

(CHEM 101 - CHEM 103)
 FIRST SEMESTER
 FIRST MID-TERM EXAM
 (1438-1439H) (2017-2018G)



COLLEGE OF SCIENCE
 Chemistry Department

Student Name: _____	Write your answer in the table below		
	Q1:	Q6:	Q11:
Student ID No. _____	Q2:	Q7:	Q12:
	Q3:	Q8:	Q13:
Group No. _____	Q4:	Q9:	Q14:
	Q5:	Q10:	Q15:
Thursday 13/02/1439H 07:00-08:30 pm			
Time allowed : 90 minutes			

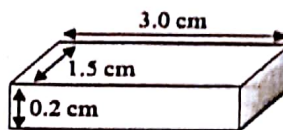
1 IA												13 IIIA	14 IVA	15 VA	16 VIA	17 VIIA	18 VIIIA
1 H 1.008	2 IIA											5 B 10.811	6 C 12.01	7 N 14.01	8 O 16.00	9 F 19.00	10 Ne 20.18
3 Li 6.94	4 Be 9.01											13 Al 26.98	14 Si 28.09	15 P 30.97	16 S 32.07	17 Cl 35.45	18 Ar 39.98
11 Na 23.00	12 Mg 24.31	3 IIIB	4 IVB	5 VB	6 VIB	7 VIIB	8	9 VIIIB	10	11 IB	12 IIB	13 Al 26.98	14 Si 28.09	15 P 30.97	16 S 32.07	17 Cl 35.45	18 Ar 39.98
19 K 39.09	20 Ca 40.08	21 Sc 44.96	22 Ti 47.87	23 V 50.94	24 Cr 52.00	25 Mn 54.94	26 Fe 55.85	27 Co 58.93	28 Ni 58.69	29 Cu 63.546	30 Zn 65.41	31 Ga 69.72	32 Ge 72.64	33 As 74.9216	34 Se 78.96	35 Br 79.90	36 Kr 83.80
37 Rb 85.47	38 Sr 87.62	39 Y 88.91	40 Zr 91.23	41 Nb 92.91	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 121.760	52 Te 127.60	53 I 126.90	54 Xe 131.29
55 Cs 132.91	56 Ba 137.33	71 Lu 174.97	72 Hf 178.49	73 Ta 180.95	74 W 183.84	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 208.980	84 Po [209]	85 At [210]	86 Rn [222]
87 Fr [223]	88 Ra [226]	103 Lr [262]	104 Rf [261]	105 Db [262]	106 Sg [266]	107 Bh [264]	108 Hs [269]	109 Mt [268]	110 Ds [271]	111 Rg [272]	112 Uub [285]	113 Uut [286]					

Name: _____

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Choose the correct answer:

1) What is the mass "in g" of a piece of metal ($d = 7.14 \text{ g/cm}^3$), as shown in:



$$\begin{aligned} d &= \frac{m}{V} \\ m &= d \times V \\ &= 7.14 \times (0.2 \times 1.5 \times 3.0) \\ &= 6.42 \text{ g} \end{aligned}$$

A) 21.42

B) 6.42

C) 1.43

D) 10.71

2) Non-SI unit from the following, is:

(A) kilogram (kg)

(B) second (s)

(C) inch (in)

(D) meter (m)

3) Which of the following is a chemical change?

A) Oxidation of iron in air.

B) Mixing water and oil.

C) Melting ice.

D) Dissolving sugar in water.

4) Which is NOT an extensive property of matter?

A) Volume

B) Mass

C) Length

D) Density

5) The melting point of bromine is -7°C . What is the melting point in $^\circ\text{F}$?

$$F = \frac{9}{5}C + 32$$

A) 19.4

B) -28.8

C) -13.8

$$D) 39.3 = \frac{9}{5} \times (-7) + 32$$

6) How many significant figures are in "4.3070"?

A) 1

B) 5

C) 4

D) 3

7) How many significant figures should be reported for $(8.5701 + 2.38)$?

$$= 10.9501 = 10.95$$

A) 6

B) 5

C) 4

D) 3

8) Walking consume 5.0 kcal per minute. How many hours are required to consume 1881 kJ? (1 kcal = 4.18 kJ)

$$\begin{aligned} 1881 \text{ kJ} \\ = 450 \text{ kcal} \end{aligned}$$

A) 1.5

B) 1.25

C) 1.75

D) 2.5

$$1881 \text{ kJ} \times \frac{1 \text{ kcal}}{4.18 \text{ kJ}} \times \frac{1 \text{ min}}{5 \text{ kcal}} \times \frac{1 \text{ h}}{60 \text{ min}} = 1.5$$

9) The gold foil experiment "Rutherford's experiment" confirmed that:

A) atoms are composed of only electrons.

B) atoms are composed of only protons.

C) electrons are located in the atom nucleus.

D) protons are located in the atom nucleus.

$$\begin{aligned} 1 \text{ kcal} &= 4.18 \text{ kJ} \\ \times 1 \text{ kcal} &= 1880 \text{ kJ} \end{aligned}$$

$$\frac{\times \text{ kcal}}{1 \text{ kcal}} = \frac{1880 \text{ kJ}}{4.18 \text{ kJ}}$$

$$\begin{aligned} 5 \text{ kcal} &\rightarrow 1 \text{ min} \\ 450 \text{ kcal} &\rightarrow \end{aligned}$$

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10) How many protons (p), neutrons (n), and electrons (e) are there in ^{39}Cl atom?

A) 17 p, 17 n, and 22 e

B) 17 p, 22 n, and 17 e

C) 17 p, 39 n, and 17 e

D) 22 p, 17 n, and 17 e

$^{39}_{17}\text{Cl}$

11) Two isotopes of an element differ in their:

A) atomic masses.

B) atomic numbers.

C) numbers of protons.

D) numbers of electrons.

12) How many protons (p) and electrons (e) are present in a Ca^{2+} ion?

A) 20 p and 21 e

B) 18 p and 20 e

C) 20 p and 18 e

D) 22 p and 20 e

$^{40}_{20}\text{Ca}^{2+}$

13) The formula of the ionic compound formed by calcium ions and phosphate ions, is:

A) CaPO_4

B) $\text{Ca}(\text{PO}_4)_3$

C) Ca_3PO_4

D) $\text{Ca}_3(\text{PO}_4)_2$

Ca^{2+}
 PO_4^{3-}

14) The correct name of CoCl_3 is:

A) cobalt chloride.

B) cobalt trichloride.

C) cobalt(III) chloride.

D) cobalt(III) trichloride.

15) The correct name for $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$, is:

A) copper(II) sulfate hydrate.

B) copper(II) sulfate pentahydrate.

C) copper(I) sulfate pentahydrate.

D) copper sulfate pentahydrate.