2017 (A) Roll No: _____

INTERMEDIATE PART-I (11th CLASS)

CHEMISTRY PAPER-I (NEW SCHEME) (SESSION 2015-2017) 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

2. Attempt any eight parts. **8 × 2 = 16**

(i) What is Stoichiometry? Give its two assumptions.
(ii) What are Molecular Ions? How are they generated?
(iii) Define gram Formula. Give two examples.
(iv) What is the basic principle of Crystallization?
(v) State Distribution Law.
(vi) What is R_f value? Give its formula.
(vii) What is the difference between Diffusion and Effusion?
(viii) Define Critical Temperature and Critical Pressure of Gases.
(ix) Calculate the value of gas constant "R" in S.I units.
(x) Define Solubility Product. Give one example.
(xi) How does a catalyst affect a Reversible Reaction?
(xii) What is the effect of increase of Pressure on the decomposition of $PC\ell_5$?

3. Attempt any eight parts. **8 × 2 = 16**

(i) Why HF is the weakest acid than other Hydrogen Halides?
(ii) Evaporation takes place at all temperatures. Justify.
(iii) Define Isomorphism and Polymorphism.
(iv) Why ionic crystals do not conduct electricity in the solid state?
(v) Differentiate between Zeeman effect and Stark effect.
(vi) Whichever gas is used in the discharge tube, the nature of the cathode rays remains the same. Why?
(vii) Give two postulates of Bohr's atomic model.
(viii) Why positive rays are also called canal rays?
(ix) Define Molarity and Molality.
(x) What is meant by Water of Crystallization? Give two examples.
(xi) Differentiate between electrolytic and Voltaic Cell.
(xii) A salt bridge maintains the electrical neutrality in the cell. Justify.

4. Attempt any six parts. **6 × 2 = 12**

(i) Why the Ionization Energy decreases down the group, although nuclear charge increases?
(ii) How nature of bond can be determined by Electronegativities Values?
(iii) How can you describe that π bonds are more diffused than σ – bonds?
(iv) The dipole moments of CO_2 and CS_2 are zero but that of SO_2 is $1.61D$, why?
(v) What is State and State function? Explain with example.
(vi) Prove that $\Delta E = q_v$
(vii) How surface area affects the rate of reaction?
(viii) Differentiate between Homogeneous and Heterogeneous Catalysis.
(ix) Differentiate between Instantaneous and Average Rate of Reaction.

SECTION-II

NOTE: - Attempt any three questions.

5.(a) A well known ideal gas is enclosed in a container having volume $500\,cm^3$ at S.T.P. Its mass comes out to be 0.72 gram. What is the motor mass of this gas? 4

(b) Define Vapour Pressure. How vapour pressure is measured by Manometeric Method? 4

6.(a) Write eight postulates of Kinetic Molecular Theory of Gases. 4

(b) How charge to mass $\left(e/m\right)$ ratio of electron is measured? 4

7.(a) Give four postulates of Valence Shell Electron Pair Repulsion Theory. 4

(b) Describe Bomb Calorimeter. 4

8.(a) The solubility of PbF_2 at $25^\circ C$ is $0.64\,gm\,dm^{-3}$. Calculate K_{sp} of PbF_2. 4

(b) Explain construction and working of standard Hydrogen Electrode (SHE). 4

9.(a) Define Colligative Properties. How molecular mass of solute is determined by lowering in vapour pressure? 4

(b) What is meant by Enzyme Catalysis? Write reaction showing the catalysis of urea. Also write two characteristics of Enzyme Catalysis. 4

Paper Code Number: 2481	2017 (A)	Roll No._____

INTERMEDIATE PART-I (11th CLASS)

CHEMISTRY PAPER-I (NEW SCHEME) (SESSION 2015-2017) GROUP-I

TIME ALLOWED: 20 Minutes **OBJECTIVE** MAXIMUM 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. 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 question on this sheet of OBJECTIVE PAPER.

