Chemistry End of Unit Test Review Honors

Name:_____

SPS2e. Apply the Law of Conservation of Matter by balancing the following types of chemical equation – synthesis, decomposition, single replacement, double replacement.

1. ___ $C_{10}H_8$ + ___ $O_2 \rightarrow$ ___ H_2O + ___ CO_2

2. ___ $BaCl_2$ + ___ $Na_2SO_4 \rightarrow$ ___ $BaSO_4$ + ___ NaCl

3. ___ Mg + ___ $H_2O \rightarrow$ ___ $Mg(OH)_2$ + ___ H_2

4. ___ P + ___ $Cl_2 \rightarrow$ ____ PCl_3

5. ___ HgO $\rightarrow$ ___ Hg + ___ O_2

SPS3a. Students will differentiate among alpha and beta particles and gamma radiation.

6. This type of radiation is generated when an atom gives off a neutron.
    a. Alpha
    b. Beta
    c. Gamma
    d. Delta
7. This type of radiation needs to be blocked by at least two inches of concrete or steal.
    a. Alpha
    b. Beta
    c. Gamma
    d. Omega
8. Which type of radiation might TSA use at airports to see through clothes but not through skin as they check for weapons and contraband?
    a. Alpha
    b. Beta
    c. Gamma
    d. Psi

SPS3b. Students will differentiate between fission and fusion.

9. All stars, including our Sun, use this kind of nuclear energy:
    a. Fission
    b. Fusion
    c. Factual
    d. Fructis
10. This kind of nuclear energy is obtained when one large atom breaks down into 2 or more smaller atoms.
    a. Fission
    b. Fusion
    c. Funion
    d. Fussy Onion

SPS3c. Students will explain the process half-life as related to radioactive decay.

11. If the half-life of palladium-103 is 17 days, how long will it take a 32 g sample to decay to 4 g?

12. A 208g sample of Sodium-24 decays to 13.0g in 60 hours. What is the half-life of Sodium-24?

13. Potassium-42 has a half-life of 12.4 hours. How much of an 848 g sample of potassium-42 will be left after 62.0 hours?

SPS6. Students will investigate the properties of solutions.

a. Describe solutions in terms of

- **solute/solvent**
- **conductivity**
- **concentration**

b. Observe factors affecting the rate a solute dissolves in a specific solvent.

c. Demonstrate that solubility is related to temperature by constructing a solubility curve.

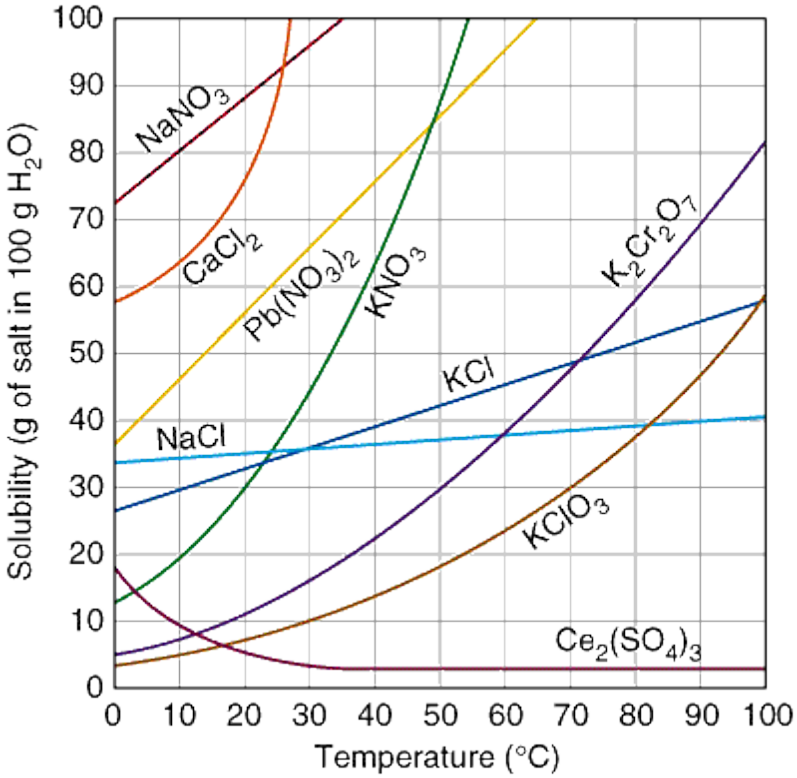
14. In a solution of sugar water, what acts as the solvent?
    a. Water
    b. Sugar
    c. Glass
    d. Air
15. In a carbonated beverage such as Coca-Cola, which acts as the solute?
    a. Water
    b. Carbon Dioxide
    c. Aluminum
    d. Plastic

16. Which will hold the most solute?
    a. 100 mL of water at 5˚C
    b. 100 mL of water at 10˚C
    c. 100 mL of water at 15˚
    d. 100 mL of water at 20˚C

17. Which will dissolve the fastest?
    a. Rock candy
    b. A sugar cube
    c. Small sugar crystals like in a bag you buy.
    d. Powdered sugar

18. What is known as the “Universal Solvent”?
    a. Ethyl Alcohol
    b. Acetone
    c. Hydrochloric Acid
    d. Dihydrogen monoxide

Use the following diagram to answer Questions #19 & #20



19. At approximately what temperature does the solubility of sodium chloride, NaCl, match the solubility of potassium dichromate, $K_2Cr_2O_7$?
    a. 30˚C
    b. 50˚C
    c. 60˚C
    d. 83˚C
20. Which of the following is least soluble at 50˚C?
    a. KNO_3
    b. $K_2Cr_2O_7$
    c. $Pb(NO_3)_2$
    d. $Ce_2(SO_4)_3$