ECAT Chemistry Chapter 8 Chemical Equilibrium

Sr	Questions	Answers Choice
1	$K_b$value of NH_4OH is 1.81 x $10^{-5}$and its conjugate acid has K_a= 5.7 x 10^{-10}pKb of the base is 4.74, pKa of its conjugate acid is	A. -4.74 B. 4.74 C. 10 D. 9.26
2	strength of an acid can be determined by	A. P^{ka} B. P^{kp} C. P^{oH} D. P^{kw}
3	Question Image	
4	Whenever a week base is dissolved in water, it give its conjugate acid. similarly a weak acid in water produces its conjugate base. This conjugate acid-base pair concept is stated by	A. Law of mass action B. Le-charlier's principle C. Common ion effect D. Lowery Bronsted concept
5	Question Image	A. 1 B. 10 C. 5 D. 0.33
6	Question Image	A. Reaction occurs at STP B. Reaction is exothermic C. Reaction is endothermic D. Number of moles of production and reactant are same
7	Question Image	A. Forward B. Backward C. Already in equilibrium D. K_cis never less
8	Question Image	A. HF is stable and does not decompose even at 2000°C B. HF is stable and slowly decomposes at 2000°C C. HF is strong acid D. HF produces equal moles of hydrogen and fluorine
9	Two moles of HI was heated in a sealed tube at 440°C till the equilibrium was reached. HI was found to be 22% decomposed. The equilibrium constant for dissociation is	A. 0.282 B. 0.0796 C. 0.0199 D. 1.99
10	A solution has pH = 0, its H^+ion concentration is	A. 1 x 10⁻¹⁴ B. 1 x 10¹⁴ C. 1 x 10¹ D. 1
11	$N_2 + O_2 \rightleftharpoons 2NO$ The unit of K_c for tis reaction will be:	A. <o:p></o:p> No unit<o:p></o:p> B. <o:p></o:p> <span style="font-size: 10.5pt; line-height: 107%; font-family: Arial, sans-serif; background-image: initial; background-position: initial; background-size: initial; background-repeat: initial; background-attachment: initial; background-origin: initial; background-clip: initial;">mol⁻² dm⁻³<o:p></o:p> C. <o:p></o:p> <span style="font-size: 10.5pt; line-height: 107%; font-family: Arial, sans-serif; background-image: initial; background-position: initial; background-size: initial; background-repeat: initial; background-attachment:

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12	For the above reaction the relationship b/w k_c and k_p will be :	A. K_p = K_cRT<o:p></o:p> B. Kp = K_c(RT)₋₁ <o:p></o:p> C. K_p = K_c(RT)₋₂ <o:p></o:p> D. K_c = K_p<o:p></o:p>
13	Buffers having pH less than 7 are made	A. Mixture of weak acid + salt of it with strong base B. Mixture of weak acid + salt of it with weak base C. Mixture of weak base + salt of it with strong acid D. Mixture of weak base + salt of it with weak base
14	In which of the following cases, the reaction goes farthest to completion	A. K = 10³ B. K = 10⁻² C. K = 10 D. K = 10⁰
15	Under what condition of temperature and pressure the formation of atomic hydrogen from molecular hydrogen will be favourd	A. High temperature and high pressure B. Low temperature and low pressure C. High temperature and low pressure D. :Low temperature and high pressure
16	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.
17	Le-chatlier's principle is applied on the reversible reaction in order to	A. Determine the rate of reaction B. Predict the direction of reaction C. Determine the extent of reaction D. Find best conditions for favorable shifting the position of equilibrium
18	$H_2 + L_2$ ----2HI In the above equilibrium system, if the concentration of reactants at 25°C is increased, the value K_C will :	A. Remains Constant B. Increases C. Cecreases D. Depends upon nature of reactans
19	Chemical equilibrium involving reactants and products in more than one phase is called	A. Static B. Dynamic C. Homogeneous D. Heterogeneous
20	The pH of 10^{-3}mole $dm^{-3}$of an aqueous solution of $H_2SO_4$is	A. 3.0 B. 2.7 C. 2.0 D. 1.5