

## ECAT Chemistry Chapter 8 Chemical Equilibrium

Sr	Questions	Answers Choice
1	In a reversible reaction, two substances are in equilibrium. If the concentration of each one is reduced to half, the equilibrium constant will be	<p>A. Reduced to half of its original value</p> <p>B. Doubled</p> <p>C. Same</p> <p>D. Reduced to one fourth its original value</p>
2	pH of water is 7, if 0.01 M NaOH is added, than its pH is	<p>A. 12</p> <p>B. 14</p> <p>C. zero</p> <p>D. 10</p>
3	Which of the following is a characteristic of a reversible reaction?	<p>A. It never proceeds to completion</p> <p>B. It can be influenced by a catalyst</p> <p>C. It proceeds only in the forward direction</p> <p>D. Number of moles of reactants and products are equal</p>
4	Question Image	<p>A. Decrease in temperature favour more dissolution of the salt</p> <p>B. Increase in temperature favour more dissolution of the salt</p> <p>C. Lowering pressure favour more dissolution of the salt</p> <p>D. Increasing pressure favour more dissolution of the salt</p>
5	Under what condition of temperature and pressure the formation of atomic hydrogen from molecular hydrogen will be favoured	<p>A. High temperature and high pressure</p> <p>B. Low temperature and low pressure</p> <p>C. High temperature and low pressure</p> <p>D. Low temperature and high pressure</p>
6	Which of the following favours the reverse reaction in chemical equilibrium?	<p>A. Increasing the concentration of the reactant</p> <p>B. Removal of the least one of the products at regular intervals</p> <p>C. Increasing the concentration of one or more of the products</p> <p>D. None of these</p>
7	A solution of NaOH has pH = 13, then concentration of NaOH is	<p>A. <math>10^{-13}</math> M</p> <p>B. <math>10^{13}</math> M</p> <p>C. <math>10^{-1}</math> M</p> <p>D. <math>10^{+1}</math> M</p>
8	Question Image	<p>A. 450°C</p> <p>B. 250°C</p> <p>C. 850°C</p> <p>D. 1000°C</p>
9	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>
10	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?	<p>A. <math>\text{Ag}^{+}</math> and <math>\text{NO}_3^{-}</math> only</p> <p>B. <math>\text{Ag}^{+}</math> and <math>\text{Ba}^{2+}</math> and <math>\text{NO}_3^{-}</math></p> <p>C. <math>\text{Ba}^{2+}</math> and <math>\text{NO}_3^{-}</math></p> <p>D. <math>\text{Ba}^{2+}</math> and <math>\text{NO}_3^{-}</math> and <math>\text{Cl}^{-}</math></p>
		<p>A. <math>2.0 \times 10^{-10}</math> mole</p>

11	The solubility product of AgCl is $2.0 \times 10^{-10} \text{ mole}^2 \text{ dm}^{-6}$ . The maximum concentration of $\text{Ag}^+$ ions in the solution is	<p>A. <math>1.41 \times 10^{-5} \text{ mole dm}^{-3}</math></p> <p>B. <math>1.41 \times 10^{-5} \text{ mole dm}^{-3}</math></p> <p>C. <math>1.0 \times 10^{-10} \text{ mole dm}^{-3}</math></p> <p>D. <math>4.0 \times 10^{-20} \text{ mole dm}^{-3}</math></p>
12	Question Image	<p>A. Forward reaction is favoured</p> <p>B. Backward reaction is favoured</p> <p>C. No effect</p> <p>D. None of the above</p>
13	Question Image	<p>A. Equal volumes of <math>\text{N}_2</math> and <math>\text{H}_2</math> are reacting</p> <p>B. Equal masses of <math>\text{N}_2</math> and <math>\text{H}_2</math> are reacting</p> <p>C. The reaction has stopped</p> <p>D. The same amount of ammonia is formed as is decomposed into <math>\text{N}_2</math> and <math>\text{H}_2</math></p>
14	A chemical reaction is in equilibrium when	<p>A. Formation of product is minimum</p> <p>B. Reactants are completely transformed into products</p> <p>C. Rates of forward and backward reactions are equal</p> <p>D. Equal amounts of reactants and products are present</p>
15	1.1 mol of A is mixed with 2.2 mol of B and the mixture is kept in on litre flask till the equilibrium is reached. At equilibrium, 0.2 mol of C is formed. If the equilibrium reaction is $\text{A} + 2\text{B} \rightleftharpoons 2\text{C} + \text{D}$ , the value of equilibrium constant is	<p>A. 0.002</p> <p>B. 0.004</p> <p>C. 0.001</p> <p>D. 0.003</p>
16	pKb value of $\text{NH}_4\text{OH}$ is 4.74. If the concentration of $\text{NH}_4\text{OH}$ is 1 molar containing 0.1 molar $\text{NH}_4\text{Cl}$ , then pH of this buffer will be	<p>A. 3.74</p> <p>B. 10.26</p> <p>C. 4.74</p> <p>D. 9.26</p>
17	Which statement about the following equilibrium in correct? $2\text{SO}_2(\text{g}) + \text{O}_2(\text{g}) \rightleftharpoons 2\text{SO}_3(\text{g}) \quad H = -188.3 \text{ KJ mol}^{-1}$	<p>A. T value of <math>K_p</math> falls witha rise in temperate.</p> <p>B. The value of <math>K_p</math> falls with increasing pressure</p> <p>C. Adding <math>\text{V}_2\text{O}_5</math> catalyst increase the equilibrium yield of sulfur trioxide</p> <p>D. The value of <math>K_p</math> is equal to <math>K_p</math></p> <p>E. <math>K_p</math> is equal to <math>K_p</math></p>
18	Question Image	<p>A. High temperature and low pressure</p> <p>B. Low temperature and low pressure</p> <p>C. Low temperature and high pressure</p> <p>D. High temperature and high pressure</p>
19	Question Image	<p>A. Introduction of an inert gas at constant volume</p> <p>B. Introduction of <math>\text{PCl}_3(\text{g})</math> at constant</p> <p>C. Introduction of <math>\text{PCl}_5(\text{g})</math> at constant volume</p> <p>D. Introduction of <math>\text{Cl}_2</math> at constant volume</p>
20	A gas bulb is filled with $\text{NO}_2$ gas and immersed in an ice bath at $0^\circ\text{C}$ which becomes colourless after sometimes. This colourless gas will be	<p>A. <math>\text{NO}_2</math></p> <p>B. <math>\text{N}_2\text{O}</math></p> <p>C. <math>\text{N}_2\text{O}_4</math></p> <p>D. <math>\text{N}_2\text{O}</math></p>