Quiz #2

1. Which of the following is a homogeneous mixture?
    a. Ethanol
    b. Saline solution
    c. Silver coin
    d. Chocolate chip cookie

2. Which property of ethanol would be considered a chemical property?
    a. It is colorless
    b. Melts at -114.1 °C
    c. Has a density of 0.789 g/mL
    d. Is flammable

3. Which of the following would be considered a chemical change?
    a. Frost forming on a window
    b. Your car starting to rust
    c. Cutting up vegetables
    d. Melting lead in a forge

4. Which process is exothermic?
    a. A camp fire
    b. Adding heat to a pot of coffee
    c. Melting snow
    d. The chemical reaction in a cold pack

5. 15.5 grams of Reactant A completely reacts with 67.8 grams Reactant B. How many grams of product is formed?
    a. 83.3 grams
    b. 67.8 grams
    c. 15.5 grams
    d. 52.3 grams

6. What is 67.5 °F in degrees Celsius?
    a. 67.5 °C
    b. 19.7 °C
    c. 153.5 °C
    d. 154 °C

7. What is 323.5 °C in Kelvins?
    a. 596.7 Kelvin
    b. 323.5 Kelvin
    c. 50.4 Kelvin
    d. 50.35 Kelvin

8. Which of the following statements describes a liquid?
    a. Definite shape
    b. Compressible
    c. Vibrations of atoms or molecules about a fixed point
    d. Definite volume

9. Ethanol changes from a liquid to a gas at 76 °C. What is this transition called?
    a. Condensation
    b. Melting
    c. Sublimation
    d. Evaporation

10. Which of the following methods would best separate one liquid from a different liquid in a homogeneous solution?
    a. Filtration
    b. Decantation
    c. Distillation

11. How many joules are in 788 calories?
    a. 3.30×10^3 joules
    b. 188 joules
    c. 16.5 joules
    d. 2090 joules

12. Calculate the heat required to raise the temperature of a 75.8 gram sample of silver from 60.0 °C to 96.5 °C? The heat capacity of silver is 0.235 J/g°C.
    a. 1.07×10^3 joules
    b. 1.72×10^3 joules
    c. 6.50×10^2 joules
    d. 452 joules

13. A lead fishing sinker with a mass of 25.0 grams absorbs 38.5 Joules of heat. If the initial temperature was 10.5 C, what is the final temperature of the sinker? The heat capacity of lead is 0.128 J/g°C.
    a. 12.0 °C
    b. 22.5 °C
    c. 32.1 °C
    d. 52.0 °C

14. What does the atomic number of an element specify?
    a. Number of protons in the nucleus of an atom
    b. Number of electrons outside of the nucleus of an atom
    c. Number of neutrons in the nucleus of an atom
    d. Number of protons and neutrons in the nucleus of an atom

15. What subatomic particle is not found in the nucleus?
    a. Electron
    b. Neutron
    c. Proton

16. What is the atomic number (Z) of tungsten?
    a. 184
    b. 183.85
    c. 74.55
    d. 74

17. How many electrons are in the ion P^{3-}?
    a. 15
    b. 12
    c. 18
    d. 14

18. How many electrons are in Ga^{3+}?
    a. 31
    b. 28
    c. 34
    d. 37

19. How many neutrons at in Co-60?
    a. 60
    b. 33
    c. 27
    d. 30

20. How many protons and neutrons are in Plutonium-239?
    a. 94 protons and 145 neutrons
    b. 145 protons and 94 neutrons
    c. 94 protons and 239 neutrons
    d. 145 protons and 239 neutrons

21. Which of the following elements are in the alkali family?
    a. Beryllium
    b. Barium
    c. Yttrium
    d. Sodium

22. Which of the following elements are in the same period as antimony?
    a. Phosphorus
    b. Tin
    c. Sulfur
    d. Bismuth

23. Who discovered the electron?
    a. Rutherford
    b. Dalton
    c. Thomson
    d. Millikan

24. Silicon has three naturally occurring isotopes: Si-28 with a mass of 27.9769 amu and a natural abundance of 90.21%, Si-29 with a mass of 28.9765 amu and a natural abundance of 5.690% and Si-30 with a mass of 29.9737 amu and a natural abundance of 4.100%. Calculate the atomic mass of silicon.
    a. 28.12 amu
    b. 28.09 amu
    c. 28.05 amu
    d. 28.16 amu

25. Bromine has two naturally occurring isotopes and an atomic mass of 79.904 amu. If the natural abundance of Br-81 is 49.31% and has a mass of 80.9163 amu, what is the mass of Br-79?
    a. 79.11 amu
    b. 77.55 amu
    c. 78.92 amu
    d. 79.00 amu