



BOARD OF INTERMEDIATE & SECONDARY EDUCATION, HYDERABAD

Excellence-Equity-Empathy
CHEMISTRY-I MODEL PAPER

Time: 02:00 hrs

Class: XI

Marks: 85

SECTION-A

Marks: 43

MULTIPLE CHOICE QUESTION (MCQ'S)

- Q1. Attempt all MCQ's each MCQ carries equal marks.
- How would you write 3800000 to only 4 significant figures?
(a) 3.800×10^6 (b) 3800.000 (c) 3800 (d) 3.8×10
 - Simplest formula that gives us information about the simple ratio of atoms in a compound is called?
(a) Structural formula (b) Molecular formula (c) Empirical formula (d) Moral ratio
 - When 0.01kg of CaCO_3 is decomposed the CO_2 produced occupies a volume at S.T.P?
(a) 2.2414 dm^3 (b) 22.414 dm^3 (c) 22414 dm^3 (d) 224014 dm^3
 - All of the following are empirical formulas except?
(a) $\text{N}_2 \text{O}_4$ (b) $\text{C}_3 \text{H}_8$ (c) $\text{Al}_3 (\text{SO}_4)_2$ (d) $\text{Na}_2 \text{SO}_4$
 - The volume is inversely proportional to the pressure if temperature is constant, this statement belongs to:
(a) Dalton's Law of partial pressure (b) Boyle's law
(c) Charle's law (d) N.O.T
 - Which gas will show highest and lowest diffusion?
(a) He and H_2 (b) H_2 and CH_4 (c) CH_4 and SO_2 (d) SO_2 and H_2
 - The resistance to flow of a liquid is called:
(a) Vapour pressure (b) Surface tension (c) Viscosity (d) Evaporation
 - Existence of an element in more than one form is known as:
(a) Allotropy (b) Isomorphism (c) Isotropy (d) None of these
 - The amount of heat required to vaporize one mole of a liquid at its boiling point is called:
(a) Molar heat of vaporization (b) Molar heat of fusion
(c) Latent heat of fusion (d) Molar heat of sublimation
 - In the Bohr's model of atom the electron in an energy level emits or absorbs energy only when it:
(a) Remains in the same energy level (b) Dies out
(c) Changes its energy level (d) Jumps away
 - Bohr's model of atom is contradicted by:
(a) Planck's quantum theory (b) Pauli exclusion principle
(c) Heisenberg uncertainty principle (d) Aufbau principle
 - The neutron was discovered by:
(a) Faraday (b) Eugene Goldstein (c) Rutherford (d) Chadwick
 - The methane molecule has _____ type of hybridization:
(a) SP^3 (b) SP^2 (c) SP^1 (d) dSP^2
 - Mass of electron is:
(a) $9.1 \times 10^{-31} \text{ kg}$ (b) $9.109 \times 10^{-32} \text{ gm}$ (c) $8.1 \times 10^{-31} \text{ g}$ (d) $9.1 \times 10^{-31} \text{ mg}$
 - Which of the following molecules has a pyramidal structure:
(a) CH_4 (b) NH_3 (c) H_2O (d) C_2H_4
 - The attractive force that holds atoms together in a molecule is called:
(a) Force of attraction (b) Electrostatic force (c) Chemical bond (d) A.O.T
 - The sigma bond is formed by:
(a) Parallel overlapping of orbital (b) Linear overlapping of orbital
(c) Both a & b (d) None of these
 - Dipole moment of H_2O is:
(a) 1.85 (b) 1.82 (c) 1.87 (d) 1.83
 - The minimum amount of energy required to break a bond is called:
(a) Bond energy (b) Atomic energy (c) Activation energy (d) Threshold energy
 - Pi-bond is a _____ bond:
(a) Stronger (b) Weaker (c) Both a & b (d) A.O.T
 - The net heat changes in a chemical reaction is same whether, it is brought about in two or more different ways in one or several steps known as:
(a) Henry's law (b) Joule's principle
(c) Hess's law (d) Law of conservation of energy

