Date _____ Hour _____ Name _____

Unit 2 RETAKE REVIEW – Properties of Matter Con Chem A

1. How are elements different from compounds?

2. How are mixtures different from pure substances?

3. How are homogeneous mixtures different from heterogeneous mixtures?

4. Identify the following as **ELEMENT**, **COMPOUND**, **HETEROGENEOUS MIXTURE** or **HOMOGENEOUS MIXTURE**.
   a. Fruit punch
   b. Nitrogen
   c. Carbon dioxide
   d. Magnesium hydroxide
   e. Iodine
   f. Oil and vinegar
   g. Salt and Pepper
   h. Carbonated Pop
   i. Flat Pop
   j. Sodium Chloride
   k. Oxygen
   l. Water

5. What are the five pieces of evidence that would tell you a chemical change has occurred?

6. Identify the following as **Physical Change** or **Chemical Change**, if it is chemical explain what piece of evidence you have.
   a. Two clear liquids are mixed and the color changes to pink
   b. Two clear liquids are mixed and the color stays clear
   c. Two liquids are mixed and a solid settles to the bottom
   d. Mix vinegar with baking soda; bubbles
   e. A piece of paper is torn in two
   f. A firework explodes in the skiy

7. When a reaction ABSORBS energy is this endothermic or exothermic?
   _____

8. When a reaction RELEASES energy is this endothermic or exothermic?
   _____

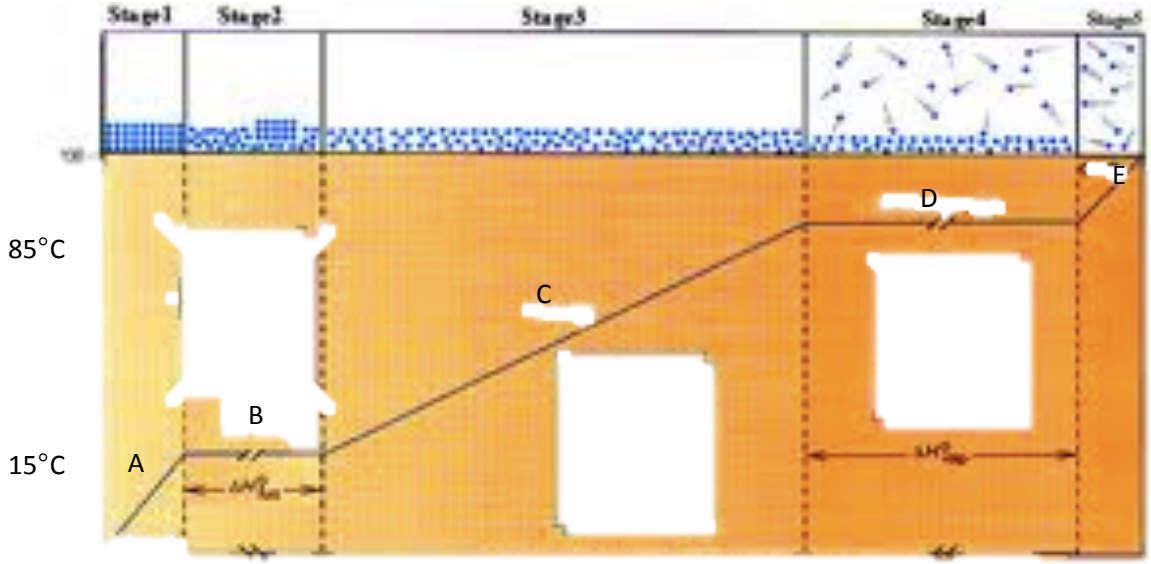
9. Identify the following as **Endothermic** or **Exothermic**.
   a. Dry ice sublimates
   b. Water freezing
   c. Ice melting
   d. Water evaporates out of a pond
   e. Water condensing on your windshield

10. In heterogeneous mixtures you can see _____.

11. Homogeneous mixtures appear _____ throughout the substance.

12. Identify the following as **CONDUCTION** or **CONVECTION**.
    a. Best for Solids
    b. Best for Liquids and Gases
    c. Particles vibrate faster bumping into other particles causing them to vibrate and transfer energy.
    d. Particles that are less dense rise, cool off and sink back down to the heat source, where they warm up again.

13. Using the complete heating curve below to answer the following questions:
LABEL ALL THE SECTIONS BEFORE ANSWERING QUESTIONS – IT MAKES IT EASIER!!!!!!!



a. At what letter is the substance a liquid? _____
b. At what letter is the substance a solid? _____
c. At what letter is the substance a gas? _____
d. At what letter is a solid warming? _____
e. At what letter is a solid melting? _____
f. At what letter is a liquid evaporating? _____
g. At what letter is a liquid warming? _____
h. At what letter is a gas warming? _____
i. What process is happening at LETTER D? _____
j. What letter(s) show a temperature change? _____
k. What letter(s) show temperature is constant? _____
l. At what letter is the entropy highest? _____
m. At what letter is the entropy lowest? _____

n. When there is a FLAT portion of the graph, what is happening to the temperature of the substance?

o. When there is a flat portion of the graph, what is happening to the entropy of the substance?

14. What is the melting/freezing point of water in degrees Celsius? _____

15. What is the boiling/evaporating point of water in degrees Celsius? _____

16. Based on the freezing and boiling points is the substance in the graph water? _____

17. Entropy is the measurement of _____.

18. During melting temperature _____.

19. During melting entropy _____.

20. During freezing temperature _____.

21. During freezing entropy _____.

22. When ice is being heated temperature _____.

23. When ice is being heated entropy _____.

24. List the <u>states of matter</u> in order of INCREASING ENTROPY. Lowest to highest.

25. What are the properties associated with the SOLID state of matter? Draw a picture.
    Entropy –
    Particle Movement –
    Shape –
    Volume –

26. What are the properties associated with the LIQUID state of matter? Draw a picture.
    Entropy –
    Particle Movement –
    Shape –
    Volume –

27. What are the properties associated with the GASEOUS state of matter? Draw a picture.
    Entropy –
    Particle Movement –
    Shape –
    Volume –

28. **Melting** is a change from _____ to _____.
29. **Evaporation** is a change from _____ to _____.
30. **Freezing** is a change from _____ to _____.
31. **Condensation** is a change from _____ to _____.
32. **Sublimation** is a change from _____ to _____.

33. Explain how to separate a mixture of **iron filings**, **bouncy balls**, **salt**, and **sand**.

34. When a solid **melts**:
    a. Is energy absorbed or released? _____

    b. What is happening to the arrangement of particles during the evaporation process?

    c. How are energy and arrangement of particles related during the melting process?

35. How are **elements** and **compounds** <u>different</u>?

36. How are **elements** and **compounds** <u>similar</u>?

37. How are **mixtures** <u>different</u> from **chemical compounds**?