Philadelphia University
Faculty of Science
Basic Sciences and Mathematics

General chemistry 10212101
First Exam1 2016-2017
50 min.   /   second semester

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Student No.: ……………..………………
Section (الشعبة) :………………………..

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Question no.	A	B	C	D	Question no.	A	B	C	D
1					8				
2					9				
2					10				
4					11				
5					12				
6					13				
7					14				

1 H Hydrogen 1.01																	2 He Helium 4.00
3 Li Lithium 6.94	4 Be Beryllium 9.01											5 B Boron 10.81	6 C Carbon 12.01	7 N Nitrogen 14.01	8 O Oxygen 16.00	9 F Fluorine 19.00	10 Ne Neon 20.18
11 Na Sodium 22.99	12 Mg Magnesium 24.31											13 Al Aluminum 26.98	14 Si Silicon 28.09	15 P Phosphorus 30.97	16 S Sulfur 32.07	17 Cl Chlorine 35.45	18 Ar Argon 39.95
19 K Potassium 39.10	20 Ca Calcium 40.08	21 Sc Scandium 44.96	22 Ti Titanium 47.87	23 V Vanadium 50.94	24 Cr Chromium 52.00	25 Mn Manganese 54.94	26 Fe Iron 55.85	27 Co Cobalt 58.93	28 Ni Nickel 58.69	29 Cu Copper 63.55	30 Zn Zinc 65.39	31 Ga Gallium 69.72	32 Ge Germanium 72.61	33 As Arsenic 74.92	34 Se Selenium 78.96	35 Br Bromine 79.90	36 Kr Krypton 83.80
37 Rb Rubidium 85.47	38 Sr Strontium 87.62	39 Y Yttrium 88.91	40 Zr Zirconium 91.22	41 Nb Niobium 92.91	42 Mo Molybdenum 95.94	43 Tc Technetium (98)	44 Ru Ruthenium 101.07	45 Rh Rhodium 102.91	46 Pd Palladium 106.42	47 Ag Silver 107.87	48 Cd Cadmium 112.41	49 In Indium 114.82	50 Sn Tin 118.71	51 Sb Antimony 121.76	52 Te Tellurium 127.60	53 I Iodine 126.90	54 Xe Xenon 131.29
55 Cs Cesium 132.91	56 Ba Barium 137.33	57 La Lanthanum 138.91	72 Hf Hafnium 178.49	73 Ta Tantalum 180.95	74 W Tungsten 183.84	75 Re Rhenium 186.21	76 Os Osmium 190.23	77 Ir Iridium 192.22	78 Pt Platinum 195.08	79 Au Gold 196.97	80 Hg Mercury 200.59	81 Tl Thallium 204.38	82 Pb Lead 207.2	83 Bi Bismuth 208.98	84 Po Polonium (209)	85 At Astatine (210)	86 Rn Radon (222)
87 Fr Francium (223)	88 Ra Radium (226)	89 Ac Actinium (227)	104 Rf Rutherfordium (261)	105 Db Dubnium (262)	106 Sg Seaborgium (266)	107 Bh Bohrium (264)	108 Hs Hassium (269)	109 Mt Meitnerium (268)									

58 Ce Cerium 140.12	59 Pr Praseodymium 140.91	60 Nd Neodymium 144.24	61 Pm Promethium (145)	62 Sm Samarium 150.36	63 Eu Europium 151.96	64 Gd Gadolinium 157.25	65 Tb Terbium 158.93	66 Dy Dysprosium 162.50	67 Ho Holmium 164.93	68 Er Erbium 167.26	69 Tm Thulium 168.93	70 Yb Ytterbium 173.04	71 Lu Lutetium 174.97
90 Th Thorium 232.04	91 Pa Protactinium 231.04	92 U Uranium 238.03	93 Np Neptunium (237)	94 Pu Plutonium (244)	95 Am Americium (243)	96 Cm Curium (247)	97 Bk Berkelium (247)	98 Cf Californium (251)	99 Es Einsteinium (252)	100 Fm Fermium (257)	101 Md Mendelevium (258)	102 No Nobelium (259)	103 Lr Lawrencium (262)

QUESTION ONE (14 POINTS)

1- Which of the following is an extensive property of matter?

 a- melting point   b- boiling point   c- color   d- mass

2- The SI unit for volume is:

 a- m   b- m^2 c- m^3 d- m^4

3- The number of significant figure in 0.0000635 is

 a- 8   b- 3   c- 7   d-9

4- The correct expression for the answers of the following operations in scientific notation is

$$79500 / (2.5 \times 10^2)$$

 a- 3.18×10^6 b- 3.18×10^{-3} c- 3.18×10^3 d- 3.18×10^2

5- The melting point of sample is 213°C . calculate this melting point in F°

 a- 235.4   b- 415.4   c- 595.4   d- 777.2

6- Which of the following values is equivalent to 0.357 g

 a- 357 ng   b- 35.7 kg   c- 3.57×10^4 µg   d- 3.57×10^2 mg

7- The number of protons and the number of neutrons in the $^{79}_{35}Br$ nucleus is:

 a- 79 and 35   b-35 and 79   c-35 and 44   d- 44 and 35

8- Which of the following elements is an alkaline earth metal

 a- Cs   b- Kr   c- At   d- Sr

9- What is the formula formed by calcium ions and phosphate ions?

a- $CaPO_4$ b- $Ca_2(PO_4)_2$ c- $Ca(PO_4)_3$ d- $Ca_3(PO_4)_2$

10- The mass percent of C (%C) in $C_2H_3NaO_2$ is:

a- 29.3   b-32.9   c-28.1   d- 25.0

11- The element present in period 4 and group 3A is

a- Ga   b-Ge   c-In   d- Al

12- Which of the following names is correct
    a- Al_2O_3 Aluminum(III) oxide
    b- LiH   Lithium monoxide
    c- SCl_2 Sulfur dichloride
    d- $Mg(NO_3)_2$ Magnesium dinitrate

13- A mole of H_2
    A- contains 6.022×10^{23} atoms
    B- contains 6.022×10^{23} molecules
    C- contains 1 g of hydrogen
    D- is 6×10^{23} g of hydrogen

14- Calculate the number of moles of H_2O formed when 0.200 mole of $Ba(OH)_2$

is treated with excess $HClO_3$ according to the chemical reaction shown below.

    $Ba(OH)_2 + 2\ HClO_3 \longrightarrow Ba(ClO_3)_2 + 2\ H_2O$
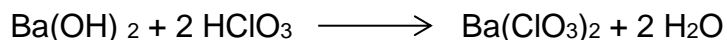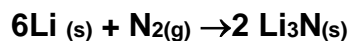
a- 0.4 mol   b- 0.2 mol   c- 0.1 mol   d- 0.25

QUESTION TWO (POINTS)

Determine the empirical formula of compound that gives the following mass percentages upon analysis:

$$H = 0.91\% \qquad S = 56.67\% \qquad O = 42.42\%$$

QUESTION THREE(4 POINTS)

12.3 g Li (molar mass Li : 6.94 g/mol) reacted with 33.6 g of N_2(molar mass N_2 : 28.02 g/mol) yielding 5.89 g of Li_3N

$$6Li_{(s)} + N_{2(g)} \rightarrow 2\ Li_3N_{(s)}$$

What is the percent yield of the reaction?

Good Luck