SAM

Roll No._____ Annual 2018

(INTERMEDIATE PART - I) (IV)

Chemistry **(Academic Session 2016 - 2018)** **Paper : I**

Time: 20 Minutes **Code : 6487 (Objective)** **Marks : 17**

Note: You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question.

1- i. Which of the following concentration unit is temperature dependent?

(A) molality (B) molarity (C) mole fraction (D) percentage w/w

ii. The units of K_c for the reaction of ammonia synthesis are

(A) $moles^{-2}dm^6$ (B) $moles^{-1}dm^6$ (C) $moles^{-2}dm^3$ (D) $moles^{-2}dm^2$

iii. The term pH was introduced by

(A) Henderson (B) Millikan (C) Le-chattilier (D) Sorenson

iv. For the reaction $NaOH + HCl \rightarrow NaCl + H_2O$, the change in enthalpy is called

(A) heat of neutralization (B) heat of reaction (C) heat of formation (D) heat of combustion

v. Which one of the following molecule do not obey the Octet rule?

(A) CH_4 (B) CO_2 (C) PF_5 (D) CS_2

vi. Number of bonds in N_2 molecule are :

(A) one σ and 2π (B) one σ and one π (C) three σ only (D) 2 σ and one π

vii. Name the electron is given by:

(A) William Crooks (B) Stoney (C) J.J. Thomson (D) Chadwick

viii. Bohr's model of atom is contradicted by:

(A) Plank's quantum theory (B) Heisenberg uncertainty principle

(C) Duel Nature of matter (D) Rutherford atomic model

ix. Molecules of CO_2 in dry ice form the :

(A) molecular crystals (B) ionic crystals (C) metallic crystals (D) covalent crystals

x. Which one of the following is in liquid state at room temperature?

(A) Methane (B) Ethane (C) Hexane (D) Propane

xi. The spreading of fragrance of scent is due to:

(A) Osmosis (B) Density (C) Effusion (D) Diffusion

xii. The drying agent used in desiccator is:

(A) NH_4Cl (B) $AgCl$ (C) $NaCl$ (D) $CaCl_2$

xiii. Mass of one mole of electrons is :

(A) 1.008 mg (B) 0.184 mg (C) 0.55 mg (D) 1.673 mg

xiv. Which one of the following is a molecular ion:

(A) SO_4^{2-} (B) CH_4^+ (C) Mg^{2+} (D) K^+

xv. The enzyme used for hydrolysis of urea is

(A) urease (B) invertase (C) lipase (D) Zymase

xvi. Cathode in NICAD cell is of

(A) Ag_2O (B) Zn (C) Cd (D) NiO_2

xvii. A solution of glucose is 10%, the volume to which 1 gm/mole of it dissolved will be

(A) $1dm^3$ (B) $200Cm^3$ (C) $1.8dm^3$ (D) $900Cm^3$

Chemistry
Time : 2 : 40 Hours

Roll No. _____ Annual 2018
(INTERMEDIATE PART - I)
(Academic Session 2016 - 2018)
Subjective

Paper : I
Marks : 68

Note :- Section I is compulsory. Attempt any three (3) questions from Section II.

(Section I)

2. Write short answers to any Eight Parts. (8 x 2 = 16)

i. Mg atom is twice heavier than that of a carbon atom. How?

ii. Why 23 g of 'Na' and 238 g of uranium have equal number of atoms?

iii. Define limiting reactant with an example.

iv. Why is there a need to crystallize a crude product?

v. Give two uses of chromatography.

vi. Describe two causes of deviation of gases from ideality.

vii. Pilots feel un-comfortable in breathing at high altitude. Why?

viii. Give unit of Vander walls constant 'a' and 'b'.

ix. What is the ionization constant of acid?

x. What is the effect of catalyst on equilibrium constant?

xi. What is the effect of common ion on solubility?

xii. Define acids and bases by Lowry- Bronsted concept.

3. Write short answers to any Eight parts. (8 x 2 = 16)

i. One feels sense of cooling under the fan after bath, explain with reason. .

ii. What are liquid crystals? Who discovered it?

iii. Ionic crystals do not conduct electricity in the solid state, give reason.

iv. Explain the term ' Anisotropy' with an example.

v. Write the Lewis structures for the given compounds:. **(a)** HCN **(b)** CS_2

vi. Explain the formation of coordinate covalent bond between NH_3 *and* BF_3

vii. $\pi - bonds$ are More diffused than sigma bond, give reason.

viii. NH_3 *and* BF_3 are tetra atomic but different geometries, why?

ix. Explain the term "Atomization energy" with an example.

x. What is internal energy? What is effect of increase in internal energy on the system?

xi. Define mole fraction; also give its mathematical expression.

xii. Explain the term hydrolysis with an example.

(Turn Over)