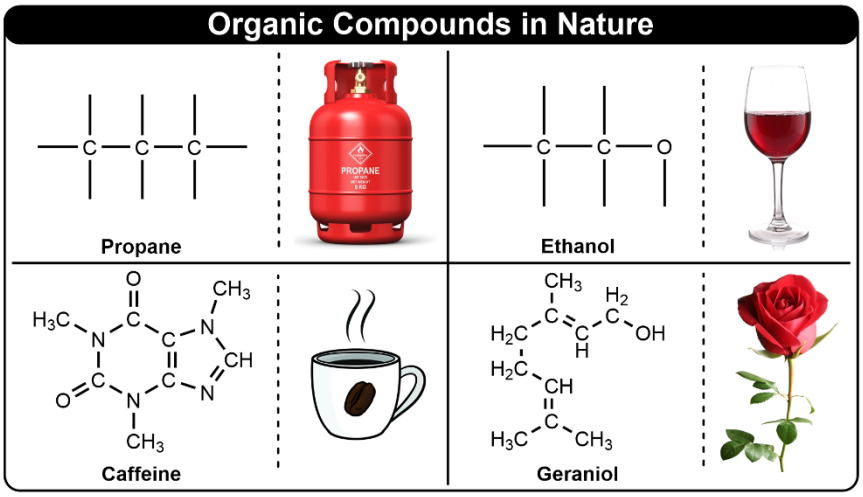
**CONCEPT:** INTRODUCTION TO ORGANIC CHEMISTRY

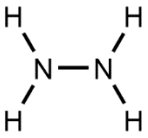
- **Organic Chemistry:** the study of structure, properties, and reactions of _____ containing compounds.
  - □ Organic compounds contain C–C and C–H bonds.
    - _____ are organic compounds that contain only C and H.
    - Many organic compounds also contain O, ___, ____, and _____.

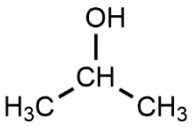



**EXAMPLE**: Which of the following is an organic compound?

a) KBr

b) $PH_3$

c) 

d) 

**PRACTICE:** Tetrachloroethane ($C_2H_2Cl_4$) has been used as an industrial solvent to produce paint removers and pesticides. It is classified as an organic compound. Which feature of this molecule makes it organic?

a) C–Cl bond

b) H–Cl bond

c) C–H bond

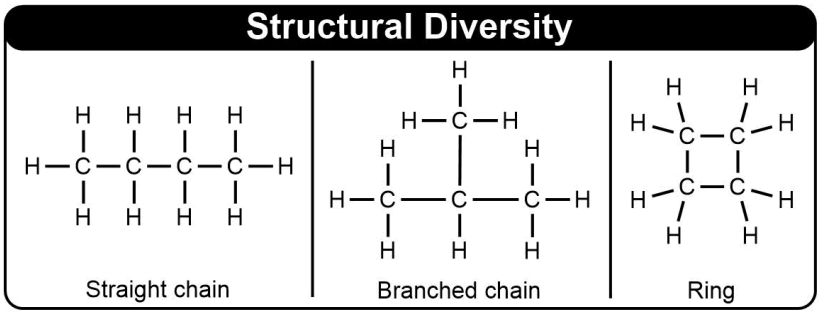
d) Cl–Cl bond

**CONCEPT:** INTRODUCTION TO ORGANIC CHEMISTRY

**Structural Diversity**

● Carbon can make very stable C–C bonds due to high _____ and short _____.

□ This leads to the formation of chains, branched structures, and rings in organic compounds.




**EXAMPLE**: Which of the following statements is incorrect about structural diversity of organic compounds?

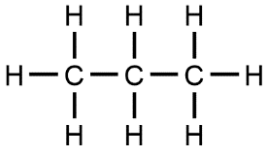
a) Carbon can form strong double and triple bonds.

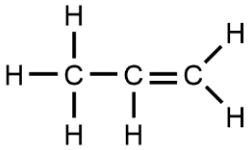
b) Small atomic radius of carbon ensures sufficient orbital overlap to form strong bonds.

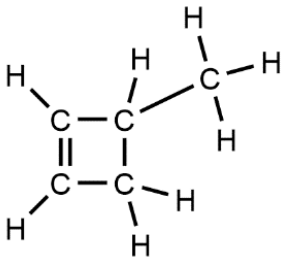
c) Carbon can form stable chains up to twelve atoms only.

d) Organic compounds containing other elements (such as O, N, or S) are very common.

**PRACTICE:** Which of the following compounds has the most branched structure?

a) 

b) 

c) 

d)