ECAT Chemistry Chapter 8 Chemical Equilibrium Online Test

Sr	Questions	Answers Choice
1	Which of the following in an example of reversible reaction	
2	Question Image	A. At equilibrium there is no further change in the concentration of HI B. At equilibrium concentration of I₂remains constant C. At equilibrium concentration of H₂remains unaltered D. At equilibrium the rate of formation of HI is equal to the rate of decomposition of HI
3	The rate of which the reaction proceeds is directly proportional to the product of the active masses of the reactants is according to	A. Law of mass action B. Le Chateliers principle C. Equilibrium law D. Law of constant proportion
4	Question Image	
5	Question Image	
6	When rate of forward reaction is equal to rate of backward reaction, then the equilibrium established is called	A. Chemical equilibrium B. Static equilibrium C. Dynamic equilibrium D. None of these
7	Question Image	A. Reversible reaction B. Irreversible reaction C. Spontaneous reaction D. None of these
8	The rate at which a substance reacts is directly proportional to its active mass and the rate of reaction is directly proportional to the product of the active masses of reacting substances, is called	A. Law of conservation of energy B. Le-Chateliers principle C. Law of mass action D. None of these
9	Reactions that proceed on both sides and never go to completion are called	A. Irreversible reactions B. Reversible reactions C. Opposing reactions D. Spontaneous reactions
10	Chemical equilibrium involving reactants and products in more than one phase is called	A. Static B. Dynamic C. Homogeneous D. Heterogeneous
11	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
12	For which system does the equilibrium constant. K_c has units of	
13	Question Image	A. The value of K_pfalls with a rise in temperature B. The value of K_pfalls with increasing pressure C. Adding V₂O₅catalyst increase the equilibrium yield of sulphur trioxide equilibrium yield of sulphur trioxide D. The value of K_pis equal to K_c
14	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
15	The solubility product of AgCl is $2.0 \times 10^{-10} mol^2 dm^{-6}$The maximum concentration of Ag^+ions in the solution is	A. 2.0 x 10⁻¹⁰mol dm⁻³ B. 1.41 x 10⁻⁵mol dm⁻³ C. 1.0 x 10⁻¹⁰mol dm⁻³ D. 4.0 x 10⁻²⁰mol dm⁻³
	Hydrogen gas and iodine vapours combine to form HI at 425°C, the same	A. A static equilibrium