Q.No.1

(1) 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

(2) The number of Isotopes of Cadmium is:-

(A) Six (B) Seven (C) Five (D) Nine

(3) Chromatography in which the stationary phase is a solid is classified as:- (A) Partition Chromatography (B) Gas Chromatography (C) Adsorption Chromatography (D) Thin layer Chromatography

(4) The molar volume of CO_2 is maximum at:-

(A) S.T.P. (B) 127°C and 1 atm (C) 0°C and 2 atm (D) 273°C and 2 atm

(5) 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

(6) When water freezes at 0°C, its density decreases due to:-

(A) Empty spaces present in the structure of ice (B) Cubic structure of ice

(C) Change of bond lengths (D) Chang of bond angles

(7) _____ is a pseudosolid. (A) CaF_2 (B) Glass (C) $NaC\ell$ (D) $KC\ell$

(8) When 6d orbital is complete, the entering electron goes into:-

(A) 7f (B) 7s (C) 7p (D) 7d

(9) The wave number of the light emitted by a certain source is $2 \times 10^6\ m^{-1}$. The wavelength of this light will be:- (A) 500 nm (B) 500 m (C) 200 nm (D) $5 \times 10^{7}\ m$

(10) The $H-H$ bond energy in $KJ\ mole^{-1}$ is:- (A) 346 (B) 436 (C) 463 (D) 336

(11) _____ has zero dipole moment. (A) NH_3 (B) $CHC\ell_3$ (C) H_2O (D) BF_3

(12) The change in heat energy of a chemical reaction at constant temperature and pressure is called:-

(A) Enthalpy change (B) Heat of sublimation (C) Bond energy (D) Internal energy change

(13) The pH of $10^{-3}\ mole\ dm^{-3}$ of an aqueous solution of H_2SO_4 is:-

(A) 3.0 (B) 2.7 (C) 2.0 (D) 1.5

(14) _____ was derived by C.M. Guldberg and P. Waage in 1864. (A) Law of Conservation of Mass (B) Law of Mass Action (C) Distribution Law (D) Law of Conservation of Energy

(15) 18 g glucose is dissolved in 90 g of water. The relative lowering of vapour pressure is equal to:-

(A) $\frac{1}{5}$ (B) 5.1 (C) $\frac{1}{51}$ (D) 6

(16) The potential of standard Hydrogen Electrode is arbitrarily taken as:-

(A) 1.00 (B) 0.00 (C) 5.00 (D) 3.00

(17) Glucose is converted into ethanol by the enzyme:-

(A) Invertase (B) Urease (C) Zymase (D) Sucrase

2017 (A) Roll No: _____

INTERMEDIATE PART-I (11th CLASS)

CHEMISTRY PAPER-I (NEW SCHEME) (SESSION 2015-2017) GROUP-II

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

2. Attempt any eight parts. **8 × 2 = 16**

(i) N_2 and CO have same numbers of Electrons, Protons and Neutrons. Justify it, with reason.
(ii) Define Molecular Formula. Give two examples of the compounds having same empirical and molecular formulas.
(iii) No individual atom of Neon in the sample has a mass of 20.18 a.m.u. Give reason.
(iv) Define Crystallization. What is basic principle of crystallization?
(v) What is the difference between Adsorption and Partition Chromatography?
(vi) Write two salient features of an ideal solvent used in the process of Crystallization.
(vii) Calculate the value of Ideal gas constant 'R' in S.I. units.
(viii) What is Joule Thomson Effect?
(ix) Write two applications of Plasma.
(x) Give statement of "Law of Mass Action".
(xi) What is the effect of Catalyst on equilibrium position of a reaction?
(xii) Explain that a mixture of NH_4OH and $NH_4C\ell$ gives us the basic buffer.

