

### Chapter 1 Introductory Pre-test

You may have a NOTECARD for this test.

#### Multiple Choice

Identify the choice that best completes the statement or answers the question.

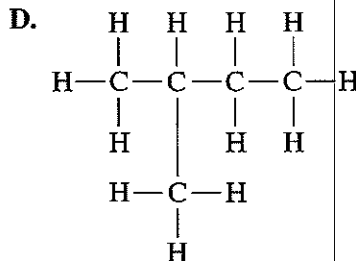
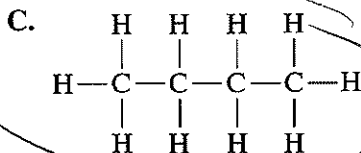
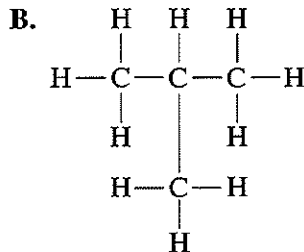
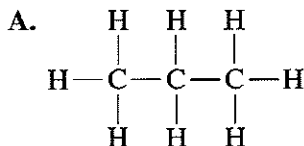
\_\_\_\_\_ 1. (1-1) How many covalent bonds can a carbon atom usually form?

- a. 2
- b. 3
- c. 4
- d. 5

\_\_\_\_\_ 2. (1-1) Which of the following is an alkane?

- a. propyne
- b. propane
- c. propene
- d. propyl bromide

only single Bonds



\_\_\_\_\_ 3. (1-1) In the figure above, what is the structural formula for butane?

- a. A
- b. B
- c. C
- d. D

Short Answer

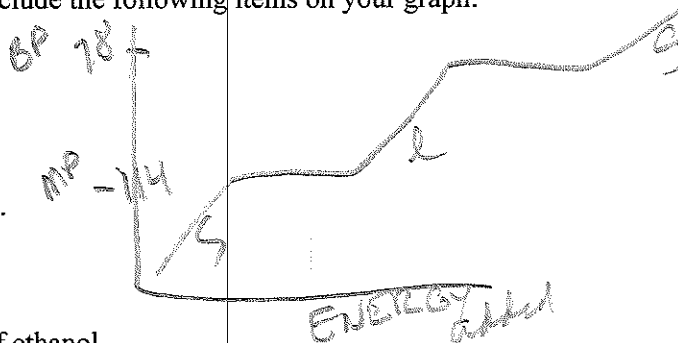
11. (1-3) For each of the following determine if it is a Chemical or physical reaction and indicate Why.

- a. Chewing gum *Physical - manipulation*
- b. hair growing on your head *Chemical - Food → hair*
- c. Paper burning *Chemical - heat, new substance*
- d. paper decomposing *Chemical - New substance*

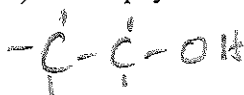
12. Ethanol is a common additive to gasoline used in automotive engines. It has a boiling point of 78C and melts at -114C.

a) (1-3) Draw a heating curve of Ethanol. Include the following items on your graph:

- Titles of the graph
- solid, liquid, gas
- Melting point
- Boiling point



b) (1-1) Draw a physical structure of ethanol.



c) (1-2) Write out the combustion reaction of ethanol.



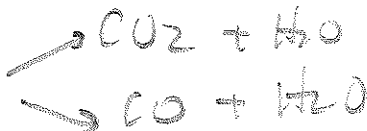
13. (1-3) In our class we boiled water in a paper bowl. Explain how it might be possible to boil water but does not burn the paper bowl. *Temp does not exceed 312° F*

14. An automotive engine, not functioning at correctly, burns a significant amount of automotive oil along with the gasoline. This results in a significant amount of smoke exiting the tail pipe.

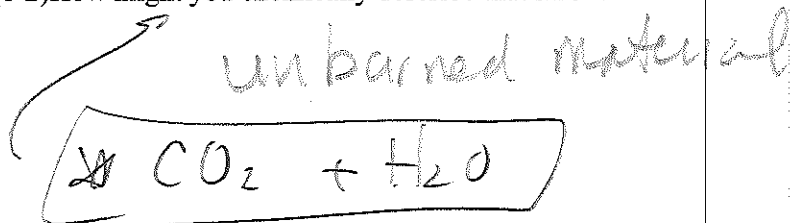
a) (1-3) Engine oil is a large hydrocarbon. What elements are needed to build engine oil?

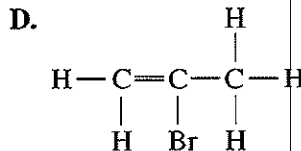
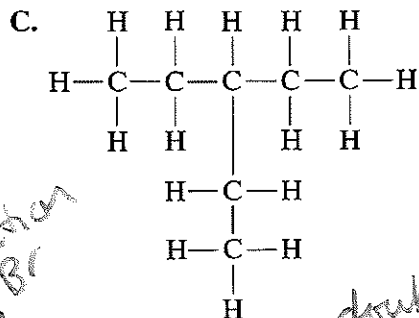
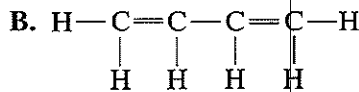
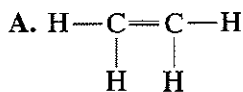


b) (1-2) If combustion of these hydrocarbons takes place as incomplete vs. complete combustion, what is the difference?



c) (1-2) How might you chemically describe that smoke?



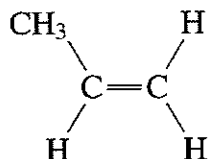


4. (1-1) In the figure above, name the compound in diagram D.

- a. 2-bromopropyne      c. 2-bromopropane  
 b. 2-bromopropene      d. 2,2-bromopropene

5. (1-1) Which hydrocarbons have triple covalent bonds?

- a. alkanes      c. alkenes  
 b. alkynes      d. aromatic hydrocarbons



6. (1-1) Name the alkene in the figure above.

- a. ~~propene~~      c. trans-2-butene  
 b. propene      d. cis-2-butene

7. (1-3) A physical property may be investigated by

- a. melting ice.      c. allowing silver to tarnish.  
 b. letting milk turn sour.      d. burning wood.

8. (1-3) One chemical property of matter is

- a. boiling point.      c. reactivity.  
 b. texture.      d. density.

9. (1-3) The melting of candle wax is classified as a physical change because it

- a. produces no new substances.  
 b. transfers energy.  
 c. absorbs heat.  
 d. changes the chemical properties of wax.

10. (1-3) A physical change occurs when a

- a. peach spoils.      c. bracelet turns your wrist green.  
 b. copper bowl tarnishes.      d. glue gun melts a glue stick.