16	composition of mixture is present if we start with decomposition of HI. It suggests	B. Law of mass action C. A dynamic equlibrium D. Irreversible reaction
17	Question Image	A. Moles⁻²dm⁺⁶ B. No units C. Mole dm⁻³ D. Mole⁻¹dm⁻³
18	Which one of the following has no units of its $K_c$value	
19	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	A. Mass in grams converted to products B. Number of moles C. Number of moles per dm³of reactants D. Total pressures of the reactants
20	Question Image	A. Initial concentration of acetic acid B. Initial concentration of ethyl acetate C. Equilibrium concentration of acetic acid D. Equilibrium concentration of ethyl acetate
21	An excess of aqueous silver nitrate is added to aqueous barium chloride and precipitate is removed by filtration. What are the main ions in the filtrate	
22	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
23	Question Image	A. Moles per dm³ B. Partial pressures C. Number of moles D. Mole fractions
24	Question Image	
25	The value of $K_p$is greater than $K_c$for a gaseous reaction when	A. Number of molecules of products is greater than the reactants B. Number of molecules of reactants is greater than those of products C. Number of molecules of reactants and products equal D. Catalyst is added
26	Question Image	A. The value of K_pfalls with rise in temperature B. The value of K_pfalls with increasing pressure C. Addition of V₂O₅catalyst increase the concentration of SO₃ D. The value of K_pis equal to K_c
27	Question Image	A. KC = KP B. Kp = KcRT C. Kp = kc(RT)⁻² D. Kp = Kc(RT)⁻¹
28	Question Image	A. Temperature is increased B. Pressure is increased C. HCl is added D. HCl is removed
29	Question Image	A. Le-chatlier's principle B. Only adding catalyst C. Decreasing pressure D. Decreasing temperature
30	Question Image	A. 4 mole per dm³ B. 2 mole per dm³ C. 0.33 mole per dm³ D. 0.67 mole per dm³
31	Question Image	A. Forward B. Backward C. Already in equilibrium D. K_cis never less
32	The optimum conditions of temperature and pressure to get maximum NH_3form $N_2$and H_2gases is	A. 2000°C and 10 atmosphere B. 0°C and 1 atmosphere C. 400°C and 200-300 atmosphere D. 200°C and 100 atmosphere
33	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
34	Question Image	A. Shift reaction toward forward direction B. Shift reaction backward C. Lower the value of K_c D. No change in reaction
35	Question Image	A. Shift reaction toward forward direction B. Shift reaction backward C. Lower the value of K_c D. No change in reaction
36	Question Image	A. Decrease in temperature favour more dissolution of the salt B. Increase in temperature favour more dissolution of the salt C. Lowering pressure favour more dissolution of the salt D. Increasing pressure favour more dissolution of the salt
37	For which system does the equilibrium constant, KC has units of concentration	
38	Question Image	A. 450°C B. 250°C C. 850°C D. 1000°C
39	The ionic product of H^+ ions and OH^- in water is called ionization constant of water Kw. The value of Kw at 25°C is	A. 0.11 x 10⁻¹⁴ B. 0.30 x 10⁻¹⁴ C. 1.0 x 10⁻¹⁴ D. 3 x 10⁻¹⁴
40	An aqueous solution is neutral when its	A. pH = 14 B. pH = zero C. pH = 7 D. Kw = 10⁻⁷
41	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
42	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
43	A solution of NaOH has pH = 13, then concentration of NaOH is	A. 10⁻¹³M B. 10¹³M C. 10⁻¹M D. 10⁺¹M
44	Acetic acid is 1.33% ionized, In 1000 molecules of 0.1 M acetic acid the number of H^+ ions is	A. 1.33 B. 13.3 C. 1.33 D. 1
45	In 1000 molecules of 0.001 M acetic acid the number of H^+ ions is 12.6, then its percentage of ionization is	A. 1.33% B. 1.26% C. 12.6 D. 1%
46	K_a value of HF acid is 6.7 x 10^{-15} the acid is a	A. Weak acid B. Moderately strong acid C. Strong acid D. Very weak acid
47	When a weak acid is dissolved in water or a weak base dissolved in water, then in both cases the conjugate acid base pair is produced. The ionization constants K_a and K_b of a pair are related with each other as	A. K_a= K_b B. K_a. K_b= K_w C. K_a. K_w= K_b D. K_b. K_w= K_a
48	On passing HCl gas through a saturated solution of commercial sodium chloride, pure crystals of NaCl are precipitated due to	A. Increase in pH of the solution B. Decrease in pH of the solution C. Common ion effect D. Increase in ionization of NaCl
49	K_b for NH_4OH is 1.81 x 10^{-5}, then K_a value of its conjugate base is	A. 1.81 x 10⁺⁵ B. 1.81 x 10⁻⁹ C. 5.5 x 10⁻⁹ D. 5.5 x 10⁻¹⁰
50	The solubility of $KClO_3$ salt in water is decreased by adding	A. NaClO₃ B. NaCl C. KClO₄ D. KCl

