Model Paper Chemistry Objective

Intermediate Part – I (11th Class) Examination   Session 2012-2013 and onward

Total marks: 17   Paper Code_____   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 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.

Q.No	Question	A	B	C	D
1	Empirical formula of Glucose is	C_2HO	CH_2O	CHO_2	C_2H_2O
2	The number of molecules present in 9.0 gm of pure water are	3.01×10^{23}	6.02×10^{23}	9.03×10^{23}	1.20×10^{24}
3	The drying agent used in a desiccator is	Lithium Chloride	Sodium Chloride	Potassium Chloride	Calcium Chloride
4	The highest temperature at which a substance can exist as liquid, is called its	Absolute	Consolute	Critical Temperature	Transition Temperature
5	The boiling point of water at Mount Everest is	$69^{o}C$	$74^{o}C$	$79^{o}C$	$84^{o}C$
6	The existence of an element in more than one crystalline forms is known as	Isotropy	Aniosotropy	Entropy	Allotropy
7	The Scientist Chadwick in 1932 discovered	Proton	Neutron	Electron	Positron
8	The values of Quantum numbers for 3P orbital are	$n = 1, l = 1$	$n = 2, l = 1$	$n = 3, e = 1$	$n = 3, l = 2$
9	The compound which follows octect rule for bonding is	$NaC\ell$	$BC\ell_3$	PF_5	SF_6
10	The Highest percentage of ionic character is in	HF	$HC\ell$	HBr	HI
11	The amount of heat absorbed when one mole of gaseous atoms are formed from the element under standard conditions is called	Enthalpy of Formation	Enthalpy of atomization	Enthalpy of reaction	Enthalpy of combustion
12	In Haber's process, the maximum yield of ammonia can be obtained by	Increasing Pressure	Decreasing pressure	Increasing volume	Increasing temperature
13	The salt dissolved in water forms a solution with pH greater than 7 is	$NaC\ell$	Na_2CO_3	$CuSO_4$	$NH_4C\ell$
14	The elevation of boiling point of 0.1 molal solution is	$0.0052^{o}C$	$0.052^{o}C$	$0.52^{o}C$	$5.2^{o}C$
15	The oxidation number of Oxygen in OF_2 is	$+ 1$	$- 1$	$+ 2$	$- 2$
16	In Lead Accumulator cell, the electrolyte used is	20 % H_2SO_4	30 % H_2SO_4	40 % H_2SO_4	50 % H_2SO_4
17	Sucrose is converted into Glucose and fructose by enzyme catalyst called	Invertase	Maltase	Urease	Zymase

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Model Paper Chemistry Subjective

Intermediate Part – I (11th Class) Examination   Session 2012-2013 and onward

Total marks: 83   Time: 3:10 hours

SECTION ---------------- I

2.   Answer any Eight parts from the followings:-   8 × 2 = 16
(i)   The removal of an electron from a neutral atom is an endothermic process. Explain with reason.
(ii)   Actual yield is always less than theoretical yield. Give two reasons.
(iii)   Calculate the no. of molecules present in 34 g of H_3PO_4.
(iv)   Solvent extraction ferns the Distribution Law. Justify.
(v)   Define sublimation. Give one example.
(vi)   Calculate the value of General Gas constant in SI units.
(vii)   Pilots feel uncomfortable breathing at higher attitude. Give reason.
(viii) Gases deviate from ideal behaviour at low temperature and high pressure. Give reasons.
(ix)   Table salt is an insulator in solid state. Justify.
(x)   Liquid crystals can be used in diagonosis of Cancer. Explain.
(xi)   Evaporation is a cooling process. Give reason.
(xii)   Graphite has slippery touch. Give reason.

3.   Answer any Eight parts from the followings:-   8 × 2 = 16
(i)   Positive rays are also called canal rays. Give reason.
(ii)   The radius of first orbit of hydrogen atom is 0.529 A^o. Calculate the radius of 3rd orbit of hydrogen atom.
(iii)   Explain stark effect.
(iv)   Pressure can effect the production of Cathode Rays.
(v)   Dipole moment of CO_2 is zero. While that of H_2O is 1.85 D. Explain.
(vi)   Explain the geometry of H_2Se molecule.
(vii)   Electronegativity increases from left to right in periodic table. Give reason.
(viii) Sketch the molecular orbital picture of O_2.
(ix)   Enthalpy is a state function. Justify.
(x)   Born Haber's Cycle is another form of Hess's Law. Justify.
(xi)   Buffers are important in many areas of Chemistry. Justify.
(xii)   Define Le-Chatelier's principle.

4.   Answer any Six parts from the followings:-   6 × 2 = 12
(i)   Give the applications of the solubility product.
(ii)   Depression of freezing point is a colligative property. Justify.
(iii) $Na_2SO_4 \cdot 10H_2O$ shows discontinuous solubility curve. Give reason.
(iv)   What is the molality of a solution prepared by dissolving 5 g of Glucose in 250g of water.
(v)   Electromotive force can be calculated from electrochemical series. Explain with reason.
(vi)   Lead accumulators is a chargeable battery. Comment.
(vii)   Calculate the oxidation number of chromium in;   (a) K_2CrO_4 (b) $K_2Cr_2O_7$
(viii) Differentiate between average and instantaneous rate of reaction.
(ix)   Explain auto-catalysis.

(P.T.O.)

SECTION ------------ II

<u>Note:</u> **Attempt any three questions.**   **(8 x 3 = 24)**

5.(a)   What are London forces. Explain various factors affecting it.   4

  (b)   Mg reacts with HCl to give hydrogen gas. What is the minimum volume of HCl solution (27 % by weight) required to produce 16.1g of H_2. The density of HCl solution is 1.14 g/cm^3. $Mg_{(s)} + 2HCl_{(aq)} \rightarrow MgCl_{2(aq)} + H_{2(g)}$ 4

6.(a)   What is hybridization? Explain Sp^2 hybridization with example.   4

  (b)   State first law of thermodynamics and prove that $\triangle E = q_v$

7.(a)   What is Plasma? How is it produced? Give its two applications.   4

  (b)   Describe Milikian's Oil Drop method for the measurement of charge of an electron.   4

8. (a)   What is Standard Hydrogen Electrode (SHE)? How is it used for the

         measurement of electrode potential.   4

  (b)   Calculate the pH of a buffer solution in which 0.11 M CH_3COONa and 0.09 M. acetic acid solutions are present. K_a for CH_3COOH is 1.85×10^{-5} .   4

9. (a)   Explain Roult's Law when both components are volatile.   4

  (b)   Define order of reaction. How does half life method can be used for its determination.   4

SECTION ------------ III

Note: Attempt any three questions   **(5x3=15)**

Q 10: In the laboratory, you are given 100 cm^3 of vinegar solution. How will you determine the amount of acetic acid in it practically?   5

Q 11: During the practical you need pure crystals of $NaCl$, but in laboratory table salt is provided contaminated with sand. How will you get the pure crystals of $NaCl$ from it?   5

Q 12: In Redox titrations, the molarity of $FeSO_4.XH_2O$ is found to be 0.1M. Calculate the number of water molecules (X) in it.   5

Q 13: You are given a solution containing 4g MOH dissolved per dm^3. Find out atomic mass of M volumetrically.   5

Q 14: Katrina has mixed the inks of different colours. You are given this mixture of inks. How will you separate and identify them.   5

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