Part I: Nomenclature

A) Discuss with your group how to distinguish between molecular/ionic compounds. (2 min)

Molecular:

Ionic:

B) Name or give the formula for the following compounds. Indicate in the space to the right whether the compound is <u>ionic, molecular, a weak acid or strong acid. </u>(8 min)

Compound	Name or Formula	Type
C_2H_6		
$Hg(NO_2)_2$		
H_2O_2		
$HNO_2(aq)$		
$FeCrO_4$		
Cesium phosphide		
Acetic acid		
Cobalt (II) peroxide		
Perchloric acid		

Part II: Dimensional Analysis and Significant Figures

A) You may refer to your text and math/sig figs handout for help. Indicate the number of significant figures there are in each of the following measure values. (3 min)

246.32 _____   107.854 _____   100.3 _____   0.678 _____

1.008 _____   0.00340 _____   14.600 _____   0.0001 _____

700000 _____   350.670 _____   1.0000 _____   320001 _____

B) Calculate the answers to the appropriate number of significant figures. Use scientific
   notation where appropriate. (15 min)

$45.76 \times 0.00025 =$ _____

$6.47 \div 64.5 =$ _____

$167.8 \div 0.042 =$ _____

$28.367 \div (3.74 - 2.99) =$ _____

$4278 \times (0.07 + 0.93) =$ _____

$(6.8 + 4.7) \times 17.44 =$ _____

$(86.11 - 85.49) \div 28.26$ _____

$$\frac{(14.86 + 13.7) \times (65.346 - 4.10)}{(43.888 - 32.888)} =$$ _____

C) Use dimensional analysis to solve the following problems. Include all units and correct
number of significant figures. (17 min)

Dimensional analysis:

Convert 15.3 km to μm.
Convert 12.66 in^2 to μm^2
Convert 55 miles per hour to meters per sec
If the fuel efficiency of an automobile is 21 miles per gallon, what is its fuel efficiency in kilometers per liter? (1 gallon = 3.785 L)