Name: _____ Class: _____ Date: _____ ID: A

Chapter 1 Introductory Pre-test

You may have a NOTECARD for this test.

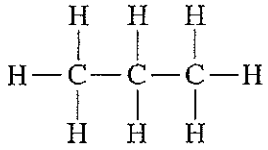
Multiple Choice
Identify the choice that best completes the statement or answers the question.

d 1. Which of the following is not a branch of chemistry
   a. Biochemical
   b. Organic
   c. Inorganic
   (d.) Mircro

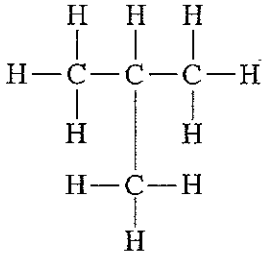
c 2. How many covalent bonds can a carbon atom usually form?
   a. 2
   b. 3
   (c.) 4
   d. 5

b 3. Which of the following is an alkane?
   a. propyne
   (b) propane
   c. propene
   d. propyl bromide

A.



B.



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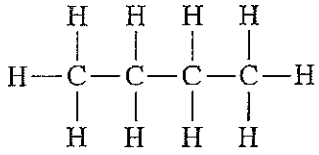

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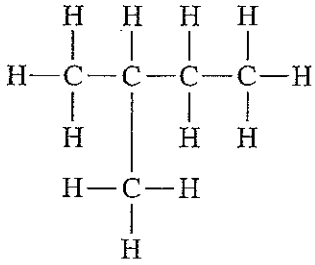
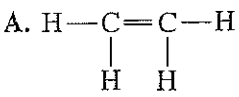
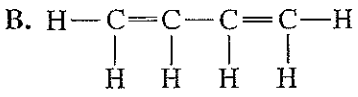
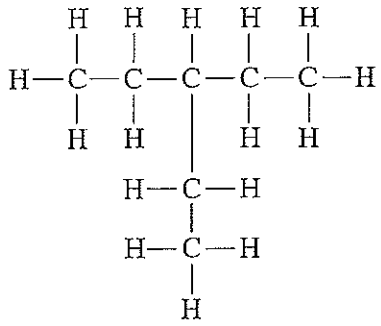


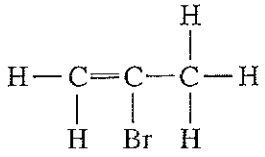
c 4. In the figure above, what is the structural formula for butane?
   a. A
   b. B
   (c.) C
   d. D

Name: _____ ID: A

A. 

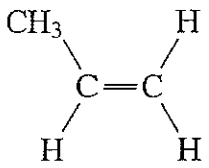
B. 

C. 

D. 

b 5. In the figure above, name the compound in diagram D.
a. 2-bromopropyne
c. 2-bromopropane
b. 2-bromopropene
d. 2,2-bromopropene

b 6. Which hydrocarbons have triple covalent bonds?
a. alkanes
c. alkenes
b. alkynes
d. aromatic hydrocarbons



b 7. Name the alkene in the figure above.
a. ethene
c. trans-2-butene
b. propene
d. cis-2-butene

a 8. A physical property may be investigated by
a. melting ice.
c. allowing silver to tarnish.
b. letting milk turn sour.
d. burning wood.

c 9. One chemical property of matter is
a. boiling point.
c. reactivity.
b. texture.
d. density.

a 10. 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.

d 11. 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.

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hort Answer

12. For each of the following determine if it is a Chemical or physical reaction and indicate Why.

a. Chewing gum physical - no new substances

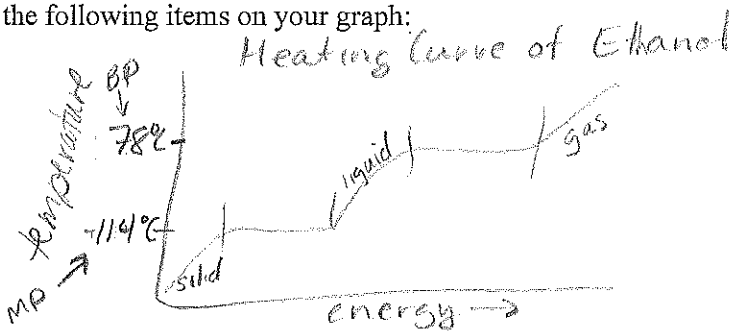
b. hair growing on your head chemical - news substances, growth

c. Paper burning chemical - news substances, combustion

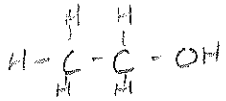
d. paper decomposing chemical - news substances, decay

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

a) 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) Draw a physical structure of ethanol.



c) Write out the combustion reaction of ethanol. $C_2H_5OH + 3O_2 \rightarrow 2CO_2 + 3H_2O$

14. 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. Boiling point of water is 100°C, and amount of energy needed to combust paper is higher (415°C)

15. 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) Engine oil is a large hydrocarbon. What elements are needed to build engine oil?

hydrogen and carbon

b) If combustion of these hydrocarbons takes place as incomplete vs. complete combustion, what is the difference? *amount of O_2 present as reactant

products { complete combustion produces $CO_2 + H_2O$
incomplete combustion produces $CO + H_2O$

c) How might you chemically describe that smoke?

mixture of CO_2, CO, H_2O, and hydrocarbons that did not get burned