



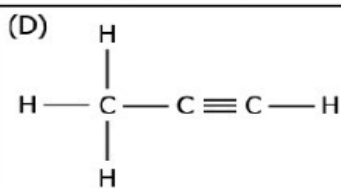
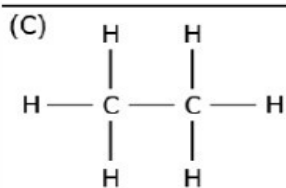
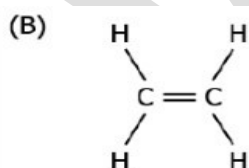
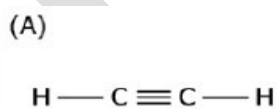
OBJECTIVE TYPE QUESTIONS

MULTIPLE CHOICE QUESTIONS

1. The electronic configuration of an element is found to be 2, 4. How many bonds can one carbon atom form in a compound?

- (a) 1
- (b) 2
- (c) 4
- (d) 6

2. The image represents the structure of a few hydrocarbon compounds.



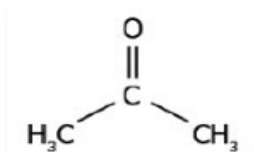
Which of these compounds can be classified as alkynes?

- (a) only (A)
- (b) only (B)

(c) both (A) and (D)

(d) both (B) and (C)

3. The image represents a carbon compound.



Which functional group is present in the compound?

(a) alcohol

(b) aldehyde

(c) carboxylic acid

(d) ketone

4. The number of covalent bonds in pentane (C_5H_{12}) is: (a)

5

(b) 12

(c) 17

(d) 16

5. The hydrocarbon which has alternate single and double bonds arranged in the form of a ring is:

(a) C_6H_{12}

(b) C_6H_{14}

(c) C_6H_6

(d) C_6H_{10}

6. Which of the following is the molecular formula of cyclobutane?

a) C_4H_{10}

b) C_4H_6

c) C_4H_8

ASSERTION-REASONING QUESTIONS

7. Assertion:- Carbon shows maximum catenation property in the periodic table.

Reason:- Carbon has small size and thus forms strong c-c bonds.

8. Assertion:- Most of the carbon compounds are good conductors of electricity.

Reason:- They do not dissociate to form ions and remain as molecules.

9. Assertion(A): Diamond is the hardest natural known substance.

Reason (R) : Diamond is used for cutting marble, granite and glass.

10. Assertion(A) : Soaps are not suitable for washing purpose when water is hard.

Reason (R) : Soaps have relatively weak cleansing action.

ONE MARK QUESTIONS

11. Name an element other than carbon which exhibits catenation. Are these compounds stable?

12. Write the name and molecular formula of the fifth member of alkane series.

13. Write the molecular formula of an alkyne containing 6 atoms of hydrogen.

14. Name the functional groups present in this compound- $CH_3COCH_2CH_2CH_2CH_3$

15. What is a homologous series?

TWO MARK QUESTIONS

16. Explain why carbon generally forms compounds by covalent bonds.

17. Atom of an element contains five electrons in its valence shell. This element is major component of air. It exists as a diatomic molecule.

(i) Identify the element.

(ii) Show the bond formed between two atoms of this element.

- (iii) Write the nature of the bond between the two atoms.
18. Why are carbon and its compounds used as fuels for most applications?
19. Draw the electron dot structure for - ethanoic acid
20. (a) What are hydrocarbons? Give examples.

THREE MARK QUESTIONS

21. Explain the nature of the covalent bond using the bond formation in CH_3Cl .
22. (i) Select saturated hydrocarbons from the following:-
 C_3H_6 , C_5H_{10} , C_4H_{10} , C_6H_{14} , C_2H_4
- (ii) Select alkene and alkyne from the following:-
 C_6H_{12} , C_3H_4 , C_2H_4 , CH_4 , C_4H_8 , C_5H_8
23. Draw the possible isomers of pentane, C_5H_{12}

PREVIUOS YEAR BOARD QUESTIONS

24. Give reason why carbon neither forms C^{4+} cations nor C^{4-} anions, but forms covalent compounds which are bad conductors of electricity and have low melting and boiling points. (2021)
25. Give reasons for the following:
(i) Element carbon forms compounds mainly by covalent bonding.
(ii) Graphite is a good conductor of electricity. (Foreign 2011)
26. Write the molecular formula of first two members of homologous series having functional group -Cl. (Delhi 2017)
27. Write the name and general formula of a chain of hydrocarbons in which an addition reaction with hydrogen is possible. State the essential condition for an addition reaction. Stating this condition, write a chemical equation giving the name of the reactant and the product of the reaction. (AI 2015, Delhi 2014)

CASE STUDY/PASSAGE BASED QUESTIONS

28. The compounds which have the same molecular formula but differ from each other in carbon atoms can be linked together in the form of straight chains, branched chains or even rings. physical or chemical properties are called isomers and the phenomenon is called isomerism. When the isomerism is due to difference in the arrangement of atoms within the molecule, without any reference to space, the phenomenon is called structural isomerism. In other words. Structural isomers are compounds that have the same molecular formula but different structural formulas, i.e., they are different in the order in which different atoms are linked. In these compounds, carbon atoms can be linked together in the form of straight chains, branched chains or even rings.
- (i) Which of the following sets of compounds have same molecular formula?**
- (a) Butane and iso butane
(b) Cyclohexane and hexene
(C) Propanal and propanone
(d) All of these
- (ii) In order to form branching, an organic compound must have a minimum of**
- (a) four carbon atoms
(b) three carbon atoms

(c) five carbon atoms

(d) any number of carbon atoms.

(iii) What are isomers? What are the isomers of butane?

FIVE MARK QUESTIONS

29. (i) What would be the electron dot structure of carbon dioxide which has the formula CO_2 ?
(ii) What would be the electron dot structure of a molecule of sulphur which is made up of eight atoms of sulphur? (Hint:-The eight atoms of sulphur are joined together in the form of a ring)
30. (i) What happens when 5% alkaline KMnO_4 solution is added drop by drop to warm ethanol taken in a test tube? State the role of alkaline KMnO_4 solution in this reaction. (Foreign 2016)
(ii) Two carbon compounds X and Y have the molecular formula C_4H_8 and C_5H_{12} respectively. Which one of these is most likely to show addition reaction? Justify your answer. Also give the chemical equation to explain the process of addition reaction in this case. (Delhi 2017).
31. Soaps and detergents are both, types of salts. State the difference between the two. Write the mechanism of the cleansing action of soaps. Why do soaps not form lather (foam) with hard water? Mention any two problems that arise due to the use of detergents instead of soaps. (Delhi 2017, AI 2015)





