

Chapter-4

Worksheet-2

Q.1. 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

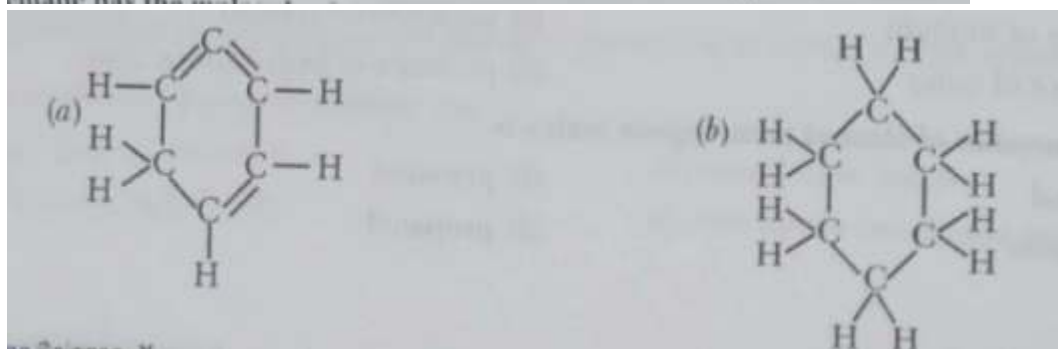
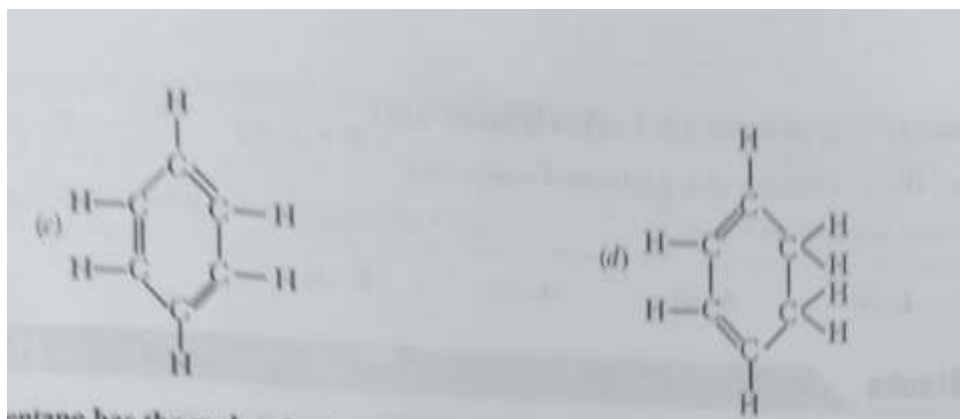
Q.2. Carbon forms four covalent bonds by sharing its four valence electrons with four univalent atoms, e.g., hydrogen. After the formation of four bonds, carbon attains the electronic configuration of

- (a) helium
- (b) neon
- (c) argon
- (d) krypton

Q.3. The name of the compound $CH_3 - CH_2 - CHO$ is

- (a) Propanal
- (b) Propanone
- (c) Ethanol
- (d) Ethanal

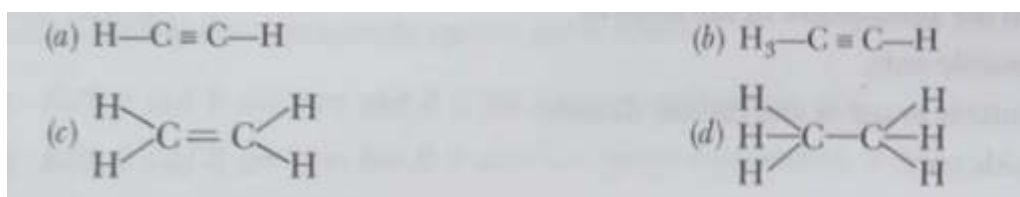
Q.4. Structural formula of benzene is



Q.5. The hetero present in $CH_3 - CH_2 - O - CH_2 - CH_2 - Cl$ are

- (i) Oxygen
- (ii) Carbon
- (iii) Hydrogen
- (iv) Chlorine
- (a) (i) and (ii)
- (b) (ii) and (iii)
- (c) (iii) and (iv)
- (d) (i) and (iv)

