

Name _____

1) A method of obtaining oxygen that illustrates a physical change and does not involve a chemical change is

- (A) heating mercuric oxide.
- (B) heating potassium chlorate.
- (C) decomposition of hydrogen peroxide.
- (D) distillation of liquid air.
- (E) electrolysis of water.

2) As far as can be detected by analytical balances, in any chemical reaction, the sum of the masses of all the reactants

- (A) always equals the sum of the masses of all the products.
- (B) is less than that of the products if a precipitate is formed.
- (C) is greater than that of the products if a gas is formed.
- (D) usually equals that of the products.
- (E) never equals that of the products.

3) At standard pressure, which has the highest average kinetic energy?

- (A) $\text{H}_2\text{O}(g)$ at $110\text{ }^\circ\text{C}$
- (B) $\text{H}_2\text{O}(s)$ at $-10\text{ }^\circ\text{C}$
- (C) $\text{H}_2\text{O}(l)$ at $25\text{ }^\circ\text{C}$
- (D) $\text{H}_2\text{O}(l) \rightleftharpoons \text{H}_2\text{O}(g)$ at $70\text{ }^\circ\text{C}$
- (E) $\text{H}_2\text{O}(s) \rightleftharpoons \text{H}_2\text{O}(l)$ at $0\text{ }^\circ\text{C}$

4) In any chemical reaction energy is

- (A) always absorbed.
- (B) always released.
- (C) released as heat.
- (D) usually not involved.
- (E) either absorbed or released.

5) Which molecule has the same number of electrons as a water molecule?

- (A) F_2
- (B) HF
- (C) HCl
- (D) H_2S
- (E) H_2O_2

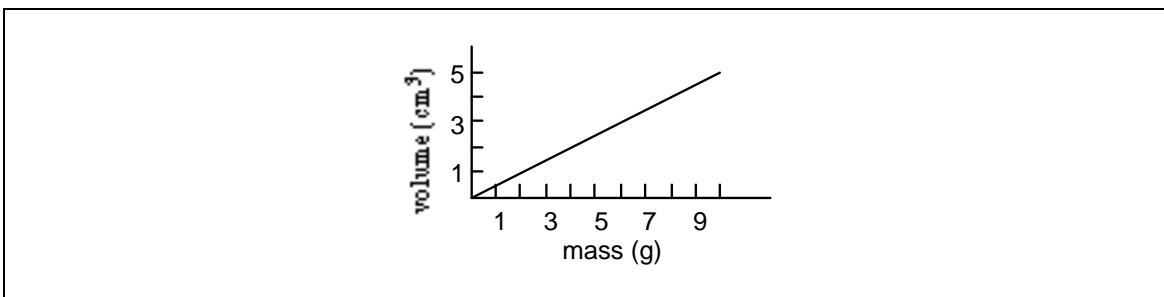
6) A particle containing 5 protons, 4 electrons, and 6 neutrons has about the same mass as

- (A) 5 protons.
- (B) 11 neutrons.
- (C) 10 protons.
- (D) 15 protons.

7) Which property depends upon the quantity of a substance present?

- (A) boiling point
- (B) density
- (C) temperature
- (D) mass

8) The graph was obtained by plotting the volume of a material vs. the mass of that same material.



What is the density of the material?

- (A) 1.5 g/cm^3 (B) 0.67 g/cm^3 (C) 2.0 g/cm^3 (D) 0.50 g/cm^3

9) The number 149,000,000 is usually written in scientific notation as

- (A) 0.149×10^9 (B) 149×10^6 (C) 1.49×10^8 (D) 1490×10^5 (E) 14.9×10^7

10) Which unit represents $1 \times 10^{-3} \text{ mol}$?

- (A) decimole (B) millimole (C) kilomole (D) micromole