

Carbon & Hydrocarbon Practice

1. Carbon forms four covalent bonds that are directed in space toward the corners of a regular _____.
2. The electron configuration of carbon in its ground state is:
3. How many covalent bonds can a carbon atom ordinarily form?
4. Carbon atoms form bonds readily with atoms of : A) elements other than carbon, B) carbon only, C) both other elements and carbon, D) only neutral elements
5. The bonding between atoms in a layer of graphite consists of : A) single bonds only, B) double bonds only, C) alternating single and double bonds, D) bonds that are intermediate in character between single and double bonds.
6. Graphite is a good lubricant because it is arranged in layers that can slide across one another. The attractions that hold one layer to another are _____.
7. The hybridization of carbon's orbitals in the CH_4 molecule is _____. Draw it.
8. The hybridization of carbon's orbitals in the C_2H_4 molecule is _____. Draw it.
9. The hybridization of carbon's orbitals in the C_2H_2 molecule is _____. Draw it.
10. Explain why graphite conducts electricity, while diamond does not.
11. Briefly describe the geometry of each of the allotropes (what is that?) of carbon.
12. Explain why diamond conducts heat easily.