Chem11 Moles : Test-100

1) 1.00 moles equals _____ .

2) Find the mass in grams (to one decimal place) of one mole of the following :

a) oxygen atoms _____ b) potassium atoms _____

c) argon atoms _____ d) chlorine molecules ____

e) iron atoms _____ f) P_4 molecules _____

3) How many moles are there in :

a) 14.0 grams of N. _____ b) 80.2 grams of Ca _____

c) 49.3 grams of gold _____ d) 9.1 grams of Zr _____

4) How many grams are there in each of the following?

a) 3.00 moles of Cr _____ b) 0.25 moles of He _____

c) 13.8 moles of Pt _____ d) 0.083 moles of Pb _____

5) How many **ATOMS** are there in each of the following?

a) 1.00 moles of S atoms _____ b) 3.00 moles of H_2 _____

c) 0.176 mole of P atoms _____ d) 4.7 moles of Ag _____

6) Find the molar mass (to one decimal place) of :

a) CO_2 b) $AgClO_3$ c) $B_2(Cr_2O_7)_3$

7) Calculate the number of moles in :

a) 87.2 g of Mg _____ b) 0.0591 g of Zn _____

c) 1.2×10^4 g of Na_2O _____ d) 35 mg of $CaCO_3$ _____

8) Find the percentage composition by mass for each element in $FePO_4$.

a) Fe _____ b) P _____ c) O _____ .

9) The price of silver is $4.70 per ounce (28.3 grams). Find the price per mole in dollars.

10) Find the number of moles in :

a) 3.9×10^{28} atoms of Mg _____ b) 9.2×10^{18} atoms of K _____

11) Find the mass.

a) 0.048 mol Ni _____ b) 5.7×10^{4} mol FeS _____

12) Find the mass of 8.4×10^{5} atoms of Au. _____

13) Find the mass of 3.9×10^{22} formula units of $MgCl_2$. _____

14) What mass of oxygen is in 5.2 g of $MgCO_3$? _____

15) Determine the empirical formula.

a) 52.4 % K, 47.6 % Cl. _____

b) 25.9 % N, 74.1 % O _____

c) 60.6 % Pb, 20.7 % Cl, 18.7 % O. _____

Answer : 1) 6.02×10^{23}, 2)a) 16.0, b) 39.1, c) 39.9, d) 70.9, e) 55.8, f) 123.9, 3)a) 1.00, b) 2.00, c) 0.250, d) 0.10, 4)a) 156, b) 1.0, c) 2690, d) 17, 5)a) 6.02×10^{23}, b) 3.61×10^{24}, c) 1.06×10^{23}, d) 2.8×10^{24}, 6)a) 44.0, b) 191.3, c) 669.6, 7)a) 3.59, b) 9.04×10^{-4}, c) 190, d) 3.5×10^{-4}, 8)a) 37.0, b) 20.5, c) 42.4, 9) 17.9, 10)a) 6.5×10^{4}, b) 1.5×10^{-5}, 11)a) 2.8 g, b) 5.0×10^{6} g, 12) 2.7×10^{-16} g, 13) 6.2 g, 14) 3.0 g, 15)a) KCl, b) N_2O_5, c) $Pb(ClO_2)_2$.