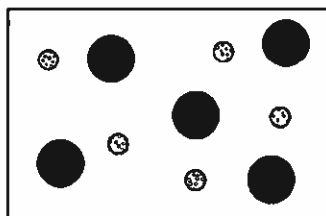
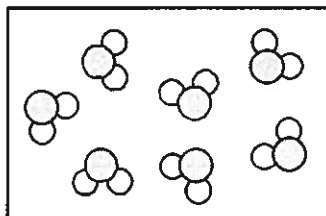


Name: _____

- ___ 1) Matter is defined as anything that occupies space and has
 A) a definite shape C) mass
 B) odor D) color
- ___ 2) Which of the following can *not* be decomposed into simpler substances?
 A) mixtures B) solutions C) compounds D) elements
- ___ 3) Which could be the chemical formula of an element?
 A) AB B) ab C) Ab D) aB
- ___ 4) Element A and element B become chemically bonded together to form substance C. Substance C must be
 A) a solution B) an element C) a mixture D) a compound
- ___ 5) Which of the following statements describes a characteristic of *all* compounds?
 A) Compounds can be decomposed by chemical means.
 B) Compounds can be decomposed by physical means.
 C) Compounds contain two elements, only.
 D) Compounds contain one element, only.
- ___ 6) Which of the following is an example of a compound?
 A) Na B) O₂ C) CO₂ D) Ar
- ___ 7) The particle diagram below represents a sample of matter.

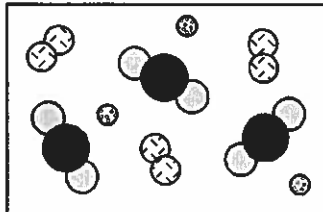
Which *best* describes the composition of the sample?

- A) a single element C) a mixture of elements
 B) a mixture of compounds D) a single compound
- ___ 8) The particle diagram below represents a sample of matter.

Which *best* describes the composition of the sample?

- A) a mixture of compounds C) a single element
 B) a single compound D) a mixture of elements

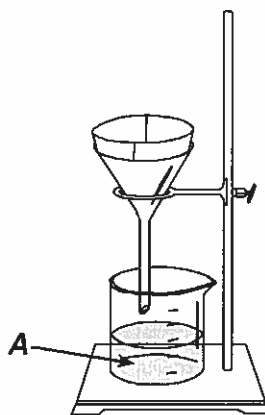
- ___ 9) The particle diagram below represents a sample of matter.



Which *best* describes the composition of the sample?

- A) a mixture of elements and compounds
 B) a single compound
 C) a mixture of elements
 D) a mixture of compounds
- ___ 10) In an equation, what symbol would indicate a mixture?
 A) (g) B) (aq) C) (l) D) (s)
- ___ 11) A true solution is *best* described as a
 A) heterogeneous mixture
 B) heterogeneous compound
 C) homogeneous mixture
 D) homogeneous compound
- ___ 12) What process is used to separate a mixture of liquids based on a difference in boiling point?
 A) chromatography
 B) distillation
 C) titration
 D) filtration
- ___ 13) What process is used to separate the components of a mixture based on differences in solubility?
 A) distillation
 B) titration
 C) filtration
 D) chromatography

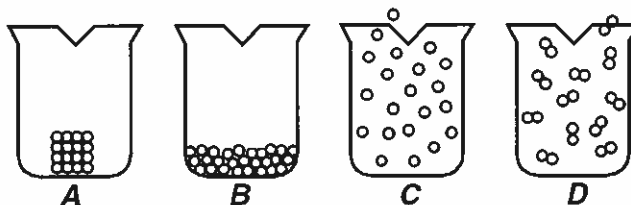
- ___ 14)



What separation procedure uses the laboratory apparatus shown above?

- A) distillation
 B) chromatography
 C) titration
 D) filtration
- ___ 15) Which of the following is a chemical property of copper?
 A) It reacts in moist air to produce green copper carbonate.
 B) It has a shiny metallic luster.
 C) It is a good conductor of heat and electricity.
 D) It melts when heated to 1083DC.
- ___ 16) Which substance can *not* be decomposed by a chemical change?
 A) copper
 B) water
 C) mercury (II) oxide
 D) potassium chlorate
- ___ 17) When a substance was dissolved in water, the temperature of the water increased. This process is described as
 A) exothermic, with the absorption of energy
 B) endothermic, with the absorption of energy
 C) endothermic, with the release of energy
 D) exothermic, with the release of energy

- ___ 18) Energy of position or stored energy is also called
 A) activation energy
 B) chemical energy
 C) potential energy
 D) kinetic energy
- ___ 19) As electrical energy is converted into heat energy, the total amount of energy in the system
 A) remains the same
 B) increases
 C) decreases
- ___ 20) What unit is used to express the amount of energy absorbed or released during a chemical reaction?
 A) torr
 B) gram
 C) joule
 D) degree
- ___ 21) What is the specific heat capacity of $\text{H}_2\text{O}(\text{l})$?
 A) 1.0 J/gdK
 B) 2,259 J/g
 C) 4.2 J/gdK
 D) 333.6 J/g
- ___ 22) How many joules are equivalent to 35 kilojoules?
 A) 35,000 joules
 B) 3,500 joules
 C) 0.35 joule
 D) 0.035 joule
- ___ 23) As ice cools from 273 K to 263 K, the average kinetic energy of its molecules will
 A) decrease
 B) remain the same
 C) increase
- ___ 24) What Kelvin temperature is equal to -33°C ?
 A) -33 K
 B) 306 K
 C) 240 K
 D) 33 K
- ___ 25) The particle diagrams below represent elements at STP.



- Which particle diagram *best* represents a substance in the solid state?
 A) A
 B) B
 C) C
 D) D
- ___ 26) In an equation, which symbol would indicate a gas?
 A) $\text{NH}_3(\text{aq})$
 B) $\text{NH}_3(\text{l})$
 C) $\text{NH}_3(\text{g})$
 D) $\text{NH}_3(\text{s})$
- ___ 27) Which set of properties does a substance such as $\text{CO}_2(\text{g})$ have?
 A) no definite shape but definite volume
 B) definite shape and definite volume
 C) no definite shape and no definite volume
 D) definite shape but no definite volume
- ___ 28) In which sample are the particles arranged in a regular geometric pattern?
 A) $\text{N}_2(\text{g})$
 B) $\text{NaCl}(\text{aq})$
 C) $\text{HCl}(\text{l})$
 D) $\text{I}_2(\text{s})$
- ___ 29) At what point do a liquid and a solid exist at equilibrium?
 A) sublimation point
 B) boiling point
 C) melting point
 D) vaporization point
- ___ 30) The amount of energy needed to change a given mass of ice to water at constant temperature is called the heat of
 A) formation
 B) condensation
 C) crystallization
 D) fusion
- ___ 31) In substances that sublime, the intermolecular forces of attraction are
 A) strong and the vapor pressure is high
 B) strong and the vapor pressure is low
 C) weak and the vapor pressure is high
 D) weak and the vapor pressure is low

- ___ 70) The atomic mass of an element is defined as the weighted average mass of that element's
- A) least abundant isotope
 - B) radioactive isotopes
 - C) naturally occurring isotopes
 - D) most abundant isotope