

## Practice Challenge - Objective

Subject: Chemistry

Topic : Carbon and its Compounds\_Revision

Class: X

1. Ethane, with the molecular formula  $C_2H_6$ , has \_\_\_\_ covalent bonds.

- A. six
- B. seven
- C. eight
- D. nine

2. Choose the correct option based on the statements given:

Statement 1: Carbon shares electrons to form covalent bond with other elements.

Statement 2:  $C^{4+}$  and  $C^{4-}$  ions are highly unstable.

- A. Both statements are correct but statement 2 is not the correct explanation for statement 1.
- B. Both statements are correct and statement 2 is the correct explanation for statement 1.
- C. Statement 1 is wrong but statement 2 is correct.
- D. Statement 1 is correct but statement 2 is wrong.

## Practice Challenge - Objective

3. Silicon is tetravalent. But why can't it form long chain compounds like carbon?
- A. Silicon is a metalloid and cannot bond with other atoms.
  - B. Silicon is larger in size than carbon, and cannot hold the shared electron pair(s) strongly.
  - C. Silicon is smaller in size than carbon, and cannot hold the shared electron pair(s) strongly.
  - D. Silicon compounds are unreactive.

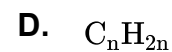
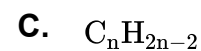
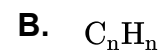
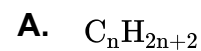
4. Select the option that will complete the homologous series given below.

$C_2H_4$ ,  $C_3H_6$ , \_\_\_\_\_,  $C_5H_{10}$ ,  $C_6H_{12}$

- A.  $C_4H_6$
- B.  $C_4H_{10}$
- C.  $C_4H_4$
- D.  $C_4H_8$

## Practice Challenge - Objective

5. The general formula for alkynes is:



6. Which amongst the following is not an allotrope of carbon?

A. Carbon dioxide

B. Fullerene

C. Diamond

D. Graphite

## Practice Challenge - Objective

7. Diamond has a \_\_\_\_\_ structure while that of graphite is \_\_\_\_\_.
- A. hexagonal layered, octahedron
  - B. tetrahedral, hexagonal layered
  - C. tetrahedral, square pyramidal
  - D. pentagonal, hexagonal layered
8. The maximum number of covalent bonds that can be formed between two carbon atoms is \_\_\_\_\_.
- A. two
  - B. five
  - C. three
  - D. four

## Practice Challenge - Objective

9. The ability of atoms of an element to combine among themselves to form long chains is called \_\_\_\_\_.

- A. catenation
- B. allotropy
- C. tetravalency
- D. isomerism

10. Which of the following pairs does not contain unsaturated hydrocarbons?

- A.  $C_4H_8$ ,  $C_3H_4$
- B.  $C_{10}H_{22}$ ,  $C_6H_{14}$
- C.  $C_2H_4$ ,  $C_6H_{12}$
- D.  $C_4H_6$ ,  $C_6H_{10}$