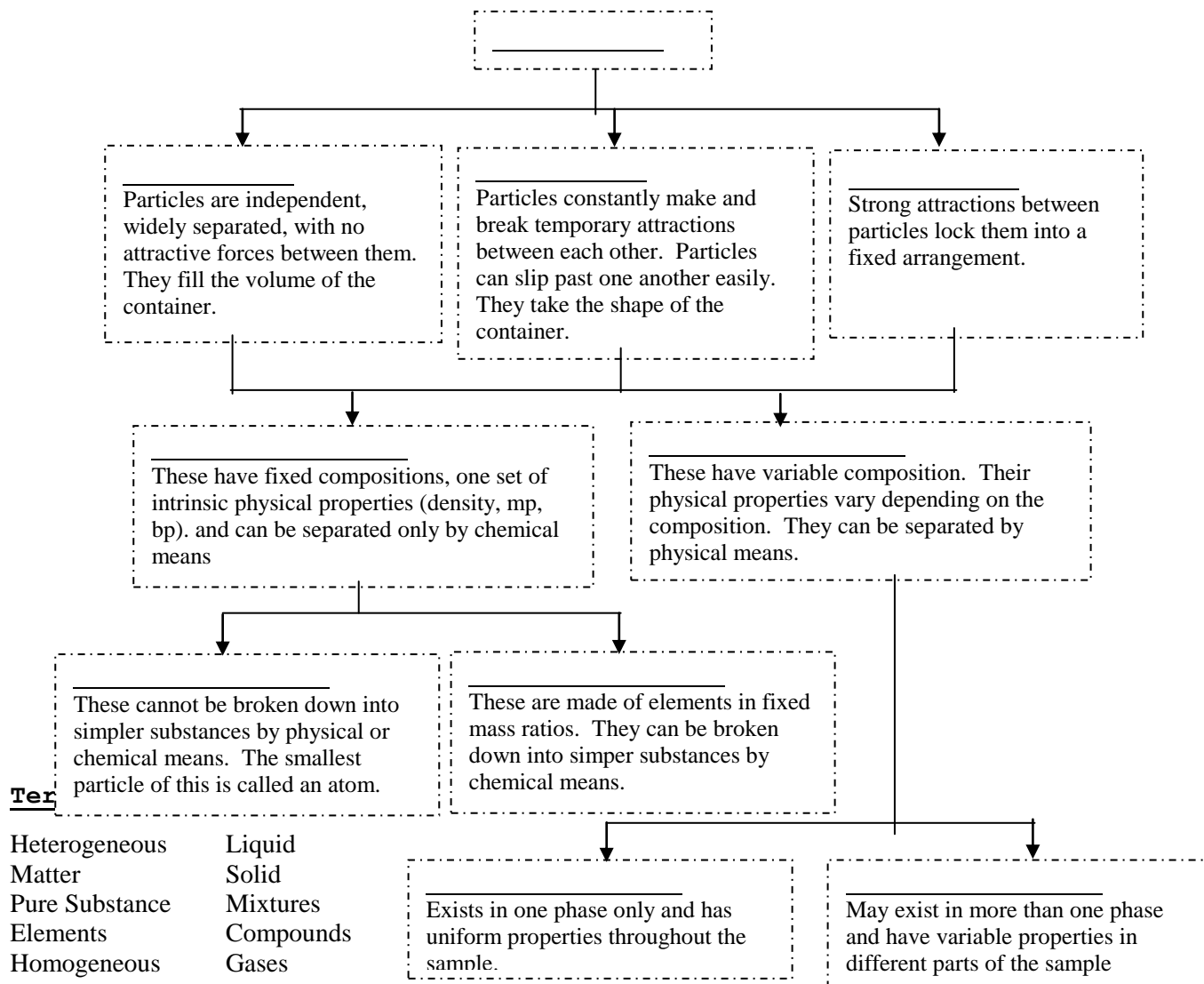


## Chemistry: Unit 4 – Concepts Review

To prepare to do well on the Unit 4 test, you should assemble your notes, the worksheets, objectives sheet, and review them, preferably in a small group where you can draw from each other's understanding.

