

**BWP-GI-11-19**

Chemistry	(B)	L.K.No. 1113	Paper Code No. 6483
Paper I	(Objective Type)	Inter -A- 2019	(New Pattern)
Time :	20 Minutes	Inter (Part I)	Group Ist
Marks :	17	Session (2015 -17) to (2018 - 20)	

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.

Q.No.1	Unit of Rate Constant is same as that of the rate of reaction in :
(1)	(A) First Order Reaction (B) Second Order Reaction (C) Zero Order Reaction (D) Third Order Reaction
(2)	Stronger the Oxidizing Agent, greater is the : (A) Oxidation Potential (B) Reduction Potential (C) Redox Potential (D) E.M.F. of Cell
(3)	The Molal Boiling Point Constant is the ratio of the elevation in boiling point to : (A) Molarity (B) Molality (C) Mole Fraction of Solvent (D) Mole Fraction of Solute
(4)	Molarity of Pure Water is : (A) 1 (B) 18 (C) 55.5 (D) 6
(5)	The solubility product of AgCl is $2.0 \times 10^{-10} \text{ mol}^2 \text{ dm}^{-6}$. The maximum concentration of Ag^+ ions in the solution is : (A) $2.0 \times 10^{-10} \text{ mol dm}^{-3}$ (B) $1.41 \times 10^{-5} \text{ mol dm}^{-3}$ (C) $1.0 \times 10^{-10} \text{ mol dm}^{-3}$ (D) $4.0 \times 10^{-20} \text{ mol dm}^{-3}$
(6)	The change in heat energy of a chemical reaction at constant temperature and pressure is called : (A) Enthalpy Change (B) Bond Energy (C) Heat of Sublimation (D) Internal Energy Change
(7)	Which of the following species has unpaired electrons in antibonding molecular orbitals : (A) O_2^{2+} (B) N_2^{2-} (C) B_2 (D) F_2
(8)	Which of the following Molecules has Zero Dipole Moment : (A) NH_3 (B) CHCl_3 (C) BF_3 (D) H_2O
(9)	When 6d is complete, the entering electron goes into : (A) 7f (B) 7s (C) 7p (D) 7d
(10)	Quantum Number Values for 2p Orbitals are : (A) $n = 2, \ell = 1$ (B) $n = 1, \ell = 2$ (C) $n = 1, \ell = 0$ (D) $n = 2, \ell = 0$
(11)	Which of the given is Pseudo Solid : (A) CaF_2 (B) Glass (C) NaCl (D) All these
(12)	Acetone and Chloroform are soluble in each other due to : (A) Intermolecular Hydrogen Bonding (B) Instantaneous Dipole (C) Ion - Dipole Interaction (D) All these
(13)	The deviation of a Gas from ideal behaviour is maximum at : (A) $-10^\circ\text{C}, 5 \text{ atm}$ (B) $-10^\circ\text{C}, 2 \text{ atm}$ (C) $100^\circ\text{C}, 2 \text{ atm}$ (D) $0^\circ\text{C}, 2 \text{ atm}$
(14)	Pressure remaining constant, at which temperature the volume of a gas will become twice of what it is at 0°C : (A) 546°C (B) 200°C (C) 546 K (D) 273 K
(15)	Solvent Extraction is an equilibrium process and it is controlled by : (A) Law of Mass Action (B) The amount of solvent used (C) Distribution Law (D) The amount of solute used
(16)	The volume occupied by 1.4 g of N_2 at S.T.P. is : (A) 2.24 dm^3 (B) 22.4 dm^3 (C) 1.12 dm^3 (D) 112 cm^3
(17)	27g of Al will react completely with how much mass of O_2 to produce Al_2O_3 : (A) 8 g Oxygen (B) 16 g Oxygen (C) 32 g Oxygen (D) 24 g Oxygen

II No.	1113 - 21000	Session (2015 -17) to (2018 - 20)	Inter (Part - I)
Chemistry (Subjective)	Inter - A -2019	Time 2 : 40 Hours Marks : 68	(New Pattern)/ Group Ist