3. Attempt any eight parts. **8 × 2 = 16**

(i) Why the boiling point of water is different at Murree hills and Mount Everest?
(ii) The values of boiling points of noble gases increase from top to bottom within a group. Give reason.
(iii) Define Unit Cell. Give one example.
(iv) The electrical conductivity of metals decreases with increase in temperature. Why?
(v) Sate Hund's rule. Give one example.
(vi) What is meant by fine structure of Hydrogen Spectrum?
(vii) What are $X-$rays? What is their origin?
(viii) Write balanced equations for any two nuclear reactions.
(ix) What is the difference between Zeotropic and Azeotropic solutions?
(x) What are Discontinuous Solubility Curves? Give one example.
(xi) What is Anodized Aluminium?
(xii) Write redox reactions which occur during discharging of lead accumulator battery?

4. Attempt any six parts. **6 × 2 = 12**

(i) The size of a cation is smaller than its parent atom. Prove.
(ii) Define Ionization Energy (IE) and Electron Affinity(EA).
(iii) The dipole moments of CO_2 and CS_2 are zero, but that of SO_2 is $1.61D$. Give reasons.
(iv) Why bond formation is not possible between two He atoms. Prove with Molecular Orbital Theory(MOT)?
(v) State the first Law of Thermochemistry.
(vi) Burning of a candle is a spontaneous process. Give reason.
(vii) A finally divided catalyst may prove more effective. Give reason.
(viii) Write two examples of Enzyme Catalyzed reactions.
(ix) What is Pseudo First Order Reaction?

SECTION-II

NOTE: - Attempt any three questions.

5.(a) A sample of liquid consisting of Carbon, Hydrogen and Oxygen was subjected to combustion analysis. 0.5439 g of compound gave 1.039 g of CO_2, 0.6369 g of water. Determine the empirical formula of the compound. 4
(b) What are Ionic Solids? Write six properties of Ionic Solids. 4

6.(a) State and explain Boyle's Law and verify this Law by an experiment. 4
(b) What is Cathode Ray Tube? Describe two properties of Cathode Rays. 4

7.(a) Describe Valence Shell Electron pair Repulsion Theory and give its postulates. Give example of structure of Ammonia Molecule by this theory. 4
(b) Define Enthalpy and derive Enthalpy change at constant pressure. 4

8.(a) What is Voltaic Cell? Explain with one example. 4
(b) The solubility of PbF_2 at $25^\circ C$ is $0.64\ gm/dm^3$. Calculate K_{SP} of PbF_2. 4

9.(a) Explain Lowering of Vapour Pressure by adding a Non-volatile, Non electrolyte solute in a solvent. 4
(b) What is Half Life Period? Give examples, also give its mathematical form. 4

Paper Code Number: 2482	2017 (A)	Roll No._____

INTERMEDIATE PART-I (11th CLASS)

CHEMISTRY PAPER-I (NEW SCHEME) (SESSION 2015-2017) GROUP-II

TIME ALLOWED: 20 Minutes **OBJECTIVE** MAXIMUM 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. 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 question on this sheet of OBJECTIVE PAPER.

Q.No.1

(1) The mass of one mole of electron is:-

(A) $1.008\,g$ (B) $0.55\,mg$ (C) $0.184\,mg$ (D) $1.673\,mg$

(2) The largest number of molecules are present in:-

(A) $3.6\,g$ of H_2O (B) $4.8\,g$ of C_2H_5OH (C) $2.8\,g$ of CO (D) $5.4\,g$ of N_2O_5

(3) 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

(4) If absolute temperature of a gas is doubled and pressure is reduced to one half, the volume of gas will:-

(A) Remain unchanged (B) Increase four times (C) Reduce to $\frac{1}{4}$ (D) Be doubled

(5) The order of rate of diffusion of gases NH_3, SO_2, $C\ell_2$ and CO_2 is:- (A) $NH_3 > SO_2 > C\ell_2 > CO_2$ (B) $NH_3 > CO_2 > SO_2 > C\ell_2$ (C) $C\ell_2 > SO_2 > CO_2 > NH_3$ (D) $NH_3 > CO_2 > C\ell_2 > SO_2$

