

ECAT Chemistry Chapter 8 Chemical Equilibrium Online Test

Sr	Questions	Answers Choice
1	$N_2 + 3H_2 \rightleftharpoons 2NH_3$ + Heat for above equation, the maximum product will be obtained at :	A. Low temperature at high pressure. B. High temperature and low pressure. C. High temperature and high pressure. D. Low temperature at low pressure.
2	The substance which increases rate of reaction but remains unchanged at the end of reaction is called :	A. Catalyst. B. Indicator. C. Promoter. D. Activator.
	$N_2 + 3H_2 \rightleftharpoons 2NH_3$	
3	Which of the following change will favor the formation of more NH_3 at equilibrium in above reaction :	A. By adding NH_3 . B. By removing H_2 . C. By decreasing pressure. D. By increasing pressure.
4	Extent to $H_2 + I_2 \rightleftharpoons 2HI$ can be increased by :	A. $\Delta H < 0$ B. $\Delta S > 0$ C. $\Delta S < 0$ D. $\Delta S = 0$
5	$2SO_2 + O_2 \rightleftharpoons 2SO_3$ $\Delta H = -188 \text{ KJ mole}^{-1}$ Which statement about following equilibrium is correct :	A. $\Delta H < 0$, $\Delta S < 0$, $K_p < K_c$ B. $\Delta H > 0$, $\Delta S < 0$, $K_p > K_c$ C. $\Delta H < 0$, $\Delta S > 0$, $K_p < K_c$ D. $\Delta H > 0$, $\Delta S > 0$, $K_p > K_c$

Adding V25 catalyst increase the equilibrium yield of Sulphur trioxide.

A. The value ofKp falls with arise in temperature.

B. The value ofKp is equal tokc.

C. The value ofKp falls with the increase pressure.

D. Adding V2O5 catalyst increase the equilibrium yield of Sulphur trioxide.

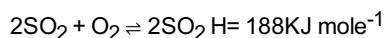
A. Less reactant and more products.
B. Reactants and product in same amounts.

C. More reactants and less products.
D. None of above.

A. Remains unchanged.
B. Product side.
C. Reactant side.
D. None of above.

A. <p class="MsoNormal"><o:p></o:p></p> Kc = [N2O4] / [NO2] ²</sup><o:p></o:p></p>

B. <p class="MsoNormal">Kc = [N2O4] / [NO2] <o:p></o:p></p>



6

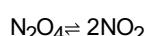
Which statement about following equilibrium is correct :

7

A large value of K_c means that at equilibrium :

8

In exothermic reversible reaction increase in temperature shift the equilibrium to :



9

For the above reaction, which of the Following expression of K_c correct :

C.
$$K_c = \frac{N_{2\text{O}}^2}{N_{2\text{O}_4}^2}$$

D.
$$K_c = \frac{N_{2\text{O}}^2}{N_{2\text{O}_4}^2}$$

10 If K_c of a reaction product is very large, it indicates that equilibrium occurs :

- A. With the help of a catalyst.
- B. With no forward reaction.
- C. At a low product concentration.
- D. At a high product concentration.

11 Almost forward reaction is complete when value of k_c :

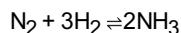
- A. Neither larger nor very small.
- B. Very small.
- C. Very large.
- D. Negligible.

12 In the particular reaction for the value $K_c 1 \times 10^{-25}$ which statement is correct :

- A. Almost forward reaction is completed.
- B. Amount of reactant is negligible as compared to product.
- C. Amount of product is negligible as compared to reactant.
- D. Amount of product is equal to amount of reactant.

13 For what value of K_c almost forward reaction is complete :

- A. $K_c > 10^{30}$
- B. $K_c < 10^{-30}$
- C. $K_c > 0$
- D. $K_c < 1$



14

The unit of K_c for this reaction will be:

- A. $\text{mol}^{2/6}$
- B. $\text{mol}^{-2/6}$
- C. $\text{mol}^{-3/6}$

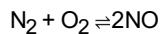
- D. $\text{mol}^{-1/3}$

A. No

B. No

C. No

15



The unit of K_c for this reaction will be:

16

1 mol of N_2O_4 was decomposed according to given equation in 1dm^3 container. At equilibrium x mole of N_2O_4 have dissociated. What is the value of K_c :

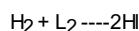
17

The correct relation b/w K_c and K_p is :

18

For the above reaction the relationship b/w k_c and k_p will be :

19



In the above equilibrium system, if the concentration of reactants at 25°C is increased, the value K_c will :

