Chemistry	(D)	L.K.No. 1011	Paper Code No. 6487
Paper I	(Objective Type)	Inter (Ist – A – Exam 2023)	
Time :	20 Minutes	Inter (Part - I)	(Group Ist)
Marks :	17	Session (2020 – 22) to (2022 – 24)	

Note : Four possible choices A , B , C ,D to each question are given. Which choice is correct fill that circle in front of that Question No. Use Marker or Pen to fill the circles. Cutting or filling two or more circles will result in Zero Mark in that Question.

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Q.No.1 (1)	Phenomenon of Isotopy was first discovered by : (A) Millikan (B) J. Perin (C) Soddy (D) J.J Thomson
(2)	Temperature and quantity of a gas remains constant in : (A) Charles's Law (B) Avogadro's Law (C) Boyle's Law (D) Dalton's Law
(3)	A Filtration Process could be very time consuming if it were not aided by a gentle suction which is developed : (A) If the paper covers upto its circumference of funnel (B) If the Paper has got small sized pores in it (C) If Stem of the funnel is so large that it dips into the filtrate (D) If the paper fits tightly
(4)	The largest number of Molecules are present in ; (A) 4.8 g of C_2H_5OH (B) 3.6 g of H_2O (C) 2.8 g of CO (D) 5.4 g of N_2O_5
(5)	S.I. Unit of Pressure is : (A) Torr (B) mm of Hg (C) Pound $inch^{-2}$ (D) Nm^{-2}
(6)	The nature of the positive rays depend on : (A) Nature of Anode (B) Nature of Cathode (C) Nature of the Residual Gas (D) Nature of Discharge Tube
(7)	In Order to raise the boiling point of water upto $110^{o}C$, the external pressure should be : (A) Between 760 Torr and 200 Torr (B) Between 760 Torr and 1200 Torr (C) 765 Torr (D) Any Value of Pressure
(8)	Acetone and Chloroform are soluble in each other due to : (A) Instantaneous Dipole (B) Ion Dipole Interaction (C) Intermolecular Hydrogen Bonding (D) London Dispersion Forces
(9)	Which of the given do not obey Octet Rule : (A) CH_4 (B) NH_3 (C) BCl_3 (D) H_2O
(10)	The reaction for synthesis of NH_3, the value of Δn is ; $N_2 + 3H_2 \rightleftharpoons 2NH_3$: (A) +2 (B) −2 (C) +1 (D) +4
(11)	The term which is not a State Function : (A) Volume (B) Enthalpy (C) Work (D) Internal Energy
(12)	For the reaction $NaOH + HCl \longrightarrow NaCl + H_2O$ the change in Enthalpy called : (A) Heat of Reaction (B) Heat of Neutralization (C) Heat of Combustion (D) Heat of Formation
(13)	An excess of Aqueous Silver Nitrate is added to aqueous Barium Chloride and precipitate is removed by filtration. What are main irons in Filtrate : (A) Ag^{+} and NO_3^{-} (B) Ag^{+}, Ba^{2+} and NO_3^{-} (C) Ba^{2+} and NO_3^{-} (D) Ba^{2+}, NO_3^{-} and Cl^{-}
(14)	If Salt Bridge is not used between two Half Cells then Voltage : (A) Decrease Rapidly (B) Decrease Slowly (C) Drops to Zero (D) Does not change
(15)	With Increase of 10^{o} Celsius temperature rate of reaction double, this increase of rate is due to : (A) Decrease in Activation Energy (B) Decrease in the Number of Collision between Reactants Molecules (C) Increase in the number of effective collisions (D) Increase in Energy of Activation
(16)	A solution of 10 % w / v of Glucose, the volume in which its 1 gram mole is dissolved will be : (A) 1 dm^3 (B) 1.8 dm^3 (C) 200 cm^3 (D) 900 cm^3
(17)	The Oxidation Number of Sulphur in SO_4^{2-} is : (A) 4 (B) 3 (C) 6 (D) 0

Roll No. (Group Ist)	1011 - 18000	Inter (Part – I)	Session (2020 – 22) to (2022 – 24)
Chemistry (Subjective)	Inter (Ist – A – Exam – 2023)		Time 2 : 40 Hours Marks : 68

Note : It is compulsory to attempt any (8 – 8) Parts each from Q.No. 2, Q.No.3 and attempt any (6) Parts from Q.No.4. Attempt any (3) Questions from Part – II. Write same Question No. and its Part No. as given in the Question Paper.

