General chemistry 10212101
First Exam 2016-2017

1Exam , 50 min.   **Date: 28 / 11 /2016**

Name :…………………………………

Instructor name:

Student No.: …………..………………

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Section (الشعبة) :………………………..

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

Avogadro's No = 6.022 × 10²³

QUESTION ONE   (9 POINTS)

1- The answer of (3.8621 x 1.5630) - 5.98 is written as :
 a- 0.06   b-0.056   c- 0.0565   d-0.05646

2- The SI units for density:
 a- g/mL   b- kg/m^3 c- g/m^3 d- kg/mL

3- What is the density in g/cm^3? For an element with 36 grams and 1.2 cubic inch.
    (1 inch = 2.54 cm)
 a- 1.8   b- $1.3x10^{-5}$ c- 1.5   d- $3.2x10^{-6}$

4- Convert 600 F^o to kelvin :
 a- $1.11x10^3$ b- 589   c- 574   d- $1.39x10^3$

5- Atoms X. Y, Z and R have the following data   :

$_{150}X^{310}$	$_{153}Y^{306}$	$_{150}Z^{312}$	$_{155}R^{312}$

Which two are isotopes :
 a- Y & Z   b- X & R   c- X & Z   d- Y & R

6- Which of the following is not the correct chemical formula for the compound name :
    a- $Co(NO_3)_2$,   Copper nitrate .
    b- $Ba_3(PO_4)_2$,   Barium phosphate.
    c- $FeCO_3$,   iron(II) carbonate .
    d- $SrSO_3$,   Strontium sulfite.

7- Calculate the number of maganisum atoms in 3.00 mol Mg_3N_2:
 a- $4.22x10^{24}$ b- $3.61x10^{24}$ c- $5.42x10^{24}$ d- $6.32x10^{24}$

8- What is Molecular formula for a compound that has an empirical formula of CH_3N?
    if the molar mass of this compound is 87g/mol.
 a- $C_3H_9N_3$ b- CH_3N c- $C_3H_6N_3$ d- $C_3H_9N_6$

9- What is the percent composition % of chromium (Cr) in K_2CrO_4 ?
 a- 34.8%   b- 40.2%   c- 26.8%   d- 24.7%

QUESTION TWO (2 POINTS)

A sample containing carbon , hydrogen and oxygen.
What is the empirical formula of the following composition; same percentage of
carbon and oxygen and 5.988 % of hydrogen ?

QUESTION THREE (4 POINTS)

A- Write a balanced chemical equation for the reaction of solid iodine with chlorine gas
   to produce diiodine hexachloride solid.

B- If 0.86 mol of Iodine react completely with excess chlorine gas. What is the amount in
   grams of diiodine hexachloride will produce?

QUESTION FOUR (3 POINTS)

Lithium reacts with nitrogen to form Lithium nitride according to the balanced equation

$$6Li_{(s)} + N_{2(g)} \longrightarrow 2Li_3N_{(s)}$$
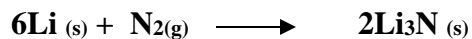
What is the percentage yield of the reaction? If 12.3 g of Li (6.941g/mol) are heated with 33.6 g of N_2 (28.02g/mol), forming 5.89 g actual yield of Li_3N(34.833g/mol).

QUESTION FIVE (2 POINTS)

Study the periodic table and answer these questions:

1- The symbol of ion that has 13 proton and 10 electrons is…………………
2- The symbol of element present in group 2A and period 6 is……………………
3- Write a symbol of an alkali metal …………………………
4- The group number of halogen is ……………………..

Good Luck