

Final Exam Review Worksheet

- 1) How many milligrams are there in 420 micrograms?

- 2) How many feet are there in 341 centimeters? (There are 2.54 centimeters in 1 inch)

- 3) How many significant figures are in the following numbers?
 - a) 4.30 _____
 - b) 1020 _____
 - c) 120 _____
 - d) 1020.010 _____

- 4) How many protons, neutrons, and electrons are there in ^{40}K ?

- 5) What is the electron configuration of mercury?

- 6) Name the following chemical compounds:
 - a) PbBr_2 _____
 - b) NH_3 _____
 - c) P_4 _____
 - d) CaS _____
 - e) H_2SO_4 _____
 - f) $\text{V}(\text{CO}_3)_2$ _____
 - g) P_2O_5 _____

- 7) Write the chemical formulas for the following compounds:
- a) ammonium nitrate _____
 - b) fluorine _____
 - c) boron trichloride _____
 - d) iron (III) phosphate _____
 - e) nitric acid _____
 - f) potassium carbonate _____
 - g) dinitrogen tetrachloride _____
- 8) How many grams of methane are there in 1.23×10^{24} molecules?
- 9) How many grams of carbon dioxide will be made when 100 grams of methane burn in an excess of oxygen?
- 10) If 45 grams of carbon dioxide were actually formed from the reaction in problem #9, what is the percent yield of this reaction?
- 11) Name the intermolecular force most important for each of the following compounds:
- a) ammonia _____
 - b) boron trichloride _____
 - c) hydrogen fluoride _____

Final Exam Review Worksheet

- 1) How many milligrams are there in 420 micrograms?
0.42 mg

- 2) How many feet are there in 341 centimeters? (There are 2.54 centimeters in 1 inch)
11.2 feet

- 3) How many significant figures are in the following numbers?
 - a) 4.30 **3**
 - b) 1020 **3**
 - c) 120 **2**
 - d) 1020.010 **7**

- 4) How many protons, neutrons, and electrons are there in ^{40}K ?
19 protons, 21 neutrons, 19 electrons

- 5) What is the electron configuration of mercury?
 **$1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^2 4d^{10} 5p^6 6s^2 4f^{14} 5d^{10}$
 $[\text{Xe}] 6s^2 4f^{14} 5d^{10}$**

- 6) Name the following chemical compounds:
 - a) PbBr_2 **lead (II) bromide**
 - b) NH_3 **ammonia**
 - c) P_4 **phosphorus**
 - d) CaS **calcium sulfide**
 - e) H_2SO_4 **sulfuric acid**
 - f) $\text{V}(\text{CO}_3)_2$ **vanadium (IV) carbonate**
 - g) P_2O_5 **diphosphorus pentoxide**

- 7) Write the chemical formulas for the following compounds:
 - a) ammonium nitrate **NH_4NO_3**
 - b) fluorine **F_2**
 - c) boron trichloride **BCl_3**
 - d) iron (III) phosphate **FePO_4**
 - e) nitric acid **HNO_3**
 - f) potassium carbonate **K_2CO_3**
 - g) dinitrogen tetrachloride **N_2Cl_4**

- 8) How many grams of methane are there in 1.23×10^{24} molecules?
32.7 grams
- 9) How many grams of carbon dioxide will be made when 100 grams of methane burn in an excess of oxygen?
275 grams
- 10) If 45 grams of carbon dioxide were actually formed from the reaction in problem #9, what is the percent yield of this reaction?
16.4%
- 11) Name the intermolecular force most important for each of the following compounds:
- | | |
|----------------------|-----------------------------|
| a) ammonia | hydrogen bonding |
| b) boron trichloride | Van der Waals forces |
| c) hydrogen fluoride | hydrogen bonding |