Make Diagram where necessary.

Part - I

BWP-11-1-23

22 x 2 = 44

Q.No.2	(i)	Magnesium Atom is twice heavier than Carbon Atom. Justify the statement.		
	(ii)	What is Critical Temperature of a Gas ? What is its importance for Liquefaction of Gases?		
	(iii)	What is Molecular Ion ? Give an example.	(iv)	What are Isotopes ? Give example
	(v)	What are Natural and Artificial Plasma ?	(vi)	Define Boyle's Law. Give its Mathematical Expression.
	(vii)	Why is it necessary to decrease the pressure in the discharge tube to get the Cathode Rays ?	(viii)	Why e / m value of the Cathode Rays is just equal to that of Electron ?
	(ix)	What are defects of Bohr's Atomic Model ?	(x)	Define Lattice Energy and give example.
	(xi)	State First Law of Thermodynamics and give its Mathematical Form.	(xii)	What is State and State Function ? Differentiate.
Q.No.3	(i)	Differentiate between Molality and Molarity.	(ii)	Why is the Aqueous Solution of Ammonium Chloride Acidic ?
	(iii)	What is meant by Water of Crystallization ? Give two examples.	(iv)	What are Pseudo First Order Reactions ? Give an example.
	(v)	What do you mean by Inhibitor ? Give an example.	(vi)	Define Half Life Period . How is it related to order of reaction ?
	(vii)	How can the decolourization of undesirable colours be carried out for freshly prepared crystals ?	(viii)	What is Solvent Extraction ? Give its importance.
	(ix)	What is Sintered Glass Crucible ? Give its significance.	(x)	Evaporation causes cooling. Give the reason.
	(xi)	What are Dipole Induced Dipole Forces ?	(xii)	Define Polymorphism. Give an example.
Q.No.4	(i)	Size of an Anion is always greater than that of its Parent Atom. Justify.		
	(ii)	How bond length is affected by change in Hybridization state ?		
	(iii)	Why He_2 does not exist under Normal Condition ?		
	(iv)	Justify that Chemical Equilibrium is dynamic in nature.		
	(v)	Why do we need buffers in daily life ?		
	(vi)	How some reactions are effected by change in Pressure ?		
	(vii)	Na and K can displace Hydrogen from Acids but Pt , Pd and Cu can not ? Explain		
	(viii)	Lead Accumulator is chargeable battery Justify.		
	(ix)	How reactivity of Metals is studied with the help of Electrochemical Series ?		

(Part – II)

3 x 8 = 24

Q.No.5	(a)	Define Stoichiometry. Give its assumptions. Mention two important laws which help to perform the Stoichiometric calculation. 1 + 2 + 1 =	(4)
	(b)	Calculate the Mass of 1 dm^3 of NH_3 Gas at 30 ^oC and 1000 mm Hg pressure, considering that NH_3 is behaving ideally.	(4)
Q.No.6	(a)	Define Hydrogen Bonding and explain its any three applications. 1 + 3 =	(4)
	(b)	State and explain first law of Thermodynamics. 1 + 3 =	(4)
Q.No.7	(a)	Describe any four properties of Cathode Rays.	(4)
	(b)	What is the Percentage Ionization of Acetic Acid in a Solution in which 0 . 1 Moles of it has been dissolved per dm^3 of the solution ? (% Ionization = 1 . 3)	(4)
Q.No.8	(a)	Discuss the shapes and geometry of CH_4 and H_2O with reference to sp^3 Hybridization.	(4)
	(b)	Write only four industrial applications of Electrolytic Process.	(4)
Q.No.9	(a)	Give Graphical Explanation for Elevation of Boiling Point of a Solution.	(4)
	(b)	How Rate of Reaction depends upon the following factors : (i) Nature of Reactants (ii) Surface Area	(4)