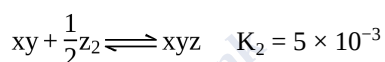


JEE MAIN EQUILIBRIUM — EQUILIBRIUM CONSTANT EXPRESSION (Kp/Kc) AND FACTORS AFFECTING Kp OR Kc — PYQS

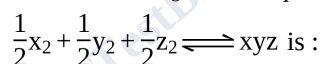
Max. Marks: 16
Questions: 4

Section A (MCQ) — 3 questions

Q.1 Consider the following reactions in which all the reactants and products are present in gaseous state

$$2xy \rightleftharpoons x_2 + y_2 \quad K_1 = 2.5 \times 10^5$$


The value of K_3 for the equilibrium



[JEE Main 2026 (Online) 8th April Evening Shift]

- (1) 2.5×10^{-3} (2) 2.5×10^3
 (3) 1.0×10^{-5} (4) 5×10^{-3}

Scan or tap for the full solution



Q.2 At T(K), the equilibrium constant of $A_2(g) + B_2(g) \rightleftharpoons C(g)$ is 2.7×10^{-5} . What is the equilibrium constant for $\frac{1}{3}A_2(g) + \frac{1}{3}B_2(g) \rightleftharpoons \frac{1}{3}C(g)$ at the same temperature?

[JEE Main 2026 (Online) 4th April Morning Shift]

- (1) $(2.7 \times 10^{-5})^3$ (2) 6×10^{-2}
 (3) $\sqrt{2.7 \times 10^{-5}}$ (4) 3×10^{-2}

Scan or tap for the full solution



Q.3 Given below are two statements :
Statement-I: A catalyst cannot alter the equilibrium constant (K_c) of the reaction, temperature remaining constant.

Statement-II: A homogeneous catalyst can change the equilibrium composition of a system, temperature remaining constant.

In the light of the above statements, choose the correct answer from the options given below

[JEE Main 2025 (Online) 3rd April Morning Shift]

- (1) Statement-I is true but Statement-II is false
 (2) Statement-I is false but Statement-II is true
 (3) Both Statement-I and Statement-II are true
 (4) Both Statement-I and Statement-II are false

Scan or tap for the full solution



Section B (Numerical) — 1 question

Q.4 The values of pressure equilibrium constant recorded at different temperatures for the following equilibrium reaction have been given below

$$A(g) \rightleftharpoons B(g) + C(g)$$

$\frac{1}{T} \text{ (K}^{-1}\text{)}$	$\log_{10} K_p$
0.05	3.5
0.06	2.5
0.07	1.5

The magnitude of $\frac{\Delta H^\circ}{R}$ calculated from the above data is _____. (Nearest integer)

[JEE Main 2026 (Online) 5th April Morning Shift]

Scan or tap for the full solution



ANSWER KEY

Section A (MCQ) — 3 questions

Ques.	1	2	3								
Ans.	3	4	1								

Section B (Numerical) — 1 question

Ques.	4										
Ans.	230										