

Note : Four possible answers A, B, C and D to each question are given. The choice which you think is correct, fill that circle in front of that question with Marker or Pen ink in the answer-book. Cutting or filling two or more circles will result in zero mark in that question.

1-1	Equal masses of methane and oxygen gases are mixed in an empty container at 25 °C. The fraction of the total pressure exerted by oxygen is : (A) $\frac{1}{3}$ (B) $\frac{8}{9}$ (C) $\frac{1}{9}$ (D) $\frac{16}{17}$
2	Orbitals having same energy are called : (A) Hybrid orbitals (B) Valence orbitals (C) Degenerate orbitals (D) d-orbitals
3	For which system does the equilibrium constant K_c has units of (concentration) ⁻¹ : (A) $N_2 + 3H_2 \rightleftharpoons 2NH_3$ (B) $H_2 + I_2 \rightleftharpoons 2HI$ (C) $2NO \rightleftharpoons N_2O_4$ (D) $2HF \rightleftharpoons H_2 + F_2$
4	All the photochemical reactions are usually : (A) First order reactions (B) Second order reactions (C) Zero order reactions (D) Third order reactions
5	The largest number of molecules are present in : (A) 3.6 g of H_2O (B) 4.8 g of C_2H_5OH (C) 2.8 g of CO (D) 5.4 g of N_2O_5
6	Which of the following hydrogen halide has the highest percentage of ionic character : (A) HCl (B) HBr (C) HF (D) HI
7	The colour of iodine in organic layer is : (A) Brown (B) Colourless (C) Purple (D) Green
8	The bond order of N_2 molecule is : (A) Zero (B) Three (C) Two (D) One
9	The cathodic reaction in the electrolysis of dil. H_2SO_4 with pt electrode is : (A) Oxidation (B) Reduction (C) Both oxidation and reduction (D) Neither oxidation or reduction
10	ΔH_v value of C_6H_{14} should be ---- than that of C_2H_6 : (A) Greater (B) Lesser (C) Equal to (D) Always lesser
11	The phenomenon of isotopy was introduced by : (A) Soddy (B) Avogadro (C) Rutherford (D) Max plank
12	Diamond is bad conductor because : (A) It has a tight structure (B) It has high density (C) There are no free electrons present in the crystal of diamond to conduct electricity (D) Is transparent to light
13	During liquefaction of gases the intermolecular spaces : (A) Decreases (B) Increases (C) Remains constant (D) Cannot be predicted
14	Rutherford model of atom failed because : (A) The atom did not have a nucleus and electron (B) It did not account for attraction between proton and nucleus (C) It did not account for the stability of atom (D) There is actually no space between the nucleus and electron
15	Paper chromatography is known as : (A) Adsorption chromatography (B) Partition chromatography (C) Thin layer chromatography (D) Gas chromatography
16	Which one is not a state function : (A) Temperature (B) Internal energy (C) Work (D) Volume
17	Molarity of pure water is : (A) 1 (B) 18 (C) 55.5 (D) 6