Objective
Paper Code
6483

Intermediate Part First - 903
CHEMISTRY (Objective) **GROUP - I**
Time: 20 Minutes   Marks: 17

Roll No. : _____

☆

☆

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 circles. 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.coi

FBD-Gr-22

S.#	Questions	A	B	C	D
1	If rate equation of reaction $2A + B \rightarrow Product$, is rate = $K[A]^2[B]$ and A is present in large excess, then order of reaction is:	1	2	3	4
2	The oxidation state of 'Mn' in $KMnO_4$ is:	+7	+6	+2	+5
3	18g glucose dissolved in 90gm of H_2O has relative lowering of vapour pressure equal to:	$\frac{18}{90}$	$\frac{1}{6}$	$\frac{10}{51}$	$\frac{1}{51}$
4	pH of human blood is:	7.35	6.35	5.35	4.35
5	For a given process, the heat changes at constant pressure (q_p) and at constant volume (q_v) are related to each other as:	$q_p = q_v$	$q_p < q_v$	$q_p > q_v$	$q_p = \frac{q_v}{2}$
6	Which of the hydrogen halides has the highest percentage ionic character?	HCl	HBr	HF	HI
7	Ionization energy for $Mg \rightarrow Mg^+ + 1 e^-$ has $\Delta H = ?$	738 KJ mol^{-1}	238 KJ mol^{-1}	448 KJ mol^{-1}	138 KJ mol^{-1}
8	Splitting of spectral lines when atoms are subjected to strong electrical field is called:	Zeeman effect	Stark effect	Photoelectric effect	Compton effect
9	De-Brogli equation is represented as:	$h = \frac{\lambda}{mv}$	$m = \frac{h}{\lambda v}$	$m = \frac{h}{\lambda}$	$\lambda = \frac{h}{mv}$
10	The molecules of CO_2 in dry ice form the:	Ionic crystals	Covalent crystals	Molecular crystals	Metallic crystals
11	Density of ice is minimum at 4°C due to:	Empty spaces in structure of ice	Tetrahedral shape of crystal of ice	Large bond lengths	Large bond angles
12	The temperature of a natural plasma is about:	20000°C	1000°C	5000°C	10000°C
13	The deviation of a gas from ideal behaviour is maximum at:	0°C and 2.0 atm	−10°C and 5 atm	100°C and 2 atm	−10°C and 2 atm
14	The technique of chromatography is useful in organic synthesis for:	Separation	Isolation	Purification	All these
15	Separating funnel is used in the technique of analysis:	Crystallization	Filtration	Solvent extraction	Sublimation
16	Nickel has number of isotopes:	3	5	7	2
17	The number of moles of CO_2, which contain 8.0g of oxygen:	0.25	0.50	1.0	1.50

SECTION – I

2. Write short answers of any EIGHT parts. 16

(i) Magnesium atom is twice heavier than that of carbon atom. Justify it.
(ii) Many chemical reactions taking place in our surrounding involve the limiting reactants. Give examples.
(iii) Molecular formula is multiple of empirical formula. Give an example.
(iv) How is chromatography classified on the basis of stationary phases?
(v) Define sublimation. Give two examples.
(vi) Write names of four steps of crystallization.
(vii) Calculate the value of general gas constant (R) using S.I. units of pressure and volume.
(viii) What is Joule-Thomson effect?
(ix) Write quantitative definition of Charles's law.
(x) State Le-Chatelier's principle.
(xi) How does equilibrium constant tell about direction of reaction?
(xii) What is the effect of common ion on solubility? Give an example.

3. Write short answers of any EIGHT parts. 16

(i) Amorphous solid like glass is also super cooled liquid. Why?
(ii) Cleavage of crystal is itself anisotropic behaviour. Justify it.
(iii) Water and ethanol can mix easily in all proportions. Give reason.
(iv) In a cold winter the fish in garden ponds owe their lives to H-bonding. Explain.
(v) Define Hunds rule with an example.
(vi) Give out two defects of Rutherford Model of an atom.
(vii) Differentiate between Zeeman and Stark effect.
(viii) Define continuous spectrum with an example.
(ix) Why some of properties are called colligative?
(x) What are the conditions to obey colligative properties?
(xi) Define half life time (period) with an example.
(xii) How the surface area affect the rate of reaction?

4. Write short answers of any SIX parts. 12

(i) Why atomic radius cannot be determined precisely?
(ii) How ionization energy changes in periodic table?
(iii) What is coordinate covalent bond? Give one example.
(iv) Why bond order of Helium molecule is zero?
(v) Why enthalpy of neutralization is called enthalpy of formation of H_2O?
(vi) Define heat capacity of a body. Give its mathematical expressions.
(vii) What is enthalpy of reaction? Give example.
(viii) What is oxidation number? Give example.
(ix) Write the product obtained during electrolysis of $PbBr_2$.

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

(a) Describe combustion analysis. Also write formula to calculate percentage of carbon, hydrogen and oxygen.
(b) State Mosley's law. What is its importance?
02,02
01,03

(a) $250 cm^3$ of hydrogen gas is cooled from $127°C$ to $-27°C$ keeping the pressure constant. Calculate the new volume of the gas at low temperature.
(b) Explain the construction and working of fuel cells.
04
04

(a) Give the assumptions and postulates of VSEPR theory.
(b) Define and explain Hess's law of constant heat summation with an example.
1,3
1,3

(a) Write the structure of ice. Why ice floats on water?
(b) The solubility product of Ag_2CrO_4 is $2.6×10^{-2}$ at $25°C$. Calculate the solubility of the compound.
3,1
1,1,1,1

(a) How lowering of vapour pressure as colligative property is used to find out molecular mass of solute?
(b) Explain any four characteristics of a catalyst.
04
04

11-XI122-40000