Set – 1

Table 7.1 Some Features of Physical Equilibria

Process	Conclusion
Liquid $\rightleftharpoons$ Vapour H_2O (l) $\rightleftharpoons$ H_2O (g)	p_{H_2O} constant at given temperature
Solid $\rightleftharpoons$ Liquid H_2O (s) $\rightleftharpoons$ H_2O (l)	Melting point is fixed at constant pressure
Solute(s) $\rightleftharpoons$ Solute (solution) Sugar(s) $\rightleftharpoons$ Sugar (solution)	Concentration of solute in solution is constant at a given temperature
Gas(g) $\rightleftharpoons$ Gas (aq) CO_2(g) $\rightleftharpoons$ CO_2(aq)	[gas(aq)]/[gas(g)] is constant at a given temperature $[CO_2(aq)]/[CO_2(g)]$ is constant at a given temperature

Q1. Which of the following statements are correct?

A. (i),(iii) are correct
B. (ii),(iv) are correct
C. (i),(iii),(iv) are correct
D. (i),(ii),(iii),(iv) are correct

Ans. (D)

Get More Learning Materials Here : CLICK HERE www.studentbro.in

Set – 2

Table 7.4 Relations between Equilibrium Constants for a General Reaction and its Multiples.

Chemical equation	Equilibrium constant
$a\,A + b\,B \rightleftharpoons c\,C + d\,D$	K_c
$c\,C + d\,D \rightleftharpoons a\,A + b\,B$	$K_c' = (1/K_c)$
$na\,A + nb\,B \rightleftharpoons ncC + ndD$	$K_c'' = (K_c^n)$

Q1. What is the equilibrium constant of reaction c C + d D⇋ a A + b B, if equilibrium constant of the given reaction a A + b B⇋ c C + dD is Kc.

A. Kc
B. (1/Kc)
C. $[Kc]^2$
D. $(Kc)^3$

Ans. (B)

Q2. If equilibrium constant for the reaction a A + b B⇋ c C + dD is Kc, then equilibrium constant for the reaction na A + nb B⇋ ncC + ndD is

A. $(Kc)^{II}=(Kc)^n$
B. $c(K)^{II}=1/(Kc)^n$
C. $(Kc)^{II}=(Kc)^{n2}$
D. $(Kc)^{II}=(Kc)^{1/n}$

Ans. (A)

Get More Learning Materials Here : CLICK HERE www.studentbro.in

Set – 3

Table 7.5 Equilibrium Constants, K_p for a Few Selected Reactions

Reaction	Temperature/K	K_p
$N_2(g) + 3H_2(g) \rightleftharpoons 2NH_3$	298	6.8×10^5
	400	41
	500	3.6×10^{-2}
$2SO_2(g) + O_2(g) \rightleftharpoons 2SO_3(g)$	298	4.0×10^{24}
	500	2.5×10^{10}
	700	3.0×10^4
$N_2O_4(g) \rightleftharpoons 2NO_2(g)$	298	0.98
	400	47.9
	500	1700

Q1. How will the Kp of the following reaction change at 400K and 500K respectively N2(g) + 3H2(g)⇋ 2NH3

A. Increases, increases
B. Decreases, decreases
C. Increases, decreases
D. Decreases, increases

Ans. (C)

Q2. How will Kp of the following reaction change at 500K and 700K respectively 2SO2(g) + O2(g) ⇋ 2SO(g)

A. Decreases, increases
B. Increases, increases
C. Decreases, decreases
D. Increases, decreases

Ans. (D)

Q3. What happens to the Kp of following reaction as the temperature increases N2O4(g) ⇋ 2NO2(g)

A. decreases
B. increases
C. remains same

Get More Learning Materials Here : CLICK HERE www.studentbro.in

D. cannot say

Ans. (B)

Set – 4

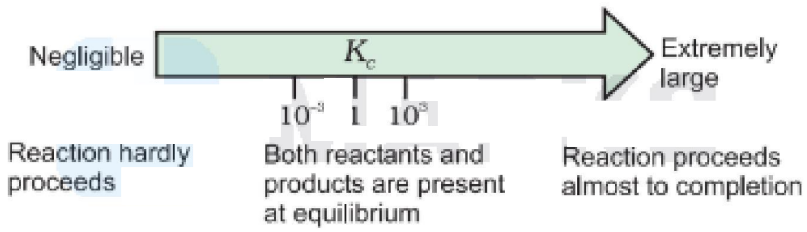

Fig.7.6 *Dependence of extent of reaction on* K_c

Q1. For reactions having Kc less than 10-3

A. Reaction rarely proceeds
B. Products dominate reactants
C. Appreciable range of reactants and products are present
D. Cannot say

Ans. (A)

Q2. What happens for the reactions whose Kc value is greater than 10-3

A. Reactant dominate products
B. Products dominate reactants
C. Appreciable range of reactants and products are present
D. Cannot say

Ans. (B)

Q3. For reactions having Kc value in between 10-3and 103

A. Reaction rarely proceeds
B. Products dominate reactants
C. Appreciable range of reactants and products are present
D. Cannot say

Get More Learning Materials Here : CLICK HERE www.studentbro.in

Ans. (C)

Set – 5

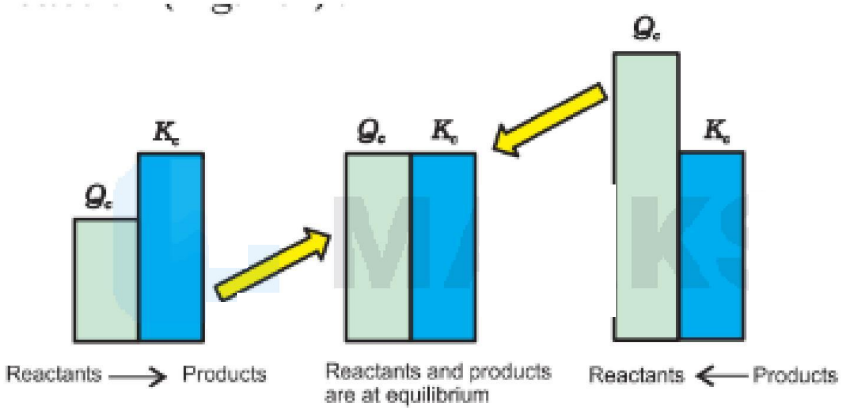

***Fig. 7.7** Predicting the direction of the reaction*

Q1. What happens if a reaction has Qc

A. Net reaction goes from left to right
B. Net reaction goes from right to left
C. Products and reactants are at equilibrium
D. Cannot say

Ans. (A)

Q2. For reaction Qc>Kc, the

A. Net reaction goes from left to right
B. Net reaction goes from right to left
C. Products and reactants are at equilibrium
D. Cannot say

Ans. (B)

Q3. What happens if a reaction has Qc=Kc

A. Net reaction goes from left to right
B. Net reaction goes from right to left

Get More Learning Materials Here : CLICK HERE www.studentbro.in

C. Products and reactants are at equilibrium
D. Cannot say

Ans. (C)

Get More Learning Materials Here : CLICK HERE www.studentbro.in