Yakeen NEET 2.0 2026

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Chemical Equilibrium

DPP: 2

Q1 At $250^{\circ}C$ and 1 atmospheric pressure, the vapour density of PCl_5 is 57.9 . What will be the dissociation of PCl_5

(A) 1.00 (B) 0.90
(C) 0.80 (D) 0.65

Q2 N_2O_4 dissociates as $N_2O_{4(g)} \rightleftharpoons 2NO_{2(g)}$ at $273\ K$ and 2 atm pressure. The equilibrium mixture has a density of 41 . What will be the degree of dissociation

(A) 14.2% (B) 16.2%
(C) 12.2% (D) None

Q3 An unknown compound A dissociates at $500^{\circ}C$ to give products as follows

$$A_{(g)} \rightleftharpoons B_{(g)} + C_{(g)} + D_{(g)}$$

Vapour density of the equilibrium mixture is 50 when it dissociates to the extent to 10%. What will be the molecular weight of compound A

(A) 120 (B) 130
(C) 134 (D) 140

Q4 The active mass of $64gm$ of HI in a two litre flask would be

(A) 2 (B) 1
(C) 5 (D) 0.25

Q5 15 moles of H_2 and 5.2 moles of I_2 are mixed and then allowed to attain equilibrium at $500^{\circ}C$. At equilibrium, the concentration of HI is found to be 10 moles. The equilibrium constant for the formation of HI is

(A) 50 (B) 15
(C) 100 (D) 25

Q6 $NH_4COONH_2(s) \rightleftharpoons 2NH_3(g) + CO_2(g)$.
If equilibrium pressure of gaseous mixture is 3 atm then K_p will be:

(A) 4 (B) 27
(C) $\frac{4}{27}$ (D) $\frac{1}{27}$

Q7 2 moles of N_2 is mixed with 6 moles of H_2 in a closed vessel of 1 litre capacity. If 50% N_2 is converted into NH_3 at equilibrium, the value of K_c for the reaction is

$$N_2(g) + 3H_2(g) \rightleftharpoons 2NH_3(g)$$

(A) $\frac{4}{27}$
(B) $\frac{27}{4}$
(C) $\frac{1}{27}$
(D) 27

Q8 For the reaction $A + B \rightleftharpoons 2C$, at the equilibrium concentration of A and B each is 0.20 mole/litre concentration C is observed as $0.60\ mol/$ litre. Equilibrium constant (K_c) will be

(A) 9 (B) 18
(C) 6 (D) 24

Q9 The equilibrium constant of a reaction is 20.0. At equilibrium, the rate constant of forward reaction is 10.0. The rate constant for backward reaction is

(A) 0.5 (B) 2
(C) 10 (D) 200

Q10 Eight mole of a gas AB_3 attain equilibrium in a closed container of volume $1dm^3$ as, $2AB_{3(g)} \rightleftharpoons A_{2(g)} + 3\,B_{2(g)}$. If at equilibrium 2 mole of A_2 are present, then equilibrium constant is

(A) $72\ mol^2\ L^{-2}$
(B) $36\ mol^2\ L^{-2}$
(C) $3\ mol^2\ L^{-2}$
(D) $27\ mol^2\ L^{-2}$

Q11 If one third of HI decomposes at a particular temperature,$\mathrm{K_c}$ for $2\mathrm{HI}_{(g)} \rightleftharpoons \mathrm{H}_{2(\,g)} + \mathrm{I}_{2(\,g)}$ is

(A) $1/16$ (B) $1/4$

(C) $1/6$ (D) $1/2$

Q12 In chemical reaction $A \rightleftharpoons B$, the system will be known in equilibrium when

(A) A completely changes to B

(B) 50% of A changes to B

(C) The rate of change of A to B and B to A on both the sides are same

(D) Only 10% of A changes to B

Q13 $\mathrm{A} + \mathrm{B} \rightleftharpoons \mathrm{C} + \mathrm{D}$. If initially the concentration of A and B are both equal but at equilibrium, concentration of D will be twice of that of A then what will be the equilibrium constant of reaction?

(A) $4/9$ (B) $9/4$

(C) $1/9$ (D) 4

Q14 $2\ \mathrm{mol}$ of $\mathrm{N_2}$ is mixed with $6\ \mathrm{mol}$ of $\mathrm{H_2}$ in a closed vessel of one litre capacity. If 50% of $\mathrm{N_2}$ is converted into $\mathrm{NH_3}$ at equilibrium, the value of $\mathrm{K_c}$ for the reaction, $\mathrm{N_2(\,g) + 3H_2(\,g) \rightleftharpoons 2NH_3(\,g)}$ is

(A) $4/27$ (B) $27/4$

(C) $1/27$ (D) 24

Q15 The partial pressure of $\mathrm{CH_3OH_{(g)}}$, $\mathrm{CO_{(g)}}$ and $\mathrm{H_{2(\,g)}}$ in equilibrium mixture for the reaction, $\mathrm{CO_{(g)} + 2H_{2(\,g)} \rightleftharpoons CH_3OH_{g)}}$ are $2.0, 1.0$ and $0.1\ \mathrm{atm}$ respectively at $427^{\circ}\mathrm{C}$. The value of $\mathrm{K_p}$ for the decomposition of $\mathrm{CH_3OH}$ to CO and $\mathrm{H_2}$ is

(A) 10^2 atm

(B) $2 \times 10^2\ \mathrm{atm^{-1}}$

(C) $50\ \mathrm{atm^2}$

(D) $5 \times 10^{-3}\ \mathrm{atm^2}$

Answer Key

Q1	(C)
Q2	(C)
Q3	(A)
Q4	(D)
Q5	(A)
Q6	(A)
Q7	(A)
Q8	(A)
Q9	(A)
Q10	(D)
Q11	(A)
Q12	(C)
Q13	(D)
Q14	(A)
Q15	(D)