

Yakeen NEET 2.0 2026

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Chemical Equilibrium

DPP: 2

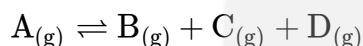
Q1 At 250°C and 1 atmospheric pressure, the vapour density of PCl_5 is 57.9. What will be the dissociation of PCl_5

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

Q2 N_2O_4 dissociates as $\text{N}_2\text{O}_{4(g)} \rightleftharpoons 2\text{NO}_{2(g)}$ 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°C to give products as follows



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

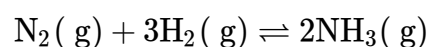
Q5 15 moles of H_2 and 5.2 moles of I_2 are mixed and then allowed to attain equilibrium at 500°C . At equilibrium, the concentration of HI is found to be 10 moles. The equilibrium constant for the formation of HI is

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

Q6 $\text{NH}_4\text{COONH}_2(s) \rightleftharpoons 2\text{NH}_3(g) + \text{CO}_2(g)$. 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



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

Q8 For the reaction $\text{A} + \text{B} \rightleftharpoons 2\text{C}$, 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 1 dm^3 as, $2\text{AB}_{3(g)} \rightleftharpoons \text{A}_{2(g)} + 3\text{B}_{2(g)}$. If at equilibrium 2 mole of A_2 are present, then equilibrium constant is

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



- Q11** If one third of HI decomposes at a particular temperature, K_c for $2\text{HI}_{(g)} \rightleftharpoons \text{H}_{2(g)} + \text{I}_{2(g)}$ 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** $A + B \rightleftharpoons C + D$. 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 mol of N_2 is mixed with 6 mol of H_2 in a closed vessel of one litre capacity. If 50% of N_2 is converted into NH_3 at equilibrium, the value of K_c for the reaction,
 $\text{N}_2(g) + 3\text{H}_2(g) \rightleftharpoons 2\text{NH}_3(g)$ is
 (A) $4/27$ (B) $27/4$
 (C) $1/27$ (D) 24
- Q15** The partial pressure of $\text{CH}_3\text{OH}_{(g)}$, $\text{CO}_{(g)}$ and $\text{H}_2(g)$ in equilibrium mixture for the reaction,
 $\text{CO}_{(g)} + 2\text{H}_{2(g)} \rightleftharpoons \text{CH}_3\text{OH}_{(g)}$ are 2.0, 1.0 and 0.1 atm respectively at 427°C . The value of K_p for the decomposition of CH_3OH to CO and H_2 is
 (A) 10^2 atm
 (B) $2 \times 10^2 \text{ atm}^{-1}$
 (C) 50 atm^2
 (D) $5 \times 10^{-3} \text{ atm}^2$



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)



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