

Grade: X
Time: 2 Hours

Assessment – I

Chemistry
M.M: 80

Instructions:

Read the question paper carefully. Write neatly and legibly. Do not over write. Pay special attention to spelling. Read the answers before submitting the answer sheet.

Section I (40 marks)

(Attempt all questions from this section)

Question 1

[15]

Choose one correct answer to the question from the given option:

- (i) The electron affinity of the elements in group 1 to 7:
a) goes up and then down e) increases
b) decreases and then increases d) decreases
- (ii) An element A belonging to period 3 and group II will have,
a) 2 shells and 2 valence electrons
b) 2 shells and 3 valence electrons
 c) 3 shells and 2 valence electrons
d) 3 shells and 3 valence electrons
- (iii) The molecule which contains a triple covalent bond is:
a) Ammonia c) water
b) Methane d) nitrogen
- (iv) If the RMM of carbon dioxide is 44, then its vapour density is
 a) 22 c) 44
b) 32 d) 88
- (v) The empirical formula of C_6H_6
a) C_3H_3 c) CH
b) C_2H_2 d) C_6H_6
- (vi) The most electronegative element from the following element is
a) Magnesium c) Aluminium
b) Chlorine d) Sulphur
- (vii) The hydroxide which is soluble in excess of NaOH is:
a) Ferric hydroxide c) Copper hydroxide
b) Lead hydroxide d) Calcium hydroxide
- (viii) The longest period of periodic table is:
a) First c) Fifth
b) Second d) Sixth
- (ix) Twice of vapour density gives us
a) Actual vapour density c) Molar volume
b) Relative vapour density d) Molecular mass
- (x) Gelatinous white precipitates soluble in excess of ammonium hydroxide are of :
 a) Zinc hydroxide c) Magnesium hydroxide
b) Calcium hydroxide d) Ferrous hydroxide
- (xi) An element with atomic number 19 will most likely combine chemically with the elements whose atomic number is :
a) 11 c) 17
b) 28 d) 20

Section II (40 marks)
(Attempt any four questions)

Question 3

In the above table, H does not represent hydrogen. Some elements are given in their own symbol and position in the periodic table while others are shown with a letter.

Group No.	1- 1A	2- IIA	13- IIIA	14- IVA	15- VA	16- VIA	17- VIIA	18- 0
2 nd period	Li		D			O	J	Ne
3 rd period	A	Mg	E	Si		H	M	
4 th period	R	T	I		Q	U		Y

Answer the following questions.

- (i) Identify the most electronegative element. [2]
- (ii) Identify the most reactive element of Group I. [2]
- (iii) Identify the element from Period 3 with least atomic size. [2]
- (iv) How many valence electrons are present in Q? [2]
- (v) Identify the noble gas of the fourth period. [2]

Question 4

- a) Define a coordinate bond and give conditions for its formation. [2]
- b) What do you understand by lone pair and shared pair? [2]
- c) By drawing an electron dot diagram, show the lone pair effect leading to the formation of ammonium ion from ammonia gas and hydrogen ion. [3]
- d) Give reasons – Hydrogen chloride can be termed a polar covalent compound. [3]

Question 5

- a) What would you observe when: [6]
 - (i) Blue litmus is introduced into a solution of hydrogen chloride gas.
 - (ii) Red litmus paper is introduced into a solution of ammonia in water
 - (iii) Red litmus paper is introduced in Caustic soda solution?
- b) Distinguish between: [4]

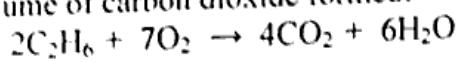
The acidity of bases and basicity of acids

Question 6

- a) Write the probable colour of the following salts? [4]
 - (i) Ferrous salts
 - (ii) Ammonium salts
 - (iii) Calcium salts
 - (iv) Cupric salts
- b) What happens when ammonia solution is added first dropwise and then in excess to the following solutions: CuSO_4 [3]
- c) What do you observe when caustic soda solution is added to the following solution: first a little and then in excess: CuSO_4 [3]

Question 7

- a) State:
- Gay-Lussac's Law of combining volumes.
 - Avogadro's law
 - Vapour density
- b) 1250cc of oxygen was burnt with 300cc of ethane [C₂H₆]. Calculate the volume of unused oxygen and the volume of carbon dioxide formed: [4]

**Question 8**

- a) Calculate the percent composition of Potassium chlorate KClO₃. [2]
- b) Find molecular ^{weight} formula, if its vapour density is 29. [2]
- c) Draw electron dot structure for the following: [6]
- Hydronium ion
 - Magnesium chloride
 - Methane

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