

ECAT Chemistry Chapter 8 Chemical Equilibrium

Sr	Questions	Answers Choice
1	I a chemical reaction equilibrium is said to have been established when :	<p>A. Rate of opposing reactions are equal.</p> <p>B. Rate constants of opposing reactions are equal.</p> <p>C. Opposing reactions stop.</p> <p>D. Concentration of reactants and products are equal</p>
2	Question Image <input style="width: 150px; height: 20px;" type="text"/>	<p>A. Initial concentration of acetic acid</p> <p>B. Initial concentration of ethyl acetate</p> <p>C. Equilibrium concentration of acetic acid</p> <p>D. Equilibrium concentration of ethyl acetate</p>
3	Question Image <input style="width: 150px; height: 20px;" type="text"/>	<p>A. Moles⁻²dm⁺⁶</p> <p>B. No units</p> <p>C. Mole dm⁻³</p> <p>D. Mole⁻¹dm⁻³</p>
4	Which of the following in an example of reversible reaction	
5	Question Image <input style="width: 150px; height: 20px;" type="text"/>	<p>A. 8</p> <p>B. 4</p> <p>C. 9</p> <p>D. 3</p>
6	When rate of forward reaction is equal to rate of backward reaction, then the equilibrium established is called	<p>A. Chemical equilibrium</p> <p>B. Static equilibrium</p> <p>C. Dynamic equilibrium</p> <p>D. None of these</p>
7	1 mol of N ₂ O ₄ was decomposed according to given equation in 1dm ₃ container. At equilibrium x mole of N ₂ O ₄ have dissociated. What is the value of K _C :	<p>A. $\frac{2x(1-x)^2}{(1-x)}$</p> <p>B. $\frac{4x^2}{(1-x)}$</p> <p>C. $\frac{4x(1-x)}{(1-x)}$</p> <p>D. $\frac{2x(1-x)}{(1-x)}$</p>
8	0.1 MHCl has pH= 1.0, it is about 100 times stronger than acetic acid. Then pH of acetic acid will be	<p>A. 0.1</p> <p>B. 2.0</p> <p>C. 1.3</p> <p>D. 3.0</p>
9	pH of 0.1 molar HCl solution is	<p>A. 1</p> <p>B. zero</p> <p>C. 13</p> <p>D. 14</p>
10	For which system does the equilibrium constant, kc has units of (concentration) ?	<p>A. $N_2 + 3H_2 \rightleftharpoons 2NH_3$</p> <p>B. $H_2 + L_2 \rightleftharpoons 2HL$</p> <p>C. $2NO \rightleftharpoons N_2 + O_2$</p> <p>D. $2HF \rightleftharpoons H_2 + F_2$</p>
11	Law of mass action states that rate of chemical reaction is directly proportional to the product of active masses of the reactants. The term active mass means	<p>A. Mass in grams converted to products</p> <p>B. Number of moles</p> <p>C. Number of moles per dm³ of reactants</p> <p>D. Total pressures of the reactants</p>
12	Acetic acid is 1.33% ionized, In 1000 molecules of 0.1 M acetic acid the number of H ⁺ ions is	<p>A. 1.33</p> <p>B. 13.3</p> <p>C. 1.33</p> <p>D. 1</p>
13	strength of an acid can be determined by	<p>A. K_a</p> <p>B. K_p</p> <p>C. K_H</p> <p>D. K_w</p>
14	Question Image <input style="width: 150px; height: 20px;" type="text"/>	<p>A. Increase in concentration of 1</p> <p>B. Decrease in concentration of I₂</p> <p>C. Increase in temperature</p> <p>D. Increase in total pressure</p>

15	Addition of solid NaHCO_3 in water causes ionization of NaHCO_3 its $K_a = 4.7 \times 10^{-8}$. Then this solution has character	A. Acidic B. Very weakly basic C. Alkaline D. Neutral
16	$\text{N}_2 + 3\text{H}_2 \rightleftharpoons 2\text{NH}_3 + \text{Heat}$ 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.
17	The rate of forward reaction is two times that of the reverse reaction at a given temperature and identical concentration, K equilibrium is	A. 0.5 B. 1.5 C. 2.5 D. 2.0
18	Almost forward reaction is complete when value of K_c :	A. Neither larger nor very small. B. Very small. C. Very large. D. Negligible.
19	Question Image	A. Equal volumes of N_2 and H_2 are reacting B. Equal masses of N_2 and H_2 are reacting C. The reaction has stopped D. The same amount of ammonia is formed as is decomposed into N_2 and H_2
20	K_{sp} value for $\text{PbSO}_4 = 1.8 \times 10^{-8} \text{ mole}^2 \text{ dm}^{-6}$. The maximum concentration of Pb^{2+} ions is	A. $1.34 \times 10^{-4} \text{ mole dm}^{-3}$ B. 1.8×10^{-4} C. $3.6 \times 10^{-16} \text{ mole dm}^{-3}$ D. $1.0 \times 10^{-8} \text{ mole dm}^{-3}$