Name_____ Period_____

Chapter 1 Study Guide Practice

1. Identify states of matter with the following properties:

   a. Fixed shape:

   b. Fixed volume:

   c. Compressible:

   d. Diffuses easily:

   e. Least energy:

   f. Most energy:

   g. Least dense:

2. Write the terms for the following state of matter changes:

   a. Solid to liquid _____
   b. Liquid to gas _____
   c. Gas to liquid _____
   d. Liquid to solid _____
   e. Solid to gas _____
   f. Gas to solid _____

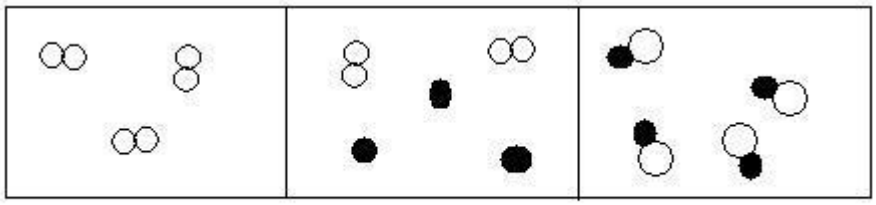
3. Are the following physical (P) or chemical (C) properties? Are they intensive (I) or extensive (E)?

   a. Decomposition _____
   b. PbI_2 is yellow _____
   c. melting point of 45°C _____
   d. NaCl is soluble _____
   e. Texture is rough _____
   f. Oxidation _____

4. Which of the following processes is a chemical change?

   a. $C_6H_6(g) \rightarrow C_6H_6(l)$
   b. $NH_3(s) \rightarrow NH_3(l)$
   c. $H_2CO_3(g) \rightarrow H_2O(g) + CO_2(g)$
   d. $H_2O_2(l) \rightarrow H_2O_2(g)$

5. Classify the following as a pure substance or mixture. Identify element, compound, molecule.



_____ _____ _____

6. Name the diatomic elements (all 7):

7. How many significant digits are in the following numbers?

   a. 400.00 _____ b. 0.004001_____

   c. 210 _____ d. 0.002100_____

8. Round the following number to three significant digits.

   a. 275,794,054 _____ c. 4.399621 _____

   b. 0.004521600 _____ d. 0.200000046 _____

9. Solve the following math problems. Make sure your answer has the correct number of significant digits and units.

   a. 456.875 mL + 12.3 mL = _____

   b. 3.2 cm x 296.5 cm x 0.00566 cm = _____

   c. 3.45×10^{22} g^3 / 2.1×10^{26} g= _____

10. Put the following into scientific notation.

    a. 294,300,000 _____

    b. 0.004200 _____

    c. 365.90 _____

11. Put the following into standard notation.

    a. 6.4×10^{4} _____

    b. 9.600×10^{-5} _____

    c. 4.210×10^{1} _____

12. What is the metric base unit for:

    a. Mass _____ b. volume _____ c. length _____

13. The density of a diamond is 3.51 g/mL. What is the volume of a diamond that masses 52.2538 grams?

14. How many milliliters are in 236.5 dL of water?

15. How many kg are in 498.5 μg?

16. How many pints are in 2.65 gallons of orange juice?

17. Tristan ran 0.985 miles. How many meters is this?

18. A swimming pool holds 48,350 liters of water. What is this volume in ft^3?