CHEM 101 - CHEM 103

FIRST SEMESTER

FIRST MIDTERM EXAM

1439-1440H / 2018-2019G

جامعة الملك سعود
King Saud University
1957

COLLEGE OF SCIENCE

Chemistry Department

Student's Name:	**Write your answer in the table below**		
	Q1: C	*Q6:* B	*Q11:* E
Student ID No.	*Q2:* B	*Q7:* A	*Q12:* D
Group No.	*Q3:* A	*Q8:* D	*Q13:* A
Sunday 21/10/2018G **07:00-08:30 pm**	*Q4:* D	*Q9:* E	*Q14:* B
Time allowed : **90 minutes**	*Q5:* C	*Q10:* C	*Q15:* E

1 IA																	18 VIIIA
1 H	2 IIA											13 IIIA	14 IVA	15 VA	16 VIA	17 VIIA	2 He
3 Li	4 Be							key	atomic number			5 B	6 C	7 N	8 O	9 F	10 Ne
11 Na	12 Mg	3 IIIB	4 IVB	5 VB	6 VIB	7 VIIB	8	9 VIIIB	10	11 IB	12 IIB	13 Al	14 Si	15 P	16 S	17 Cl	18 Ar
19 K	20 Ca	21 Sc	22 Ti	23 V	24 Cr	25 Mn	26 Fe	27 Co	28 Ni	29 Cu	30 Zn	31 Ga	32 Ge	33 As	34 Se	35 Br	36 Kr
37 Rb	38 Sr	39 Y	40 Zr	41 Nb	42 Mo	43 Tc	44 Ru	45 Rh	46 Pd	47 Ag	48 Cd	49 In	50 Sn	51 Sb	52 Te	53 I	54 Xe
55 Cs	56 Ba	71 Lu	72 Hf	73 Ta	74 W	75 Re	76 Os	77 Ir	78 Pt	79 Au	80 Hg	81 Tl	82 Pb	83 Bi	84 Po	85 At	86 Rn
87 Fr	88 Ra	103 Lr	104 Rf	105 Db	106 Sg	107 Bh	108 Hs	109 Mt	110 Ds	111 Rg	112 Uub	113 Uut					

Constant:

$\pi = 3.14$

CHOOSE THE CORRECT ANSWERS

Q1: Pure water is:
(A) an ionic compound
(B) an element
(C) a molecular compound
(D) a homogeneous mixture
(E) a heterogeneous mixture

Q2: Which of the following is an SI derived unit:
(A) Kelvin "K" for temperature
(B) cubic meter "m^3" for volume
(C) gram per liter "g/L" for density
(D) mile per hour "mi/h" for speed
(E) gram "g" for mass

Q3: If the temperature is − 40 °F, its value in °C is:
(A) − 40
(B) 40
(C) − 8
(D) − 32
(E) 0

Q4: Knowing that the volume of a bubble is $(\frac{4 \times \pi \times r^3}{3})$, if a bubble contains 0.105 g of a gas and if the radius (r) of the bubble is 2.6 cm, the density in g/L of the gas in this bubble is:
(A) 1.25
(B) 1.98
(C) 1.14
(D) 1.43
(E) 12.49

Q5: The number of significant figures in 0.07080 m, is:
(A) three
(B) five
(C) four
(D) two
(E) six

Q6: At a certain temperature, if the speed of sound is 343 m/s; its speed in km/h is:
(A) 1.23×10^6
(B) 1.23×10^3
(C) 1.26×10^4
(D) 1.30×10^4
(E) 2.10×10^4

Q7: For the following equation:

$$\frac{(7.8 - 0.34)}{(1.15 + 0.82)} = X$$

the value of X with the correct number of significant figures is:
(A) 3.8
(B) 3.80
(C) 4
(D) 3.79
(E) 3.787

Q8: Three students (A, B and C) were asked to measure 87.0 mL of ethanol with a graduated cylinder. The student's measurements were as follow:

A	B	C
87.1	86.9	87.7
88.2	87.1	87.8

Which of the following is correct:
(A) Student A is the most precise and the least accurate
(B) Student B is the most precise and student C is the most accurate
(C) Student B is the most precise and the least accurate
(D) Student C is the most precise and student B is the most accurate
(E) Student A is the most precise and the least accurate

Q9: Which of the following statements is *true?*
(A) The mass of the nucleus is only a very small fraction of the mass of the entire atom.
(B) The atom is best described as a uniform sphere of matter in which electrons are embedded.
(C) All particles in the nucleus of an atom are charged.
(D) The number of neutrons in a neutral atom must equal the number of electrons.
(E) The volume of the nucleus is only a very small fraction of the total volume of the atom.

Q10: The isotope of an unknown element, X, has a mass number of 79. The most stable ion of the isotope has 36 electrons and forms a binary ionic compound with sodium, having a formula of NaX. Which of the following statements is *true*?

(A) NaX is a covalent compound
(B) X is the krypton element, Kr
(C) The isotope of X has 35 protons
(D) The isotope of X has 43 neutrons
(E) The isotope of X has 43 protons

Q11: Which of the compounds NH_4Cl, CCl_4, NF_3 and BaF_2 is/are likely to be ionic?

(A) Only NH_4Cl
(B) Only.NF_3
(C) Both CCl_4 and NF_3
(D) Both CCl_4 and BaF_2
(E) Both NH_4Cl and BaF_2

Q12: Which of the following is true?

	Substance	Protons	Neutrons	Electrons
(A)	$^{25}_{12}Mg^{2+}$	12	13	12
(B)	$^{120}_{50}Sn$	70	50	70
(C)	$^{35}_{17}Cl$	18	18	18
(D)	$^{56}_{26}Fe^{2+}$	26	30	24
(E)	$^{32}_{16}S^{2-}$	16	18	18

Q13: The formula of hypobromous acid and of bromite ion respectively are:

(A) HBrO and BrO_2^-
(B) HBrO and BrO^-
(C) $HBrO_2$ and BrO^{2-}
(D) $HBrO_2$ and BrO_2^-
(E) $HBrO_2$ and BrO^-

Q14: The name of the compound which has the formula "$FeCl_3 \cdot 6H_2O$" is:

(A) Iron (III) chloride water (VI)
(B) Iron (III) chloride hexahydrate
(C) Ferrous (III). hexahydrate
(D) Iron chloride hexahydrate
(E) Iron trichloride hexawater

Q15: Which of the following name is ***not true***:

(A) Dihydrogen monoxide (water) H_2O
(B) Carbon dioxide (dry ice) CO_2
(C) Dinitrogen monoxide (laughing gas) N_2O
(D) Dinitrogen tetrachloride N_2Cl_4
(E) Hydrogen monoiodide HI
