1. Which formula represents a homogeneous mixture?
   A) H₂O(l)  B) H₂S(g)  C) NaH(s)  D) HCl(aq)

2. Which statement is an identifying characteristic of a mixture?
   A) A mixture can consist of a single element.
   B) A mixture can be separated by physical means.
   C) A mixture must have a definite composition by weight.
   D) A mixture must be homogeneous.

3. Any substance composed of two or more elements that are chemically combined in a fixed proportion is
   A) an isomer  B) an isotope  C) a solution  D) a compound

4. By which process is a precipitate most easily separated from the liquid in which it is suspended?
   A) neutralization  B) distillation  C) condensation  D) filtration

5. Which mixture can be separated by using the equipment shown below?
   A) NaCl(aq) and SiO₂(s)
   B) NaCl(aq) and C₆H₁₂O₆(aq)
   C) CO₂(aq) and NaCl(aq)
   D) CO₂(aq) and C₆H₁₂O₆(aq)

6. Which physical property makes it possible to separate the components of crude oil by means of distillation?
   A) melting point  B) conductivity  C) solubility  D) boiling point
7. Describe a procedure to physically remove the water from mixture 1.

8. Determine the volume of the Fe filings used to produce mixture 2.

9. Base your answer to the following question on the information below.

   Carbon forms molecular compounds with some elements from Group 16. Two of these compounds are carbon dioxide, CO₂, and carbon disulfide, CS₂.
   Carbon dioxide is a colorless, odorless gas at room temperature. At standard temperature and pressure, CO₂(s) changes directly to CO₂(g).
   Carbon disulfide is formed by a direct reaction of carbon and sulfur. At room temperature, CS₂ is a colorless liquid with an offensive odor. Carbon disulfide vapors are flammable.

   Identify one physical property and one chemical property of CS₂.

10. Which process represents a chemical change?

   A) melting of ice
   B) corrosion of copper (RUST)
   C) evaporation of water
   D) crystallization of sugar
Answer Key

REVIEW # 2: MATTER AND ENERGY

1. D
2. B
3. D
4. D
5. A
6. D
7. – Heat mixture 1 until all the water evaporates. – Allow the water to evaporate.
8. – 2.02 cm³
10. B