51	Which of the following solution have zero pH	A. 1 M HCl B. MH₂SO₄ C. 0.1 M HNO₃ D. 1 M CH₃COOH
52	Units of Kw are	A. Mole dm⁻³ B. Mole²dm⁻³ C. Mole²dm⁻⁶ D. Mole²dm⁻³
53	0.1 MHCl has pH = 1.0, it is about 100 times stronger than acetic acid. Then pH of acetic acid will be	A. 0.1 B. 2.0 C. 1.3 D. 3.0
54	If the difference of pKa values of the two acids is 2, then	A. Acid with smaller pKa is 10 times stronger acid B. Acid with greater pKa is 10 times stronger acid C. Acid with smaller pKa is 100 times stronger acid D. Acid with greater pKa is 100 times stronger acid
55	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
56	Base buffer solution can be prepared by mixing	A. Weak acid and its salt B. Strong acid and its salt with weak base C. Weak base and its salt with strong acid D. Strong base and its salt with weak acid
57	Which one of the following is a buffer	A. HCl + NaCl solution B. CH₃COOH + CH₃COONH₄solution C. H₂SO₄+ CaSO₄solution D. CH₃COOH + CH₃COONa
58	Which one of the following is not a buffer	A. H₂CO₃+ NaHCO₃solution B. H₃PO₄+ NaH₂PO₄solution C. HI + NaI solution D. NH₄OH + NH₄Cl solution
59	A solution having pH = 4 its OH^-ion concentration in mole $dm^{-3}$is	A. 1.0 x 10⁻⁴ B. 1.0 x 10⁻¹⁰ C. 1.0 x 10⁻¹⁴ D. 1 x 10⁰
60	The ionization constant of an acid is expressed in term of the following constant	A. Kw B. Kn C. Ka D. Kb
61	Addition of solid $NaHCO_3$in water causes ionization of $NaCHO_3$its K_a= 4.7 x 10^{-1}. Then this solution has character	A. Acidic B. Very weakly basic C. Alkaline D. Neutral
62	strength of an acid can be determined by	A. P^{ka} B. P^{kp} C. P^{oH} D. P^{kw}
63	$K_b$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
64	pH and pKa of the buffer are related by Henderson equation which is	
65	The best buffer is prepared when molar concentrations of the salt and acid are equal, then its pH and pKa value are related	A. pH = pKa B. pH < pKa C. pH > pKa D. pH x pKa = 14
66	ph of the buffer CH_3COOh + CH_3COONa is 3.76. If the mixture contains 1 molar acetic acid and 0.1 molar sodium acetate, then pKa of this buffer is	A. 3.76 B. 4.76 C. 5.76 D. 6.76
67	pKb value of NH_4OH is 4.74. If the concentration of NH_4OH is 1 molar containing 0.1 molar NH_4Cl, then pH of this buffer will be	A. 3.74 B. 10.26 C. 4.74 D. 9.26
68	[illegible]	A. 7 B. zero

