

Objective
Paper Code
6486

Intermediate Part First
CHEMISTRY (Objective) GROUP - II
Time: 20 Minutes Marks: 17

Roll No. : _____
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Q.No.1 You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill the relevant circle in front of that question number on computerized answer sheet. Use marker or pen to fill the circle. Cutting or filling two or more circles will result in zero marks in that question. Attempt as many questions as given in objective type question paper and leave other circles blank.

S.#	Questions	A	B	C	D
1	Ionic solids are characterized by:	Low melting point	Good conductors in solid state	High vapour pressure	Solubility in polar solvents
2	London dispersion forces are present among the:	Molecules of liquid water	Molecule of hydrogen chloride gas	Molecule of solid iodine	All these
3	Value of R at STP:	$8.21 \text{ dm}^3 \text{ atm k}^{-1} \text{ mol}^{-1}$	$0.0821 \text{ dm}^3 \text{ atm k}^{-1} \text{ mol}^{-1}$	$0.00821 \text{ dm}^3 \text{ atm k}^{-1} \text{ mol}^{-1}$	$0.000821 \text{ dm}^3 \text{ atm k}^{-1} \text{ mol}^{-1}$
4	Gases deviate from ideal behaviour at high pressure because:	At high pressure, the gas molecule move in one direction only	At high pressure, the gas molecules move in all direction	At high pressure, there are significant attractive forces	All these
5	Coloured impurities appear during crystallization are removed by boiling the substance in the solvent with:	Silica gel	Benzoic acid	Powdered animal charcoal	CaCl_2
6	A technique in which a solute distribute itself in stationary phase and mobile phase is called:	Sublimation	Solvent extraction	Chromatography	None of these
7	Many elements have fractional atomic masses. This is because:	Mass of the atom is itself fractional	Atomic mass are average masses of isobars	Atomic masses are average masses of isotopes	Atomic masses are average masses of isotopes proportional to their relative abundance
8	The volume occupied by 1.4g of N_2 at S.T.P. is:	2.24 dm^3	22.4 dm^3	1.12 dm^3	112 cm^3
9	The catalytic activity of enzyme is greatly enhanced by the presence of:	Inhibitors	Coenzymes	Activators	Coenzymes & activators
10	Oxidation number of 'Mn' in KMnO_4 is:	3	5	7	9
11	18gram glucose is dissolved in 90gram of water. The relative lowering of vapour pressure equal to:	$\frac{1}{5}$	5.1	$\frac{1}{51}$	6
12	pH of $10^{-4} \text{ mol dm}^{-3}$ of HCl is:	1	2	3	4
13	For the reaction $\text{NaOH} + \text{HCl} \rightarrow \text{NaCl} + \text{H}_2\text{O}$ the change in enthalpy is:	Heat of reaction	Heat of formation	Heat of neutralization	Heat of combustion
14	Bond order for He_2 is:	0	1	2	3
15	Ethyne molecule have:	Three π bonds between carbon atom	Three σ bonds between carbon atom	One σ and two π bonds between carbon atom	One π and two σ bonds between carbon atom
16	Quantum number value for 2p orbitals are:	$n = 2, \ell = 1$	$n = 1, \ell = 2$	$n = 1, \ell = 0$	$n = 2, \ell = 0$
17	In the ground state of an atom, the electron is present:	In the nucleus	In the second shell	Nearest to the nucleus	Farthest from the nucleus

CHEMISTRY (Subjective) GROUP - II

Time: 02:40 Hours

Marks: 68

FBD-42-22**SECTION - I****2. Write short answers of any EIGHT parts.**

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- Define isotopes. Write isotopes of carbon.
- Mg atom is twice heavier than carbon atom. Justify.
- What is macro molecule? Give example.
- Define partition chromatography with example.
- State distribution law.
- How fluted filter paper is prepared?
- State Charle's law. Write its mathematical form.
- Define critical temperature and critical pressure of a substance.
- Differentiate between natural and artificial plasma.
- Differentiate between reversible and irreversible reactions.
- Define Buffer capacity.
- What is the effect of common ion on solubility?

3. Write short answers of any EIGHT parts.

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- Why is boiling point of H_2O greater than that of HF ?
- What are London forces? Give an example.
- Define lattice energy. Give one example.
- What are molecular solids? What type of interactions hold them together?
- Define spectrum. Give its two types.
- The e/m values of positive rays for different gases are different but those for cathode rays, the e/m values are same. Why?
- How are the neutrons involved in the conversion of $^{65}_{29}Cu$ into $^{66}_{30}Zn$?
- What are x-rays? How are they produced?
- Aqueous solution of $CuSO_4$ is acidic in nature. Give the reason.
- Why are $NaCl$ and KNO_3 used to lower the melting point of ice?
- What are Pseudo first order reactions? Give one example.
- How does the surface area of reactants affect the rate of reaction? Give an example.

4. Write short answers of any SIX parts.

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- How does the electronegativity difference decide the nature of ionic bond?
- Why an ionic bond is stronger than covalent bond?
- Why the atomic radii increase down the group?
- How the bond length is affected by hybridization?
- What is state and state function?
- What do you mean by internal energy of chemical system?
- Define surroundings and give examples.
- Write the cathodic reaction in fuel cells.
- Give the structure of anode and cathode in lead acid battery.

SECTION - II Attempt any THREE questions. Each question carries 08 marks.

- Write various steps to calculate the empirical formula of a compound. 1,1,1,1
- What is Plank's Quantum Theory? Write its main points. 1,1,1,1
- 250cm³ of the sample of hydrogen effuses four times as rapidly as 250cm³ of an unknown gas. Calculate the molar mass of unknown gas. 04
- Describe fuel cells. Give their uses. 02,02
- Write postulates of M.O.T. and explain oxygen molecule by this theory. 04
- Explain first law of thermodynamics. 04
- What are liquid crystals? Give their uses. 04
- The solubility of CaF_2 in water at 25°C is found to be $2.05 \times 10^{-4} \text{ mol dm}^{-3}$. What is the value of K_{sp} at this temperature? 04
- Give applications of elevation of boiling point and depression of freezing point. 04
- Explain rate determining step in detail. 04