1. Fill in the blanks in the table with the words in the list below.



2. What is the difference between a pure substance and a mixture? Describe the characteristics of mixtures.

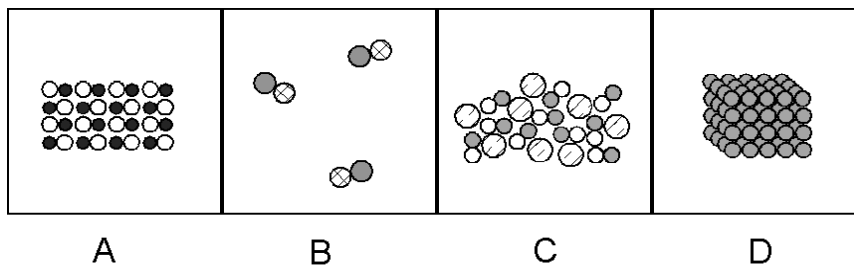
Describe the contents of each square in 3 different ways, using the terms:

- element, compound, mixture;
- atoms, molecules;
- solid, liquid and gas.

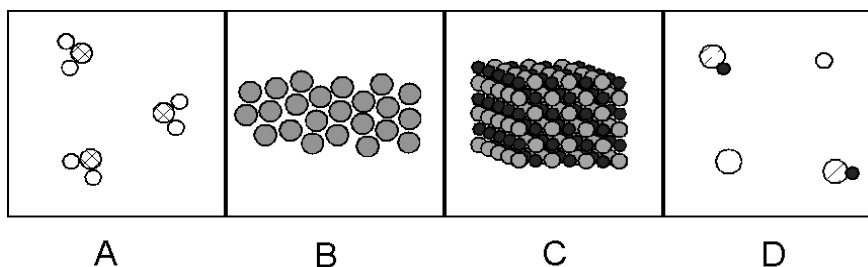
} **Each** square needs to have a description from **a, b & c**  
Include **all** descriptions that are true for that box.

**Provide a short explanation for each.**

3.



4.

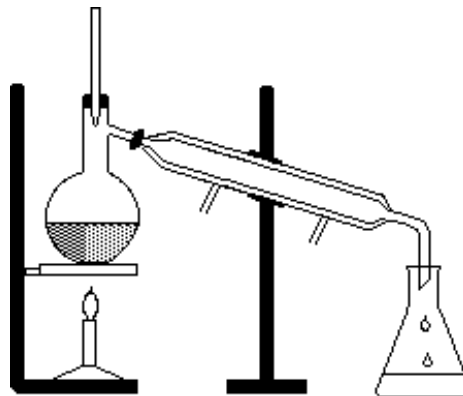
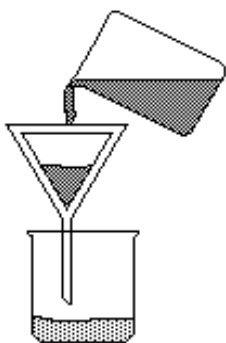


5. Identify each of the following changes as a **physical change** or **chemical change**.  
**Explain** your answers.

- burning wood
- grinding coffee beans
- silver spoon tarnishes
- freezing water

6. Describe how you would separate a mixture of ethanol (boiling point of 78.3°C) and water, **collecting** both the water and the ethanol.

7. **Identify** the separation techniques pictured below. For each technique, **state what physical property** allows the substances to be separated. **Which technique** would be useful to separate a mixture of sand and salt? Of salt and water?



**Name:**

**Property:**

**Which mixture?**

8. What is the law of definite proportions?
9. Explain, using particle diagrams, how the law of multiple proportions supports an atomic model of matter. (Review WS4 for quantitative problems)
10. What are the four major ideas of Dalton's atomic theory?