22. For a given process, the heat change at pressure (qp) and constant volume (qv) are related to each other as:
 (a) $q_p = q_v$ (b) $q_p < q_v$ (c) $q_p > q_v$ (d) $q_p = \Delta E$
23. Anything which is under observation is called:
 (a) Surrounding (b) Universe (c) System (d) N.O.T
24. There are _____ types of system:
 (a) 2 (b) 3 (c) 4 (d) 5
25. $\Delta E = q + w$ is known as:
 (a) Hess's Law (b) 1st law of thermodynamics
 (c) 2nd law of thermodynamics (d) N.O.T
26. Law of mass action was presented by:
 (a) Henderson (b) Lewis (c) Guldberg and Waage (d) Arrhenius
27. When pressure is applied to given equilibrium between ice and water which of the following will happen:
 (a) More ice will be formed (b) More water will be formed
 (c) Equilibrium will not be disturbed (d) Water will formed
28. The law of mass action was given by:
 (a) Eugene Goldstein (b) Galileo (c) C.M Guldberge and Wagge (d) NOT
29. The active mass means:
 (a) The effective concentration taking part in a chemical reaction
 (b) The ineffective concentration taking part in a chemical reaction
 (c) The effective volume taking part in a chemical reaction
 (d) The ineffective volume taking part in a chemical reaction
30. What can affect the magnitude of equilibrium constant K_p of are versible gaseous reaction:
 (a) Temperature (b) Pressure (c) Catalyst (d) None of above
31. Hydrolysis of potassium acetate produces:
 (a) Acidic solution (b) Neutral solution (c) Basic solution (d) None of these
32. The oxidation number of supher in SO_4^{2-} is:
 (a) -6 (b) +6 (c) +2 (d) -2
33. The term hydration means:
 (a) Reaction of water molecules with central atom
 (b) Removal of water molecules from central metal atom
 (c) Surrounding of water molecules around central metal atom
 (d) N.O.T
34. The Phenolphthalein indicator in basic solution is:
 (a) Pink (b) Yellow (c) Colorless (d) Orange
35. The compound which acts itself as indicator is:
 (a) $K_2Cr_2O_7$ (b) KCl (c) $KMnO_4$ (d) N.O.T
36. The oxidation of number of a neutral atom or compound is:
 (a) Zero (b) 0/1 (c) 0/2 (d) All of them
37. The rate of reaction:
 (a) Increases as the reaction proceeds (b) Decreases as the reaction proceeds
 (c) Remains the same as the reaction proceeds (d) May decrease or increase as the reaction proceeds
38. A substance which alters the rate of reaction is called:
 (a) Inhibitor (b) Catalyst (c) Promoter (d) Auto catalyst
39. Instantaneous rate of a chemical reaction is:
 (a) Rate of reaction in the beginning (b) Rate of reaction at the red
 (c) Rate of reaction at a given instant (d) rate of reaction b/w two specific time intervals
40. When temperature of reacting gases is raised to 10K, the rate of reaction becomes:
 (a) Remain same (b) Double (c) Triple (d) Increase four times
41. Which scientist gave the name of electron to the cathode rays?
 (a) Plank (b) Einstein (c) Stoney (d) Bohr
42. The mass number of an element is equal to:-
 (a) Number of electrons in an atom
 (b) Number of protons and neutrons in the nucleus
 (c) Number of protons in the nucleus
 (d) Number of neutrons in the nucleus
43. 32 grams O_2 contains _____ of molecules?
 (a) 6.02×10^{23} (b) 12.04×10^{23} (c) N.O.T (d) A.O.T

The End



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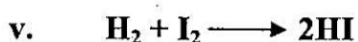
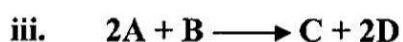
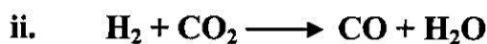
SECTION-B

Marks: 24

Section-B (Short Questions)

Note: Attempt any SIX questions each question carries 04 marks.

- Q2. Define term stoichiometry with its applications.
Q3. Derive the general gas equation with the help of three gas laws?
Q4. Calculate the radius of orbit, $n = 2$ for hydrogen atom?
Q5. Differentiate between sigma and pi-bond?
Q6. Write equilibrium constant expression for the following reactions?



- Q7. Differentiate between hydration and hydrolysis.
Q8. What are slow and fast reactions?
Q9. Define rate of reaction.
Q10. Define molecular formula.

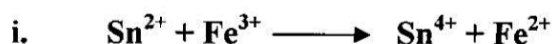
SECTION-C

Marks: 18

(Long Questions)

Note: Attempt any TWO questions each question carries equal marks.

- Q11. Balance the following equation by ion electro method.



- Q12. What is the temperature of one mole of CH_4 gas that occupies 20.0 L at 1.00 atm pressure in Kelvin?
Q13. Calculate the energy of electron when it is revolving in fourth orbit ($n = 4$) of hydrogen atom?

The End