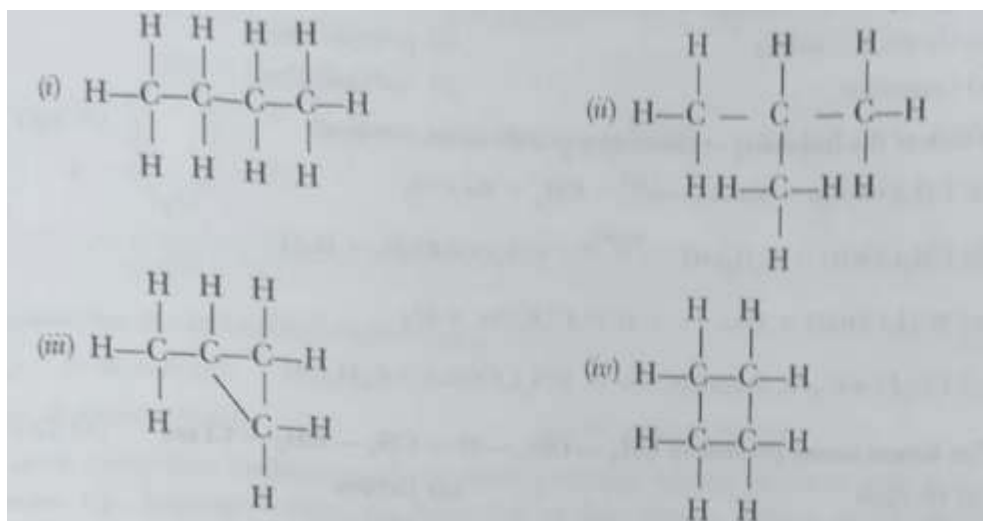
Q.6. Structural formula of ethyne is



Q.7. Which of the following is the correct representation of electron dot structure of nitrogen?



Q.8. Which of the following are correct structural isomers of butane?



- (a) (i) and (iii)
- (b) (ii) and (iv)
- (c) (i) and (ii)
- (d) (iii) and (iv)

Q.9. Fill in the Blanks

Complete the following statements with appropriate word(s) in the blank space(s).

- a. Hydrogenation of vegetable oil is _____ reaction.
- b. _____ hydrocarbons decolourise brown colour of bromine water.
- c. _____ and _____ are the two allotropes of carbon.
- d. Vinegar is _____ % solution of ethanoic acid in water.

e. Soaps react with hard water to form_____.

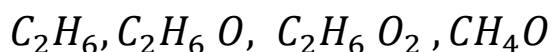
Q.10. True/False

Read each of the following statements and write if it is true or false.

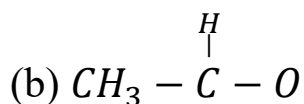
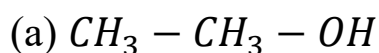
1. The functional group of chloro alkane is —Cl.
2. The first member of alkyne homologous series is ethyne.
3. Heating ethanol at 443K with excess of conc. H_2SO_4 results in the dehydration of ethanol to give cycloethane.
4. Carbon has the unique ability to form bonds with other atoms of carbon, giving rise to large molecules.
5. The next higher homologue of ethanol is pentanol.

Q.11. Define allotropy.

Q.12. Which two of the following organic compounds belong to the same homologous series?



Q.13. Name the following compounds:

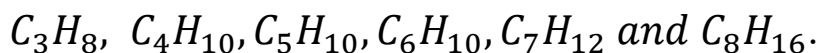


Q.14. What is a covalent bond? What type of bond exists in (i) CCl_4
(ii) $CaCl_2$?

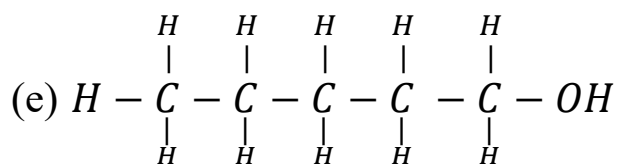
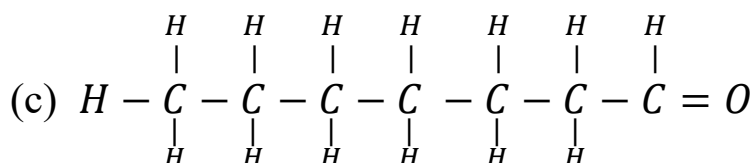
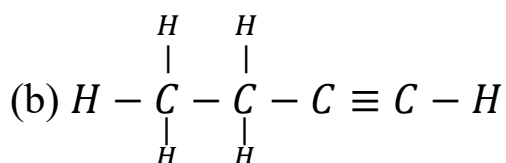
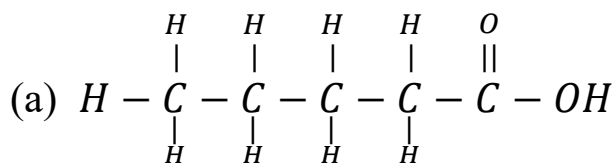
Q.15. Catenation is the ability of an atom to form bonds with other atoms of the same element. It is exhibited by both carbon and silicon. Compare the ability of catenation of the two elements.

Give reasons.

Q.16. Select the hydrocarbons which are members of the same homologous series. Give the name of each series.



Q.17. Write the names of the following compounds.



Q.18. Why are unsaturated hydrocarbons more reactive than saturated hydrocarbons?

Q.19. Write the name and molecular formula of an organic compound having its name suffixed with ‘-ol’ and having two carbon atoms in the molecule. With the help of a balanced equation indicate what happens when it is heated with excess of cone. H_2SO_4 .

Q.20. Name the gas evolved when ethanoic acid reacts with sodium carbonate. How would you identify this gas?