(6) The boiling point of pure water at $1\,atm$ pressure is:-

(A) $98^\circ C$ (B) $100^\circ C$ (C) $69^\circ C$ (D) $120^\circ C$

(7) Ionic solids are characterized by:- (A) Low melting points (B) Good conductivity in solid state (C) High vapour pressure (D) Solubility in polar solvents

(8) When $6d$ orbital is complete, the entering electron goes into:-

(A) $7f$ (B) $7s$ (C) $7p$ (D) $7d$

(9) The velocity of Photon is:- (A) Independent of its wavelength (B) Equal to square of its amplitude (C) Depends on its wavelength (D) Depends on its source

(10) ____ Hydrogen Halide has the highest percentage of ionic character.

(A) $HC\ell$ (B) HBr (C) HF (D) HI

(11) The bond order of N_2 is:- (A) 2 (B) 3 (C) 4 (D) 1

(12) For the reaction $NaOH + HC\ell \longrightarrow NaC\ell + H_2O$ the change in enthalpy is called:-

(A) Heat of reaction (B) Heat of formation (C) Heat of Neutralization (D) Heat of Combustion

(13) The pH of $10^{-3}\ mole\ dm^{-3}$ of an aqueous solution of H_2SO_4 is:-

(A) 3.0 (B) 2.7 (C) 2.0 (D) 1.5

(14) The ionization constant of pure water at $25^\circ C$ is:- (A) $1.8 \times 10^{-16}\ mole\ dm^{-3}$ (B) $1.6 \times 10^{-14}\ mole\ dm^{-3}$ (C) $1.0 \times 10^{-16}\ mole^2\ dm^{-6}$ (D) $1.8 \times 10^{-14}\ mole^2\ dm^{-6}$

(15) The molal boiling point constant is the ratio of the elevation in boiling point to:-

(A) Molarity (B) Molality (C) Mole fraction of solute (D) Mole fraction of solvent

(16) The oxidation number of Fluorine in OF_2 is:- (A) $+2$ (B) -2 (C) -1 (D) $+1$

(17) The unit of the rate constant is the same as that of rate of reaction in:-

(A) 1st order reaction (B) 2nd order reaction (C) Zero order reaction (D) 3rd order reaction

BOARD OF INTERMEDIATE AND SECONDARY EDUCATION, MULTAN (New Scheme)

OBJECTIVE KEY FOR INTER (PART-I / II) Annual Examination, 2017.

Name of Subject Chemistry Session 2015-17

Group: 1st

Q. Nos.	Paper Code 2481	Paper Code 2483	Paper Code 2485	Paper Code 2487
1.	C	B	A	B
2.	D	C	B	C
3.	C	A	B	B
4.	B	B	C	C
5.	C	C	B	C
6.	A	A	C	D
7.	B	B	C	C
8.	C	D	D	B
9.	A	A	C	C
10.	B	B	B	A
11.	D	B	C	B
12.	A	C	A	C
13.	B	B	B	A
14.	B	C	C	B
15.	C	C	A	D
16.	B	D	B	A
17.	C	C	D	B
18.				
19.				
20.				

Group: 2nd

Q. Nos.	Paper Code 2482	Paper Code 2484	Paper Code 2486	Paper Code 2488
1.	B	B	B	C
2.	A	B	C	B
3.	C	B	B	C
4.	B	D	C	C
5.	B	C	B	B
6.	B	A	C	A
7.	D	C	C	C
8.	C	B	B	B
9.	A	C	A	B
10.	C	B	C	B
11.	B	C	B	D
12.	C	B	B	C
13.	B	C	B	A
14.	C	C	D	C
15.	B	B	C	B
16.	C	A	A	C
17.	C	C	C	B
18.				
19.				
20.				