20

A chemical reaction equilibrium is said to have been established when :

21

Law of mass action was given by :

A. $\text{mol}^{-2}\text{dm}^3\text{mol}^{-2}$
B. $\text{mol}^{-1}\text{dm}^3\text{mol}^{-1}$
C. $\text{mol}^{-2}\text{dm}^3\text{mol}^{-2}$
D. $\text{mol}^{-2}\text{dm}^3\text{mol}^{-2}$

A. $2x/(1-x)$
B. $4x/(1-x)$
C. $4x/(1-x)$
D. $2x/(1-x)$

A. $K_c = K_p [P/N] \Delta n$
B. $K_c = K_p (RT) \Delta n$
C. $K_c = K_p (RT) \Delta n$
D. $K_c = K_p (RT) \Delta n$

A. $K_c = K_p RT$
B. $K_p = K_c (RT) - 1$
C. $K_c = K_p (RT) - 2$
D. $K_c = K_p (RT)$

A. Remains Constant
B. Increases
C. Decreases
D. Depends upon nature of reactants

A. Rate of opposing reactions are equal.
B. Rate constants of opposing reactions are equal.
C. Opposing reactions stop.
D. Concentration of reactants and products are equal

A. Guldberg and Waage.
B. Berkeley and Hartley.
C. Ramsay and Reyleigh.
D. Berthelot.

A. Remain same as reaction proceeds.
B. May decrease or increase as

22

The rate of reaction :

- D. May decrease or increase as reaction proceeds .
 - C. Increase as reaction proceeds.
 - D. Decreases as reaction proceeds.
-

23

A chemical reaction A----->B is said to be in equilibrium when :

- A. Rate of transformation of A to B is equal to B to A.
 - B. 50% reactant has been changed to B.
 - C. Conversion of A to B is 50% complete
 - D. Complete conversion of A to B has taken place.
-

24

The rate of a chemical reaction is directly proportional to product of molar concentration of reaction substance it is called :

- A. Law of conservation of energy.
 - B. Law of mass action.
 - C. Rate law .
 - D. Active mass rule.
-

25

What happens when reaction is at equilibrium and more reactant is added :

- A. Forward reaction rate is increased.
 - B. Forward reaction rate is decreased.
 - C. Backward reaction rate is increased.
 - D. Equilibrium remains unchanged.
-

26

A reaction is reversible because :

- A. Products are stable.
 - B. Reactants are reactive.
 - C. Products are reactive.
 - D. Reactants re stable.
-

27

An excess of aqueous silver nitrate is added to aqueous barium chloride and precipitate is removed by filtration. What are the main ion in filtrate?

- A. Ag^{+} and NO_3^-
 - B. Ba^{2+} and NO_3^-
 - C. Ba^{2+} and NO_3^-
 - D. Ba^{2+} and Cl^-
-

28

The solubility product of AgCl is $2.0 \times 10^{-3} \text{ mol}^2 \text{ dm}^{-6}$, The maximum concentration of Ag^+ ion in the solution is :

- A. $2.0 \times 10^{-10} \text{ mol dm}^{-3}$
- B. $1.41 \times 10^{-3} \text{ mol dm}^{-3}$
- C. $1.0 \times 10^{-1} \text{ mol dm}^{-3}$
- D. $10 \times 10^{-10} \text{ mol dm}^{-3}$

</sup></p>
D. <p class="MsoNormal">4.0<sup>

</sup>x 10<sup>-
10</sup> mol dm⁻³<o:p></o:p></p>

-
- 29 The ph of 10-3 mole dm-3 of an aqueous solution of H_2SO_4 is :

A. <p class="MsoNormal">3.0<o:p></o:p></p>
B. <p class="MsoNormal">2.7<o:p></o:p></p>
C. 2.0
D. <p class="MsoNormal">1.5<o:p></o:p></p>

A. T value of K_p falls with a rise in temperate.</sub>

B. The value of K_p falls with increasing pressure</sub><p class="MsoNormal"><o:p></o:p></p>
C. Adding V_{2O}₅catalyst increase the equilibrium yield of sulfur trioxide<p class="MsoNormal"><o:p></o:p></p>
D. The value of K_p is equal to</sub> K_p </sub>
E.
<p class="MsoNormal"><o:p></o:p></p><p class="MsoNormal"><o:p></o:p></p>

-
- Which statement about the following equilibrium is correct?
- 30 $2SO_2(g) + O_2(g) \rightleftharpoons 2S_2O_3(g) \Delta H = -188.3 \text{ KJ mol}^{-1}$