68	pH of 1 molar NaOH is	[illegible] C. 14 D. 10
69	pH of water is 7, if 0.01 M NaOH is added, than its pH is	A. 12 B. 14 C. zero D. 10
70	A buffer of a 0.09 molar acetic acid and 0.11 molar sodium acetate has pH = 4.83. If 0.01 mole NaOH in 1 $dm^3$of the buffer solution is added, then pH of the buffer becomes	A. 4.74 B. 4.92 C. 5.0 D. 4.0
71	pH of 0.1 molar HCl solution is	A. 1 B. zero C. 13 D. 14
72	If pH of buffer of 1 mole $dm^{-3}$of HCOOH + 0.1 mole dm^{-3}HCOONa having pKa = 3.78 is	A. 1.78 B. 2.78 C. 3.78 D. 4.78
73	A buffer solution of 0.1 molar HCOOH and 0.1 molar HCCONa has pH = 3.78 To is 0.01 molar HCl is added, then pH of the buffer solution becomes	A. 2.78 B. 4.78 C. 3.78 D. 3.70
74	pH of the human blood which is essentially maintained constant due to carbonates, biocarbonates, phosphates etc., is	A. 7.00 B. 7.25 C. 7.35 D. 7.47
75	The relation between Kc and Kp is	
76	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
77	Product of concentration of ions raised to the power equal to the co-efficient of ions in balanced equation for saturated solution of a salt is called	A. Ionic product B. Equilibrium constant K_c C. K_w D. Solubility product (K_{sp})
78	The solubility product of AgCl is 2.0×10^{-10}mole ^{2}dm^{-6}. The maximum concentration of Ag^+ions in the solution is	A. 2.0 x 10⁻¹⁰mole dm⁻³ B. 1.41 x 10⁻⁵mole dm⁻³ C. 1.0 x 10⁻¹⁰ D. 4.0 x 10⁻²⁰mole dm⁻³
79	K_{sp}value for $PbSO_4$= 1.8×10^{-8}mole^{2}dm^{-6}. The maximum concentration of Pb^{++}ions is	A. 1.34 x 10⁻⁴mole dm⁻³ B. 1.8 x 10⁻⁴ C. 3.6 x 10⁻¹⁶mole dm⁻³ D. 1.0 x 10⁻⁸mole dm⁻³
80	The solubility of $PbF_2$is 2.6×10^{-3}mole dm^{-3} then its solubility product is	A. 2.6 x 10⁻³ B. 6.76 x 10⁻⁶ C. 5.2 x 10⁻⁶ D. 7.0 x 10⁻⁸
81	The solubility product of $Ca(OH)_2$is 6.5×10^{-6}. The concentration of OH^-ions is	A. 1.175 x 10⁻² B. 2.35 x 10⁻² C. 3.25 x 10⁻³ D. 3.25 x 10⁻⁴
82	Question Image	A. Forward reaction is favoured B. Backward reaction is favoured C. No effect D. None of the above
83	Question Image	A. 0.60 B. 1.67 C. 0.66 D. 2.6
84	In a reversible chemical reaction having two reactants in equilibrium, if the concentration of the reactants are doubled then the equilibrium constant will	A. Also be doubled B. Be halved C. Becomes one fourth D. Remains the same
85	The equilibrium constant in a reversible chemical reaction at a given temperature	A. Depends on the initial concentration of the reactants B. Depends on the concentration of one of the products at equilibrium C. Does not depend on the initial concentration of rectants D. It is characteristic of the reaction

86	Question Image	A. Complete conversion of A to B has taken place B. Conversion of A to B is only 50% complete C. Only 10% conversion of A to B has taken place D. The rate of transformation of A to B is just equal to rate of transformation of B to A in the system
87	Question Image	A. [A] = [B] B. [A] < [B] C. [B] = [C] D. [A] > [B]
88	Question Image	A. Equal volumes of N₂and H₂are reacting B. Equal masses of N₂and H₂are reacting C. The reaction has stopped D. The same amount of ammonia is formed as is decomposed into N₂and H₂
89	According to Le-Chatelier's principal, adding heat to a solid and liquid in equilibrium will cause the	A. Amount of solid to decrease B. Amount of liquid to decrease C. Temperature to rise D. Temperature to fall
90	Question Image	A. Favour the formation of N₂O₄ B. Favour the decomposition of N₂O₄ C. Not alter the equilibrium D. Stop the reaction
91	Which of the following factors will favour the reverse reaction in a chemical equilibrium?	A. Increase in concentration of one of the reactants B. Increase in concentration of one of the products C. Removal of one of the products regularly D. None of these
92	The avtive mass of 64 g of HI in a two litre flask would be	A. 2 B. 1 C. 5 D. 0.25
93	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
94	The state of equilibrium refers to	A. State of rest B. Dynamic state C. Stationary state D. State of inertness
95	Question Image	A. 0.02 B. 0.2 C. 50 D. 25
96	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
97	In an exothermic reaction, a 10° rise in temperature will	A. Decrease the value of equilibrium constant B. Double the value of K_c C. Not produce any change in K_c D. Produce some increase in K_c
98	Question Image	A. Total pressure B. Amount of A₂and B₂ C. Temperature D. Catalyst
99	At certain temperature, 50% of HI is dissociated into $H_2$and $I_2$the equilibrium constant is	A. 1.0 B. 3.0 C. 0.5 D. 0.25
100	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 A+2B 2C+D, the value of equilibrium constant is	A. 0.002 B. 0.004 C. 0.001 D. 0.003
101	Question Image	A. High temperature and low pressure B. Low temperature and high pressure C. Low temperature and low pressure D. High temperature and high pressure
102	Question Image	A. 32 B. 64 C. 16