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

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22 x 2 = 44

- Q.No.2 (i) Define Relative Atomic Mass. Also give two examples.
(ii) How can efficiency of a reaction is expressed? Write down its formula.
(iii) Differentiate between Molecule and Molecular Ion.
(iv) Write down any four features of Ideal Solvent.
(v) State Partition Law.
(vi) Prove that $d = \frac{PM}{RT}$
(vii) Calculate the value of R in S.I. Units.
(viii) Define Plasma. Also give its one application.
(ix) Write down the S.I. Units of 'a' and 'b' in van der Waal's Equation.
(x) Differentiate between Ideal and Non - Ideal Solutions.
(xi) One Molal Solution of Urea in water is dilute as compared to one molar solution of Urea, but the number of particles of the solute is same. Justify it.
(xii) Define Mole Fraction. Also write down its formula.
- Q.No.3 (i) Evaporation causes cooling. Justify.
(ii) Boiling needs a constant supply of heat. Justify.
(iii) How Earthenware vessels keep water cool?
(iv) Vacuum Distillation can be used to avoid decomposition of a sensitive liquid. Justify.
(v) Why is it necessary to decrease the pressure in the discharge tube to get the Cathode Rays?
(vi) Why the Positive Rays are also called Canal Rays?
(vii) Whichever gas is used in the discharge tube, the nature of the Cathode Rays remain the same, why?
(viii) Differentiate between Slow Moving Neutrons and Fast Moving Neutrons.
(ix) Why Solubility of Glucose in water is increased by increasing the temperature?
(x) Define pH and pOH.
(xi) Give two properties of Enzyme.
(xii) Differentiate between Average and Instantaneous Rate.
- Q.No.4 (i) Define Polar Bond. Give formulas of two diatomic molecules which have polar bonds.
(ii) Define Coordinate Covalent Bond. Draw Coordinate Covalent Bond between NH_3 and BF_3 molecules.
(iii) Why Molecular Orbital Theory is superior to Valence Bond Theory?
(iv) The Dipole Moment of CO_2 Molecule is zero but that of SO_2 molecule is greater than zero, justify.
(v) Define System and Surrounding with reference to Thermochemistry.
(vi) Define Enthalpy of Neutralization. Write thermochemical equation for Enthalpy of Neutralization between Strong Acid and Strong Base.
(vii) Show that Oxidation Number of Cr in K_2CrO_4 is +6.
(viii) Write the reactions : Electrolysis of Fused NaCl with related Oxidation and Reduction Reactions at Anode and Cathode respectively.
(ix) SHE acts as Anode when connected to Cu Electrode but acts as Cathode when connected to Zn Electrode, explain briefly.

Part - II

- Q.No.5 (a) Define Actual Yield. Why is Actual Yield mostly less than Theoretical Yield? Write down formula of Percentage Yield. (4)
(b) Give any four characteristics of Covalent Solids. (4)
- Q.No.6 (a) One Mole of Methane Gas is maintained at 300 K. Its volume is 250 cm^3 . Calculate the pressure exerted by the Gas. (4)
(b) Derive the equation for the radius of nth Orbit of Hydrogen Atom using Bohr's Model. (4)
- Q.No.7 (a) Define Atomic Orbital Hybridization. Explain sp^2 - Hybridization giving example of BF_3 . (4)
(b) Differentiate between Spontaneous and Non - Spontaneous processes with examples. (4)
- Q.No.8 (a) Calculate the pH of a Buffer Solution in which 0.11 molar CH_3COONa and 0.09 Molar Acetic Acid solutions are present. K_a for CH_3COOH is 1.85×10^{-5} . (4)
(b) Write two factors which affect the rate of Reaction. (4)
- Q.No.9 (a) Define Hydrolysis. Explain it with two examples. (4)
(b) Write any four applications of Electrochemical Series. (4)

