Review- Chapter 1 and 2

1. A certain liquid has a density of2.67 g/cm3. 134.0 g of this liquid would occupy a volume of \_\_\_\_\_\_\_\_\_\_m L.

A)1.99 X 10-3

B) 50.2

C) 3.58

D) 35.8

E) 0.502

2. The correct result of the molecular mass calculation for  is \_\_\_\_\_\_\_\_\_\_\_\_\_.

(4 × 15.9994) + 32.066 + (2 × 1.0079) =

A) 98.08

B) 98.079

C) 98.074

D) 98.838

E) 98.84

3. A small amount of salt dissolved in water is an example of a \_\_\_\_\_\_\_\_\_\_.

A) homogeneous mixture

B) heterogeneous mixture

C) compound

D) pure substance

E) solid

4. Aluminum reacts with a certain nonmetallic element to form a compound with the general formula AlX. Element X is a diatomic gas at room temperature. Element X must be \_\_\_\_\_\_\_\_\_\_.

A) oxygen

B) fluorine

C) chlorine

D) nitrogen

E) sulfur

5. Which pair of elements would you expect to exhibit the greatest similarity in their physical and chemical properties?

A) H, Li

B) Cs, Ba

C) Ca, Sr

D) Ga, Ge

E) C, O

|  |  |  |
| --- | --- | --- |
| 6. | Mass of an empty container | 3.0 grams |
|  | Mass of the container plus the solid sample | 25.0 grams |
|  | Volume of the solid sample | 11.0 cm3 |

The data above were gathered in order to determine the density of an unknown solid. The density of the sample should be reported as

(A) 0.5 g/cm3 (B) 0.50 g/cm3 (E) 2.27 g/cm3

(C) 2.0 g/cm3 (D) 2.00 g/cm3

7. An student determines the density of an unknown solid to be 15.79 g/ml. The accepted value is 18.85 g/ml. What is the student’s percent error?

Define precision and give an example.

Define accuracy and give an example.

Read the following statements. Choose which of these words best describes each statement:

a. Mixtures in general c. Heterogeneous Mixtures e. Elements

b. Solutions d. Substances f. Compounds

\_\_\_\_8. Made of two or more elements which are chemically combined

\_\_\_\_9. Pure metals such as iron, copper, silver and nickel are in this category

\_\_\_\_10. A homogeneous mixture where the components are completely uniform throughout

\_\_\_\_11. Components making this up keep their identifying properties

\_\_\_\_12. Cannot be broken down into simpler substances by ordinary chemical means

\_\_\_\_13. Can be separated by simple physical means like distillation, filtration, etc.

\_\_\_\_14. Examples include the following mixed together: oil and vinegar, salt and pepper, soil

\_\_\_\_15. All samples of this have identical properties like boiling point, color, and density which can help identify it.

\_\_\_\_16. Is not uniform in composition. It has two or more phases.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Isotope | Isotope Notation | Atomic # | Protons | Electrons | Neutrons |
| 17. | Oxygen-16 |  |  |  |  |  |
| 18. | Bromine-80 |  |  |  |  |  |
| 19. | Uranium-235 |  |  |  |  |  |
| 20. | Copper-64 |  |  |  |  |  |

21. If you wanted to separate iron filings from sand, you would use a \_\_\_\_\_\_\_\_.

A: funnel

B: filter

C: magnet

22. The process used to separate heterogeneous mixtures of solids and liquids is called \_\_\_\_\_\_\_\_\_\_\_\_.

A: filtration

B: crystallization/ evaporation

C: distillation

D: chromatography

23. \_\_\_\_\_\_\_\_\_\_\_\_ is a separation technique that uses the boiling points of various substances to separate mixtures.

A: filtration

B: crystallization/evaporation

C: distillation

D: chromatography

24. A compound containing only carbon and hydrogen has a carbon-to hydrogen mass ratio of 9.36. Which carbon-to-hydrogen ratio is possible for another compound composed only of carbon and hydrogen?

A. 11.89 B. 3.12 C. 4.56 D. 7.13 E. 2.45

25. 18K gold has a density of 14.9g/cm3. If a piece of gold foil has a mass of 250g and a thickness of 1.58 cm, what is the area of the gold?

26. Convert 268.8 ounces to milligrams. ( 1 lb = 16 ounces, 1 lb = 453.6 grams)

27. What is the average atomic mass of Niobium, based on this mass spectrometer results?

