms lather only in soft water

C. soap is a metallic salt of higher fatty acids

D. soap cannot be used in slightly acidic medium

**Answer:**

Watch Video Solution

**361.** Identify the functional group present in the following compound

$$CH_3 - \underset{Br}{\overset{CH}{|}} - CH_2 - \underset{\copyright}{\overset{O}{||}} - OH$$

A. Aldehyde

B. Bromino

C. Carboxyl

D. Both bromo and carboxyl gorup

**Answer:**

Watch Video Solution

**362.** Which of the following represents saponification reactions?

A. $CH_3COONa + NaOH \xrightarrow{CaO} CH_4 + Na_2CO_3$

B. $CH_3COOH + C_2H_5 \xrightarrow{H_2SO_4} CH_3COOC_2H_5 + H_2O$

C. $2CH_3COOH + 2Na \rightarrow 2CH_3COONa + H_2$

D.

$$CH_3COOC_2H_5 + NaOH \rightarrow rCH_3COONa + C_2H_5OH$$

**Answer:**

Watch Video Solution

**363.** The number of structural isomers of the compound having molecular formula $C_4H_9Br$ is

A. 3

B. 5

C. 4

D. 2

**Answer:**

Watch Video Solution

**364.** The total number of electrons and the number of electrons involved in the formation of various bonds present in one molecule of propanal?

A. 32 and 20

B. 24 and 20

C. 24 and 18

D. 32 and 18

**Answer:**

Watch Video Solution

**365.** The IUPAC name of $CH_3\overset{\overset{CH_3}{|}}{\underset{\underset{CH_3}{|}}{C}} - CH_3$ is

A. Neopentane

B. 2,2-dimethylpropane

C. 2-methylbutane

D. 2,3-dimethylpropane

**Answer:**

Watch Video Solution

**366.** Identify the type of reation occuring between ethene and hydrogen

A. oxidation

B. dehydration

C. addition

D. substitution

**Answer:**

Watch Video Solution

**367.** The maxium number of covalent bonds by which the two carbon atoms can be bonded to each other are

A. four

B. two

C. three

D. no fixed number

**Answer:**

Watch Video Solution

**368.** A compound has empirical formula $CH_2$ to which hydrocarbons eries does it belong?

A. Alkane

B. Cycloalkane

C. Alkyne

D. None of these

**Answer:**

Watch Video Solution

**369.** Which of the following does not belong to the same homologous series?

A. $C_2H_6$

B. $C_3H_6$ and $C_2H_2$

C. $C_4H_8$

D. $C_5H_{12}$

**Answer:**

Watch Video Solution

**370.** Which of the following will not decolourise bromine water?

A. $C_4H_8$

B. $C_3H_4$

C. $C_3H_8$

D. $C_4H_6$

**Answer:**

Watch Video Solution

**371.** The number of isomers for pentane is

A. 2

B. 3

C. 4

D. 5

**Answer:**

Watch Video Solution

**372.** Which of the following is an alkyne?

A. $C_6H_6$

B. $C_6H_{12}$

C. $C_6H_{10}$

D. $C_6H_{14}$

**Answer:**

Watch Video Solution

**373.** Which of the following formula represents alkenes?

A. $C_nH_{2n+2}$

B. $C_nH_{2n+2}$

C. $C_nH_{2n-1}$

D. CnH2n

**Answer:**

Watch Video Solution

**374.** Which hydrocarbon will react with sodium metal?

A. Propanol

B. Propanal

C. Propene

D. Propane

**Answer:**

Watch Video Solution

**375.** Ethanoic acid turns blue litmus solutions

A. green

B. red

C. pink

D. bluish green

**Answer:**

Watch Video Solution

**376.** Which of the following will decolourise bromine water?

A. $C_3H_8$

B. $C_5H_{12}$

C. $C_2H_4$

D. $C_4H_{10}$

**Answer:**

Watch Video Solution

**377.** The functional group is aldehydes is

A. $-CHO$

B. $-C=O$

C. $-COOH$

D. $-COOR$

**Answer:**

Watch Video Solution

**378.** Ethanol on complete oxidaiton gives

A. $CO_2$ water

B. acetaldehyde

C. acetic acid

D. acetone

**Answer:**

Watch Video Solution

**379.** The hydrocarbon chain end of soaps in hydrophilic

Watch Video Solution

**380.** Urea was the first organic compound prepared in the laboratory

Watch Video Solution

**381.** Ethanoic acid is the first member of caboxylic acid series

Watch Video Solution

**382.** The compound $C_5H_{12}$ has three structural isomers.

Watch Video Solution

**383.** Being soft and greasy, graphite is used to lubricate the parts of machines

Watch Video Solution

**384.** The IUPAC name of the compound

$$CH_3 - \overset{\overset{\copyright}{|}}{\underset{CH_3}{|}} = CH - CH_3 \ldots\ldots\ldots$$

Watch Video Solution

**385.** Completely pure or 100% alcohol is known as.....

Watch Video Solution

**386.** The usual by product of saponification reaction is.....

Watch Video Solution

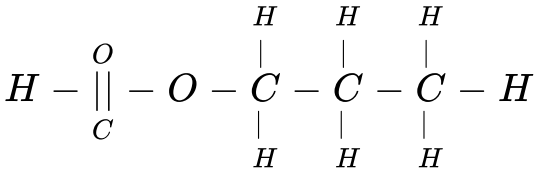
**387.** When sodium biracarbonate is added to acetic acid, effervescence is produced because of evolution of.....gas.

