**Homework #4: Chemistry 1013 Fall 2017**

**Due Friday 13 October in class 35 pts**

**Your name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**0) Name us:**

**a) N3F6 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ b) CaCl2\_\_\_\_\_\_\_\_\_\_\_\_\_\_ FeO\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**d) Na2CrO4 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ e) CuSO4 \_\_\_\_\_\_\_\_\_\_\_\_\_**

**1) Express the following decimal values in scientific notation**

**a) 0.00016 g \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**b) 150,000 m \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**c) 0.000000001 s \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**1) Express the following scientific notation values in decimal notation**

**a) 1.5\*10-6 g\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ b) 3.5\*109 m\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**2) Express the following values using the best prefixed value.**

**Example: 3000 m = 3 km**

**a) 9\*10‑9 s \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**b) 60,000 m \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**c) 4\*10-6  s \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**d) 0.005 g \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**3.Convert to meters:**

**a) 10 Mm \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**b) 5 dm \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**c) 120 nm \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**4. Convert to oC (see pp 126-7) 5. Convert to K (see pp 126-7)**

**a) -40 oF \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ a) 100 oC \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**b) 100 K \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ b) -100 oF ­­­­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**6. Problen 4.23a\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Problem 4.23d\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**(write down the volumes to the correct sig fig count)**

**7. How many significant figures in:**

**0.0001000 \_\_\_\_\_\_\_ 100\_\_\_\_\_\_\_\_ 100.00\_\_\_\_\_\_\_\_ 6.02\*1023 \_\_\_\_\_\_\_\_\_\_\_**

**8. Compute the following expressions to the correct number of significant figures**

**1.00-0.0001 +5 = \_\_\_\_\_\_\_\_\_\_ 6.00/2.0= \_\_\_\_\_\_\_\_\_\_\_ 3.00 + (2.0000\*4.0)=\_\_\_\_\_\_\_\_\_\_\_\_\_**

**9. Circle all the incorrect equalities:**

**a) 1 cg = 0.001 g b) 5.6 dL = 0.56 L c) 100 ng = 10‑9 g d) 65 Tb= 650 Gb**

**10. Convert:**

**a) 1.75\*10-6 Mg to cg \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**b) 3.22 \*104 μm to dm \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**