

Chemistry
Quiz 2
(November 2007)

Name: _____

- D) How many moles are present in 2.45×10^{23} molecules of CH_4 ?
- E) How many grams are there in 3.4×10^{24} molecules of NH_3 ?
- F) How much does 4.2 moles of $\text{Ca}(\text{NO}_3)_2$ weigh?
- G) If $\text{Ca}(\text{NO}_3)_2$ completely dissolves in water (all ions separate), then how many molecules of NO_3 are there in 4.2 moles of $\text{Ca}(\text{NO}_3)_2$? How many atoms of Ca will we have?
- H) How many molecules are there in 0.024 Kg of FeF_3 ?
- I) How many grams are there in 1×10^{24} molecules of BCl_3 ?

J) How many grams are in 4.5 moles of sodium fluoride?

K) Arrange the following compounds in order of increasing bond strength
CO, HF, HCl, NaCl, NaF

L) Write the electron configuration and orbital system of Ti^{2+}

3) Write the Lewis structures for the following compounds (2 pts):

A) $(\text{CO}_3)^{2-}$

B) $(\text{NH}_4)^+$

4) Write the electron configurations for the following elements: (4 pts)

A) The element with atomic number of 33

B) The element in group 2 and period 5

C) Vanadium

D) ${}_{85}\text{At}$

EC)

- 1) How many moles of electrons are there in 2 moles of F_2 in neutral state?
- 2) How many moles are in 68 grams of copper (II) hydroxide?
- 3) How many grams of potassium are in 3.3 moles of potassium sulfite?
- 4) How many grams are in 2.3×10^{-4} moles of calcium phosphate?