PhiladelphiaUniversity
Faculty: Science
Department: Basic sciences

General chemistry 10212101
SECOND EXAM

2Exam time 60 min. **Date:02 /05/**2016

Name :…… **Student No.:** ……..……

Section (الشعبة) :…… **Professor Name:**……..……..

Question No.	1	2	3	4	5	6	7	8	9	10
Answer										

1 **H** 1.008																	2 **He** 4.003
3 **Li** 6.941	4 **Be** 9.01											5 **B** 10.811	6 **C** 12.011	7 **N** 14.007	8 **O** 15.999	9 **F** 18.998	10 **Ne** 20.18
11 **Na** 22.989	12 **Mg** 24.305											13 **Al** 26.982	14 **Si** 28.086	15 **P** 30.974	16 **S** 32.066	17 **Cl** 35.453	18 **Ar** 39.948
19 **K** 39.098	20 **Ca** 40.08	21 **Sc** 44.956	22 **Ti** 47.88	23 **V** 50.942	24 **Cr** 51.996	25 **Mn** 54.938	26 **Fe** 55.847	27 **Co** 58.933	28 **Ni** 58.69	29 **Cu** 63.546	30 **Zn** 65.39	31 **Ga** 69.723	32 **Ge** 72.61	33 **As** 74.922	34 **Se** 78.96	35 **Br** 79.904	36 **Kr** 83.8
37 **Rb** 85.468	38 **Sr** 87.62	39 **Y** 88.906	40 **Zr** 91.224	41 **Nb** 92.906	42 **Mo** 95.94	43 **Tc** 98	44 **Ru** 101.07	45 **Rh** 102.91	46 **Pd** 106.42	47 **Ag** 107.87	48 **Cd** 112.41	49 **In** 114.82	50 **Sn** 118.71	51 **Sb** 121.75	52 **Te** 127.6	53 **I** 126.9	54 **Xe** 131.29
55 **Cs** 132.9	56 **Ba** 137.33	57 **La** 138.91	72 **Hf** 178.49	73 **Ta** 180.95	74 **W** 183.85	75 **Re** 186.21	76 **Os** 190.23	77 **Ir** 192.22	78 **Pt** 195.08	79 **Au** 196.97	80 **Hg** 200.59	81 **Tl** 204.38	82 **Pb** 207.2	83 **Bi** 208.98	84 **Po** 209	85 **At** 210	86 **Rn** 222
87 **Fr** 223	88 **Ra** 226.02	89 **Ac** 227.03	104 **Rf** 261	105 **Ha** 262	106 **Sg** 263	107 **Ns** 262	108 **Hs** 265	109 **Mt** 266									

QUASTION ONE (10 Points)

1- How many atoms are in 54 g of **Ga**?
A- 4.66×10^{23} B- 4.44×10^{24} C- 4.00×10^{23} D- 4×10^{21}

2- What is the mass in kg of one **Mn** atom?
A- 9.11×10^{-23} B- 9.11×10^{-24} C- 9.11×10^{-25} D- 9.11×10^{-26}

3- Calculate the number of grams **Fe** in 50 g of **Fe_2O_3?**
A- 29 B- 35 C- 55 D- 59

4- How many grams of hydrogen molecules **H_2** will be formed, if **15** grams of **Mg** reacted completely with excess amount of **HCl**?

$$2\,Mg + 2\,HCl \longrightarrow MgCl_2 + H_2$$

A- 1.6 g B- 0.61 g C- 0.41 g D- 0.31 g

5- How many grams of Nickel **Ni** are there in 50 mmol of Ni?
A- 3.913 g B- 30.91 g C- 0.003 g D- 2.93 g

6- Which one of the following substances is strong electrolyte?
A- CH_3OH B- HBr C- $C_6H_{12}O_6$ D- NH_3

7- All the following sulfate compounds are insoluble **except**:
A- $CaSO_4$ B- $SrSO_4$ C- $BeSO_4$ D-$BaSO_4$

8- What is the Oxidation Number for Platinum **Pt** in **$(PtF_4)^{-2}$**?
A- +4 B- +3 C- +2 D- +1

9- How many milliliters of 8.4 M HCl solution required to prepare 20 ml of 4.2 M HCl solution?
A- 25 ml B- 23 ml C- 12.5 ml D- 10 ml

10- Calculate the mass of NaOH compound needed to prepare 300 ml of 5.5 M NaOH solution?
A- 55 g B- 60 g C- 66 g D- 75 g

QUASTION Two (10 Points)

1- What is the empirical formula for a compound containing 38.8% carbon, 16.2% hydrogen and 45.1% nitrogen? **(2.5 Points)**

2- If 1.0 g of **Al** reacted with 5.0 g of **Cl_2** to produce **$AlCl_3$**. **(2.5 Points)**

$$2Al + 3Cl_2 \longrightarrow 2AlCl_3$$

A) - Calculate the number of grams of **$AlCl_3$** formed?

B) Assume if the actual yield was 1.2 g of **$AlCl_3$**, Calculate the percentage yield?

3- If 20 ml of 1.9 M LiOH solution are required to neutralize 35 ml of H_2SO_4 solution. What is the concentration of the H_2SO_4 solution in Molarity? **(2.5 Points)**

$$2\ LiOH + H_2SO_4 \longrightarrow Li_2SO_4 + 2\ H_2O$$

4- A sample of 0.8764 g of an ionic compound contain bromide ion $\mathbf{Cl^-}$ is dissolved in water then excess of $\mathbf{AgNO_3}$ added to solution to form 0.965 g **AgCl**, what is the percent by mass of $\mathbf{Cl^-}$ in the original sample? **(2.5 Points)**