

Name _____

Organic Chemistry Practice

- ____ 1. The four single bonds of a carbon atom are directed in space towards the corners of a
a) Tetrahedron b) octahedron c) square plane d) trigonal bipyramid
- ____ 2. Which type of bonds and solids are characteristics of organic compounds?
a) Ionic bonds and ionic solids c) Covalent bonds and ionic solids
b) Ionic bonds and molecular solids d) Covalent bonds and molecular solids
- ____ 3. All organic compounds must contain the element:
a) hydrogen b) oxygen c) carbon d) nitrogen
- ____ 4. Which of the following represents methane?
a) CH₄ b) C₂H₄ c) C₃H₄ d) C₄H₁₀
- ____ 5. Which of the following represents butene?
a) CH₄ b) C₂H₄ c) C₃H₄ d) C₄H₈
- ____ 6. Which of the following represents nonyne?
a) CH₄ b) C₃H₆ c) C₆H₁₄ d) C₉H₁₆
- ____ 7. Which of the following is a saturated hydrocarbon?
a) ethane b) ethyne c) propene d) propyne
- ____ 8. Which of the following is not a saturated hydrocarbon?
a) ethane b) propane c) butene d) pentane
- ____ 9. Which compound is a member of the same homologous series as C₃H₆?
a) C₂H₄ b) C₂H₆ c) C₃H₄ d) C₃H₈
- ____ 10. In which group could the hydrocarbons all belong to the same homologous series?
a) C₂H₂, C₂H₄, C₂H₆ b) C₂H₄, C₃H₄, C₄H₈ c) C₂H₄, C₂H₆, C₃H₆ d) C₂H₄, C₃H₆, C₄H₈

Fill in the blank:

11. An organic compound that has all _____ bonds will end in -ane and is classified as an alkane.
12. An organic compound that has one _____ bond will end in -ene and is classified as an alkene.
13. An organic compound that has one _____ bond will end in -yne and is classified as an alkyne.
14. Butene is an organic compound with _____ carbon atoms and a _____ bond.
15. Heptyne is an organic compound with _____ carbon atoms and a _____ bond.
16. Ethane is an organic compound with _____ carbon atoms and all _____ bond.
17. Write the chemical formulas for the following:
Alkane where n = 2 Alkene where n = 5 Alkyne where n = 8 Alkane where n = 8

_____ C₂H₆ _____

18. For the following hydrocarbons,
 - classify if it is an alkane, alkene or alkyne
 - Draw & name the picture accordingly

a) C_2H_4 = alk _____

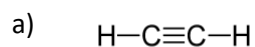
b) C_4H_{10} = alk _____

c) C_3H_6 = alk _____

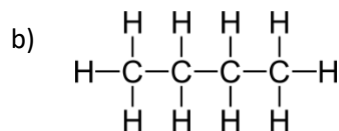
d) C_5H_{12} = alk _____

e) C_6H_{10} = alk _____

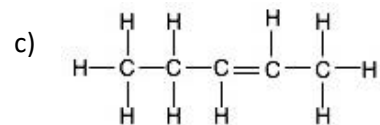
19. For the following hydrocarbons,
 - classify if it is an alkane, alkene, or alkyne
 - name the picture accordingly



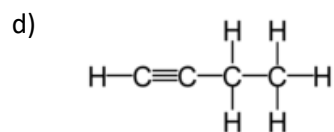
alk _____



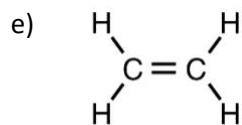
alk _____



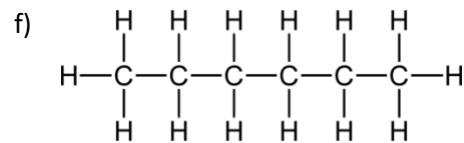
alk _____



alk _____



alk _____



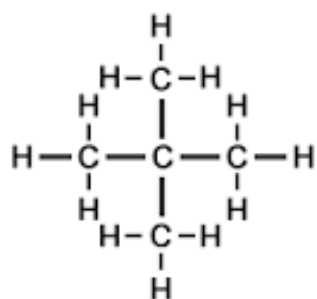
alk _____

20. Draw or name the following branched hydrocarbons.

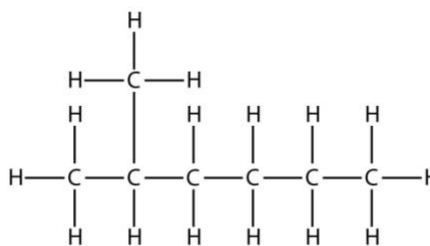
a) 2-methyl-4-ethyl-hexane

b) 2,2,3-trimethylbutane

c)



d)



e) 2-ethyl-1-pentene

f)

