

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	For which system does the equilibrium constant, K_c has the units of (concentration) ⁻¹ : (A) $N_2 + 3H_2 \rightleftharpoons 2NH_3$ (B) $H_2 + I_2 \rightleftharpoons 2HI$ (C) $2NO_2 \rightleftharpoons N_2O_4$ (D) $2HF \rightleftharpoons H_2 + F_2$
2	NH ₃ shows maximum boiling point among the hydrides of group V-A elements due to : (A) Very small size of nitrogen (B) Lone pair of electrons present on nitrogen (C) Enhanced electronegative character of nitrogen (D) Pyramidal structure of NH ₃
3	The molar volume of CO ₂ is maximum at : (A) S.T.P (B) 127 °C and 1 atm. (C) 0 °C and 2 atm. (D) 273 °C and 2 atm.
4	Which one has a regular tetrahedral shape : (A) SnCl ₂ (B) CH ₄ (C) SO ₃ (D) BF ₃
5	Splitting of spectral lines when atoms are subjected to strong electric field is called : (A) Zeeman effect (B) Stark effect (C) Photoelectric effect (D) Compton effect
6	One mole of SO ₂ contains : (A) 6.02×10^{23} atoms of oxygen (B) 18.1×10^{23} molecules of SO ₂ (C) 6.02×10^{23} atoms of sulphur (D) 4 gram atoms of SO ₂
7	With increase of 10 °C temperature , the rate of reaction doubles, this increase in rate of reaction is due to : (A) Decrease in activation energy of reaction (B) Decrease in the number of collisions between reactant molecules (C) Increase in activation energy of reactants (D) Increase in number of effective collisions
8	Which of the following will have the same number of molecules at S.T.P : (A) 280 cm ³ of CO ₂ and 280 cm ³ of N ₂ O (B) 11.2 dm ³ of O ₂ and 32 g of O ₂ (C) 44 g of CO ₂ and 11.2 dm ³ of CO (D) 28 g of N ₂ and 5.6 dm ³ of oxygen
9	The change in heat energy of a chemical reaction at constant temperature and pressure is called : (A) Enthalpy change (B) Bond energy (C) Heat of sublimation (D) Internal energy change
10	The mass of one mole of electrons is : (A) 1.008 mg (B) 0.55 mg (C) 0.184 mg (D) 1.673 mg
11	The wave number of the light emitted by a certain source is $2 \times 10^6 \text{ m}^{-1}$. The wavelength of this light will be : (A) 500 nm (B) 500 m (C) 200 nm (D) $5 \times 10^7 \text{ m}$
12	Solvent extraction method is particularly useful technique for separation, when the product to be separated is : (A) Non-volatile or thermally unstable (B) Volatile or thermally stable (C) Non-volatile or thermally stable (D) Volatile or thermally unstable

13	Molarity of pure water is : (A) 1 (B) 18 (C) 55.5 (D) 6
14	The number of bonds in nitrogen molecule is : (A) One σ and one π (B) One σ and two π (C) Three sigma only (D) Two σ and one π
15	Which of the following statements is not correct about galvanic cell : (A) Anode is negatively charged (B) Reduction occurs at anode (C) Cathode is positively charged (D) Reduction occurs at cathode
16	Which of the following is a pseudosolid : (A) CaF_2 (B) Glass (C) NaCl (D) All
17	Which one does not undergo sublimation : (A) Ammonium chloride (B) Naphthalene (C) Iodine (D) Mercury