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Roll No. of Candidate: _____

Chemistry (New Scheme)
Time: 20 Minutes

(INTERMEDIATE PART-I) 319-(IV)
OBJECTIVE
Code: 6487

Group: I

Paper: I
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 other blank.

- In zero order reaction the rate is independent of:
 - temperature of reaction
 - concentration of reactants
 - concentration of products
 - none of these
- Calorie is equivalent to:
 - 0.4184 J
 - 41.84 J
 - 4.184 J
 - 418.4 J
- Stronger the oxidizing agent greater is the:
 - oxidation potential
 - reduction potential
 - redox potential
 - E.M.F of cell
- Which of the halogen halides has the highest percentage of ionic character:
 - HCl
 - HBr
 - HF
 - HI
- A solution of glucose is 10% w/v the volume in which one gm mole is dissolved will be:
 - 1 dm³
 - 1.8 dm³
 - 200 cm³
 - 900 cm³
- In order to raise the boiling point of water upto 110°C the external pressure should be:
 - between 760 torr and 1200 torr
 - between 200 torr and 760 torr
 - 765 torr
 - any value of pressure
- Which of the following molecules has zero dipole moment:
 - NH₃
 - CHCl₃
 - H₂O
 - BF₃
- If absolute temperature of a gas is doubled and pressure is reduced to one half, the volume of a gas will:
 - remain unchanged
 - increase four times
 - reduced to $\frac{1}{4}$
 - be doubled
- The pH of 10⁻³ mol.dm⁻³ of aqueous solution of H₂SO₄ is:
 - 3.0
 - 2.7
 - 2.0
 - 1.5
- The volume of a gas will become twice of what it is at 0°C:
 - 546 °C
 - 200 °C
 - 546 K
 - 273 K
- Bohr's model of atom is contradicted by:
 - Planck's quantum theory
 - dual nature of matter
 - Heisenberg's uncertainty principle
 - all of the above
- Solvent extraction is an equilibrium process and it is controlled by:
 - law of mass action
 - the amount of solvent used
 - distribution law
 - the amount of solute
- The nature of positive rays depend on:
 - nature of electrode
 - nature of residual gas
 - nature of discharge tube
 - all of the above
- 27 gms of Al will react completely with how much mass of O₂ to produce Al₂O₃
 - 8.0 g of oxygen
 - 16.0 g of oxygen
 - 32.0 g of oxygen
 - 24.0 g of oxygen
- The molarity of pure H₂O is:
 - 1
 - 18
 - 55.5
 - 6
- The mass of one mole of electrons is:
 - 1.008 mg
 - 0.55 mg
 - 0.184 mg
 - 1.673 mg
- When water freezes at 0°C its density decreases due to:
 - cubic structure of ice
 - change of bond length
 - empty spaces present in the structure of ice
 - changes of bond angles

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Chemistry (New Scheme)

(INTERMEDIATE PART-I) 319

Group: I

Paper: I

Time: 2:40 Hours

SUBJECTIVE

Marks: 68

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

(SECTION - I)

2. Write short answers to any EIGHT questions.

(2 × 8 = 16)

- i. Why most of the elements have fractional atomic mass?
- ii. Differentiate between "Molecular Formula" and "Empirical Formula".
- iii. Why 80 g of glucose and 342 g of sucrose have same number of molecules but different number of atoms?
- iv. Write down four properties of best solvent chosen for crystallization.
- v. Differentiate between adsorption and partition chromatography.
- vi. Define critical temperature and critical pressure.
- vii. Calculate the S.I units of 'R'.
- viii. Define plasma. How it is formed?
- ix. Why gases show Non-Ideal behavior at low temperature and high pressure?
- x. Write two differences between Ideal and Non-Ideal solutions.
- xi. Define Heat of solution. Give example.
- xii. Why aqueous solution of CH_3COONa is basic?

3. Write short answers to any EIGHT questions.

(2 × 8 = 16)

- i. Define vapour pressure. Name the factors which affect vapour pressure.
- ii. What are dipole-dipole forces. Name the properties which are affected by these forces.
- iii. Define Anisotropy and Allotropy.
- iv. Boiling point of water is high as compared to boiling point of ether. Why?
- v. State Moseley's Law. Give its two importances.
- vi. Justify that the distance gaps between different orbits go on increasing from the lower to the higher orbits.
- vii. Why are positive rays called canal rays?
- viii. Draw shapes of 'S' and 'P' orbitals.
- ix. Define common ion effect giving an example.
- x. State law of Mass Action.
- xi. Define order of reaction. Give an example of pseudo first order reaction.
- xii. Write two properties of enzyme catalysis.