Watch Video Solution

**388.** The compound $CH_3CH_2CH_2CHO$ belongs to.....family and its IUPAC name is.....

Watch Video Solution

**389.** The structural formula of an ester is



Write the formula of the acid and the alcohol from which it is formed

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**390.** Write the structural formula and the IUPAC name of the one branched isomer of pentane.

Watch Video Solution

**391.** Write the formula of the functional group of alcohols and carboxylic acids.

Watch Video Solution

**392.** What are alkynes? Give their general formula.

Watch Video Solution

**393.** Draw the structures for the following compounds:

Ethanoic acid.

Watch Video Solution

**394.** Draw the structures of the following compounds:

Propanone

Watch Video Solution

**395.** Distiguish between esterificaiton and saponificaton reactions of organic compounds.

Watch Video Solution

**396.** What is hydrogenation? What is its industrial importance?

Watch Video Solution

**397.** Why does carbon from largest number of compounds?

Watch Video Solution

**398.** Why are some of the compounds saturated while others are called unsaturated? Which of these two are more reactive?

Watch Video Solution

**399.** A compound X is formed by the reaciton of a cabroxylic acid $C_2H_4O_2$ and an alcohol in presence of a few drops of $H_2SO_4$. The alcohol on oxidation with alkaline $KMnO_4$ followed by acidification gives the same carboxylic acid as used in this reaction. give the names and structures of carboxylic acid. Also write the reaction.

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**400.** A compound X is formed by the reaciton of a cabroxylic acid $C_2H_4O_2$ and an alcohol in presence of a few drops of $H_2SO_4$. The alcohol on oxidation with alkaline $KMnO_4$ followed by acidification gives the same carboxylic acid as used in this reaction. give the names and structures of alcohol. Also write the reaction.

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**401.** A compound X is formed by the reaciton of a cabroxylic acid $C_2H_4O_2$ and an alcohol in presence of a few drops of $H_2SO_4$. The alcohol on oxidation with alkaline $KMnO_4$ followed by acidification gives the same carboxylic acid as used in this reaction. give the names and structures of the compound X. Also write the reaction.

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**402.** What is the difference between the molecules of soaps and detergents chemically? Explain the cleanising action of soaps.

Watch Video Solution

**403.** An organic compound A on heating with concentrated $H_2SO_4$ forms a compound B which on addition of one mole of hydrogen in presence of Ni forms a compound C. One mole of compound C on combustion forms two moles of $CO_2$and 3 moles of $H_2O$. Identify the compounds A, B and C and write the chemical equations of the reactions involved.

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**404.** Give two chemical tests to distinguish between ethanol and ethanoic acid. Which of these two is more reactive.

Watch Video Solution

**405.** When yo add about 2 mL of acetic acid to a test tube contianing an equal amount of distilled water and leave the test tube to settle after shaking its contents then after about 5 minutes what will you observe in the test tube?

A. a clear transparent colourless solution

B. a clear transparent pink solution

C. a precipitate settling at the bottom of the test tube

D. a layer of water over the layer of acetic acid

**Answer:**

Watch Video Solution

**406.** While preparing soap a small quantity of common salt is generally added to the reaction mixture of vegetable oil and sodium hydroxide. Which one of the following may be purpose of adding common salt?

A. to reduce the basic nature of the soap

B. to make the soap neutral

C. to enhance the cleanising power of the soap

D. to favour the precipitation of the soap

**Answer:**

Watch Video Solution

**407.** Hard water is not available for an experiment. Some salts are given below:

Sodium chloride, sodium sulphate, calcium chloride, Calcium sulphate, Potassium chloride, Magnesium sulphate

Select the following a group of these salts, each member of which may be dissolved in water to make it hard.

A. I,ii,v

B. I,iii,v

C. iii,iv,vi

D. ii,iv,vi

**Answer:**

Watch Video Solution

**408.** 2mL of ethanoic acid in each of the test tube I and II. A red litmus paper was intorduced in test tube 1 and a pH paper was introducd in test tube II. The experiment was performed by four students and they reported their observations is

| Student | Action in Test tube I | Action in Test tube II |
|---|---|---|
| I | turned blue | turned pink |
| II | turned blue | turned blue |
| III | remained unchanged | turned pink |
| IV | remained unchanged | turned blue |

A. I

B. II

C. III

D. IV

**Answer:**

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**409.** What happens when acetic acid is added to a solution of potassium carbonate in a test tube? Write the equation of detecting the gas evolved.

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**410.** When a compound X in its aqueous from is added to acetic acid taken in a test tube, a gas is evolved. This gas turns lime water milky. Name the compound X and the gas evolved. Also wrie the equatoins for the reaction.

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