Roll No. MTN-II S2-19

2019 (A)

Paper Code Number: **2482**

INTERMEDIATE PART-I (11th CLASS)

CHEMISTRY PAPER-I (NEW SCHEME) GROUP-II

OBJECTIVE MAXIMUM MARKS: 17

TIME ALLOWED: 20 Minutes

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 bubble in front of that question number. Use marker or pen to fill the bubbles. Cutting or filling two or more bubbles will result in zero mark in that question. Attempt as many questions as given in objective type question paper and leave others blank. No credit will be awarded in case BUBBLES are not filled. Do not solve questions on this sheet of OBJECTIVE PAPER.

Q.No.1

(1) 27g of Al will reacts completely with how much mass of O_2 to produce Al_2O_3?
(A) 8 g of Oxygen (B) 16 g of Oxygen (C) 32 g of Oxygen (D) 24 g of Oxygen

(2) The number of moles of CO_2 which contain 8.0g of Oxygen:
(A) 0.25 (B) 0.50 (C) 1.0 (D) 1.50

(3) Solvent extraction is an equilibrium process and is controlled by:
(A) Law of mass action (B) Distribution Law (C) Amount of the solvent used (D) The amount of the solute

(4) A real gas obeying Van der Waal's Equation will resemble ideal gas if:
(A) Both 'a' and 'b' are large (B) Both 'a' and 'b' are small
(C) 'a' is small and 'b' is large (D) 'a' is large and 'b' is small

(5) The molar volume of CO_2 is maximum at:
(A) STP (B) $127°C$ and 1atm (C) $0°C$ and 2atm (D) $273°C$ and 1atm

(6) Acetone and chloroform are soluble in each other due to:
(A) Intermolecular hydrogen bonding (B) Ion-dipole interaction (C) Instantaneous dipole (D) All these

(7) London dispersion forces are the only forces present among the:
(A) Molecules of Water in liquid state (B) Atoms of Helium in gaseous state at high temperature
(C) Molecules of solid Iodine (D) Molecules of Hydrogen Chloride gas

(8) The nature of positive rays depend on:
(A) The nature of the electrode (B) The nature of the discharge tube
(C) The nature of the residual gas (D) All these

(9) When 6d orbital is complete, the entering electron goes into: (A) 7f (B) 7s (C) 7p (D) 7d

(10) Which of the following molecules has zero dipole moment?
(A) NH_3 (B) $CHCl_3$ (C) H_2O (D) BF_3

(11) The Bond order of N_2 molecule is: (A) 0 (B) 1 (C) 2 (D) 3

(12) For a given process, the heat changes at constant pressure q_p and at constant volume q_v are related to each other as:
(A) $q_p = q_v$ (B) $q_p < q_v$ (C) $q_p > q_v$ (D) $q_p = \frac{q_v}{2}$

(13) An excess of aqueous Silver nitrate is added to the aqueous Barium chloride and precipitate is removed by filtration. What are the main ions in the filtrate?
(A) Ag^+ and NO_3^- only (B) Ag^+ and Ba^{++} and NO_3^-
(C) Ba^{++} and NO_3^- (D) Ba^{++} and NO_3^- and Cl^-

(14) 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

(15) Which of the following solutions has the highest boiling point?
(A) 5.85 % solution of Sodium Chloride (B) 18.0 % solution of Glucose
(C) 6.0 % solution of Urea (D) all have the same boiling point

(16) The unit of the rate constant is the same as that of the rate of reaction in:
(A) First order reaction (B) Second order reaction (C) Zero order reaction (D) Third order reaction

(17) Which of the following statements is not correct about Galvanic cell?
(A) Anode is negatively charged (B) Reduction occurs at anode
(C) Cathode is positively charged (D) Reduction occurs at Cathode

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INTERMEDIATE PART-I (11th CLASS)

CHEMISTRY   PAPER-I   (NEW SCHEME)   GROUP-I

TIME ALLOWED: 2.40 Hours   SUBJECTIVE   MAXIMUM MARKS: 68

NOTE: - Write same question number and its part number on answer book, as given in the question paper.

SECTION-I   8 × 2 = 16

2. **Attempt any eight parts.**
(i) Why do the isotopes have same chemical but different physical properties?
(ii) Define gram formula. Give two examples.
(iii) What is Stoichiometry? Give its two assumptions.
(iv) Why is there a need to crystallize the crude product?
(v) What do you mean by solvent extraction? Which law does control it?
(vi) How is absolute zero explained by drawing graph?
(vii) Calculate the value of gas constant "R" in S.I units.
(viii) Derive Avogadro's Law from Kinetic molecular theory of gases.
(ix) Lighter gases diffuse more rapidly than heavier gases. Give reasons.
(x) One molal solution of urea is more dilute than one molar solution. Why?
(xi) Define Raoult's Law. Give one of its mathematical expression
(xii) What is discontinuous solubility curve? Give one example.   8 × 2 = 16

3. **Attempt any eight parts.**
(i) Why do fish and plants in ponds survive under blanket of ice during cold winters?
(ii) Define Polymorphism. Give one example.
(iii) Freshly cut metals show the property of metallic luster. Comment on the statement.
(iv) Write down any two properties of Molecular Solids.
(v) Calculate the mass of electron from its e/m value.
(vi) Justify the statement that angular momentum of an electron revolving in orbit is quantized.
(vii) How was dual nature of electron verified by Davisson and Germer?
(viii) State Aufbau principle. Write electronic configuration of Sodium ($_{11}Na$) following this principle.
(ix) Define the given terms: (a) common ion effect (b) solubility product
(x) What is the difference between heat and temperature?
(xi) Define pseudo first order reaction. Given one example.
(xii) Write down two examples to explain the activation of catalyst.   6 × 2 = 12

4. **Attempt any six parts.**
(i) Differentiate between exothermic and endothermic reactions.
(ii) Define Ionization energy. How does it vary in periodic table?
(iii) Ionic radii of anions are greater than their parent atoms. Why?
(iv) CO_2 is non-polar whereas H_2O is polar molecule. Give reason.
(v) Define Dipole Moment. Give its various units.
(vi) State 1st law of thermodynamics.
(vii) Define oxidation number. Calculate oxidation number of 'Mn' in $KMnO_4$.
(viii) Differentiate between a primary cell and a secondary cell.
(ix) Write electrochemical reactions taking place in Alkaline battery.

SECTION-II   3 × 8 = 24

NOTE: - Attempt any three questions.

5.(a) Describe combustion analysis to determine mass percentages of C, H and O in an organic compound.   4
(b) What is meant by Hydrogen Bonding? How it explains the helix structure of proteins?   4

6.(a) Write defects in Bohr's model of an atom.   4
(b) One mole of methane gas is maintain at 300K its volume is $250 Cm^3$. Calculate the pressure exerted by the gas.   4

7.(a) What is Electron Affinity? How does it show variation along groups and periods in the periodic table?   4
(b) Describe the Hess's Law of Constant Heat Summation and give one example to explain it.   4

8.(a) $N_{2(g)}$ and $H_{2(g)}$ combine to give $NH_{3(g)}$. The value of K_c in this reaction at $500°C$ is $6.0 × 10^{-2}$. Calculate the value of K_p for this reaction.   4
(b) How does Arrhenius equation help us to calculate the energy of activation of a reaction?   4

9.(a) Write Landsberger's method for determination of elevation of boiling point.   4
(b) Define voltaic of Galvanic cell. Write its function with chemical equations.   4