4. Write short answers to any SIX questions.

(2 × 6 = 12)

- i. Define octet rule. Give two examples.
- ii. Atomic Radii increase in group and decrease in period, explain it.
- iii. Cationic radius is smaller than parent atom, give reason.
- iv. How electronegativity is used to find nature of chemical bond.
- v. Define exothermic reaction. Give two examples.
- vi. Define Spontaneous process. Give two examples.
- vii. Find oxidation number of "Mn in KMnO_4 ".
- viii. Explain electrolysis of fused PbCl_2 .
- ix. Write the function of salt bridge in Galvanic cell.

(Turn Over)

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Roll No. of Candidate: _____

Chemistry (New Scheme)
Time: 20 Minutes

(INTERMEDIATE PART-I) 319 – (IV) Group: II
OBJECTIVE

Code: 6488

Paper: I
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 other blank.

1. A solution of glucose is 10% w/v. The volume in which 1 g mole of it is dissolved will be:
A) 1 dm³ B) 1.8 dm³ C) 200 cm³ D) 900 cm³
2. The molar volume of CO₂ 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
3. Splitting of spectral lines when the atoms are subjected to strong electric field is called:
A) zee-man effect B) stark effect C) photo electric effect D) Compton effect
4. Molarity of pure water is:
A) 1.0 B) 18.0 C) 55.5 D) 6.0
5. Orbitals having same energy are called:
A) hybrid orbitals B) valence orbitals C) degenerate orbitals D) d-orbitals
6. The volume occupied by 1.4 g of N₂ at S.T.P is:
A) 2.24 dm³ B) 22.4 dm³ C) 1.12 dm³ D) 112 cm³
7. Calorie is equivalent to:
A) 0.418 J B) 41.84 J C) 4.184 J D) 418.4 J
8. Solvent extraction is an equilibrium process and is controlled by:
A) law of mass action B) distribution law
C) amount of solvent used D) the amount of solute
9. The mass of one mole of electrons is:
A) 1.008 mg B) 0.55 mg C) 0.184 mg D) 1.673 mg
10. In zero order reaction, the rate is independent of:
A) temperature of reaction B) concentration of reactants
C) concentration of products D) none of these
11. Which of the following is a pseudo solid?
A) CaF₂ B) glass C) NaCl D) all of these
12. Stronger the oxidizing agent, greater is the:
A) oxidation potential B) reduction potential C) redox potential D) E.M.F of cell
13. Which of the following species has unpaired electrons in the anti-bonding molecular orbitals:
A) O₂²⁺ B) N₂²⁻ C) B₂ D) F₂
14. Pressure remaining constant, at which temperature, the volume of gas will become twice of what it is at 0 °C :
A) 546 °C B) 200 °C C) 546 K D) 273 K
15. Ionic solids are characterized by:
A) low melting points B) high vapour pressures
C) good conductivity in solid state D) solubility in polar solvents
16. Which of the following molecules has zero dipole moment:
A) NH₃ B) CHCl₃ C) H₂O D) BF₃
17. The pH of 10⁻³ mole.dm⁻³ of an aqueous solution of H₂SO₄ is:
A) 3.0 B) 2.7 C) 2.0 D) 1.5

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(SECTION - II)

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| 5. | (a) | Write a note on Limiting reactant. Explain it giving at least two examples. | 4 |
| | (b) | Write four important properties of Metallic solids. | 4 |
| 6. | (a) | 250 cm ³ of hydrogen is cooled from 127°C to -27°C by maintaining the pressure constant. Calculate the new volume of gas at low temperature. | 4 |
| | (b) | Write down any four properties of positive rays. | 4 |
| 7. | (a) | Explain postulates of molecular orbital theory. | 4 |
| | (b) | Derive the relationship between ΔH and ΔE , where H stands for enthalpy and E stands for internal energy. Which are two conditions when ΔH and ΔE becomes equal. | 4 |
| 8. | (a) | Ca (OH) ₂ is a sparingly soluble compound. Its solubility product is 6.5×10^{-6} . Calculate the solubility of Ca(OH) ₂ . | 4 |
| | (b) | Describe any four physical methods for the determination of the rate of a chemical reaction. | 4 |
| 9. | (a) | Give graphical explanation for Elevation of boiling point of a solution. | 4 |
| | (b) | Explain four Industrial applications of Electrolysis. | 4 |

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