		C. 16 D. 4
103	Question Image	A. 0.073 B. 0.147 C. 0.05 D. 0.026
104	In a reversible reaction, two substances are in equilibrium. If the concentration of each one is reduced to half, the equilibrium constant will be	A. Reduced to half of its original value B. Doubled C. Same D. Reduced to one fourth its original value
105	The concentration of reactants is increased by x, then equilibrium constant K becomes	A. ln K/x B. K/x C. K + x D. K
106	Question Image	A. 8 B. 4 C. 9 D. 3
107	Question Image	A. Introduction of an inert gas at constant volume B. Introduction of PCl₃(g) at constant C. Introduction of PCl₅(g) at constant volume D. Introduction of Cl₂at constant volume
108	Question Image	A. 1 B. 10 C. 5 D. 0.33
109	Question Image	A. Low pressure B. High pressure C. High temperature D. High concentration of SO₂
110	Question Image	A. Increases B. Decreases C. Remains same D. Cannot be predicted
111	Question Image	A. 0.12 B. 0.50 C. 0.25 D. 4.00
112	Question Image	A. Pressure change B. Temperature change C. Concentration change D. Catalyst
113	Question Image	A. K_p> K_c B. K_c> K_p C. K_p= K_c D. None of these
114	A gas bulb is filled with NO_2gas and immersed in an ice bath at 0°C which becomes colourless after sometimes. This colourless gas will be	A. NO₂ B. N₂O C. N₂O₄ D. N₂O₅
115	When $H_2$and $I_2$are mixed and equilibrium is attained, then	A. Amount of HI formed is equal to the amount of H₂dissociated B. HI dissociation stops C. The reaction stops completely D. None of these
116	Which of the following favours the reverse reaction in chemical equilibrium?	A. Increasing the concentration of the reactant B. Removal of the least one of the products at regular intervals C. Increasing the concentration of one or more of the products D. None of these
117	1 mole of $N_2$and 2 moles of $H_2$are allowed to react in a 1 dm^3vessel. At equilibrium 0.8 mole of $NH_3$is formed. The concentration of H_2in the vessel is	A. 0.6 mole B. 0.8 mole C. 0.2 mole D. 0.4 mole
118	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
		A. Formation of product is minimum B. Reactants are completely transformed into

119	A chemical reaction is in equilibrium when	products C. Rates of forward and backward reactions are equal D. Equal amounts of reactants and products are present
120	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
121	Question Image	A. High temperature and low pressure B. Low temperature and low pressure C. Low temperature and high pressure D. High temperature and high pressure
122	Question Image	A. High temperature B. Low temperature C. Low pressure D. High pressure
123	In a lime kiln, to get higher yield of CO_2, the measure that can be taken is	A. To main high temperature B. To pump out CO₂ C. To remove Cao D. To add more CaCO₃
124	When the rate of formation of reactants is equal to the rate of formation of products, this is known as	A. Chemical reaction B. Chemical equilibrium C. Chemical kinetics D. None
125	Which of the following is a characteristic of a reversible reaction?	A. It never proceeds to completion B. It can be influenced by a catalyst C. It proceeds only in the forward direction D. Number of moles of reactants and products are equal
126	Question Image	A. Increase in concentration of 1 B. Decrease in concentration of I₂ C. Increase in temperature D. Increase in total pressure
127	Ammonium carbonate when heated to 200°C gives a mixture of $NH_3$and CO_2vapour with a density of 13.0. What is the degree of dissociation of ammonia carbonate?	A. 3/2 B. 1/2 C. 2 D. 1
128	Question Image	A. 0.5 B. 4.0 C. 2.5 D. 0.25
129	For which system does the equilibrium constant, kc has units of (concentration) ?	A. <p class="MsoNormal">N₂+3H₂₋₋-----2NH₃<o:p></o:p></p> B. <p class="MsoNormal">H₂+L₂---------2HL<o:p></o:p></p> C. <p class="MsoNormal">2NO₂----------N₂O₄<o:p></o:p></p> D. <p class="MsoNormal">2HF--------H2+F₂<o:p></o:p></p>
130	Which statement about the following equilibrium in correct? $2SO_{2\,(g)}$+ $O_{2(g)}$--------------$2sO_{3(g)}$H= - 188.3 KJ mol-1	A. T value of K_{p falls witha rise in temperate.} B. The value of K_{p falls withincreasing pressure}<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}K_p E. <p class="MsoNormal"><o:p></o:p></p><p class="MsoNormal"><o:p></o:p></p>
131	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. <p class="MsoNormal"><span style="font-size:

132	The solubility product of AgCl is 2.0 x 10^{-3} mol^2 dm^{-6} , The maximum concentration of Ag ion in the solution is :	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;"><o:p></o:p></p> <p class="MsoNormal">2.0 x 10⁻¹⁰ mol dm⁻³<o:p></o:p></p> B. <p class="MsoNormal">1.41 x 10⁻¹⁰ mol dm^{-3<o:p></o:p>}</p> C. <p class="MsoNormal">1.0^{ }x 10⁻¹⁰ mol dm^{-3<o:p></o:p>}</p> D. <p class="MsoNormal">4.0^{ }x 10⁻¹⁰ mol dm⁻³<o:p></o:p></p>
133	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. <p class="MsoNormal">Ag⁺ and NO₃₋ only<o:p></o:p></p> B. <p class="MsoNormal">Ag⁺ and Ba² and NO⁻³<o:p></o:p></p> C. <p class="MsoNormal">Ba² and NO⁻³<o:p></o:p></p> D. <p class="MsoNormal">Ba² and NO⁻³and Cl-<o:p></o:p></p>
134	A reaction is reversible because :	A. Products are stable. B. Reactants are reactive. C. Products are reactive. D. Reactants re stable.
135	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.
136	The rate of a chemical reaction is directly;y proportional to product of molar concentration of reaction substance it is called :	A. Low of conservation of energy. B. Law of mass action. C. Rate law . D. Active mass rule.
137	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.
138	The rate of reaction :	A. Remain same as reaction proceeds. B. May decrease or increase as reaction proceeds . C. Increase as reaction proceeds. D. Decreases as reaction proceeds.
139	Law of mass action was given by :	A. Guldberg and Waage. B. Berkeley and Hartly. C. Ramsay and Reyleigh. D. Berthelot.

140 I a chemical reaction equilibrium is said to have been established when :

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

141 $H_2 + L_2$ ----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

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

A. <p class="MsoNormal">K_p = K_cRT<o:p></o:p></p>
B. <p class="MsoNormal">Kp = K_c(RT) ₋₁<o:p></o:p></p>
C. <p class="MsoNormal">K_p = K_c(RT)₋₂<o:p></o:p></p>
D. <p class="MsoNormal">K_c = K_p<o:p></o:p></p>

143 The correct relation b/wK_{c} and K_{p} is :

A. <p class="MsoNormal">K_p = K_c[P/N] ^{Δn<o:p></o:p>}</p>
B. <p class="MsoNormal">K_{c =}K_p(RT) ^{Δn}<o:p></o:p></p>
C. <p class="MsoNormal">K_{p =}K_c(RT) ^{Δn}<o:p></o:p></p>
D. <p class="MsoNormal">K_{p =}K_c(RT) ^{Δn}<o:p></o:p></p>

144 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:

A. <p class="MsoNormal">2x/(1-x)^{2<o:p></o:p>}</p>
B. <p class="MsoNormal">4x²/(1-x)<o:p></o:p></p>
C. <p class="MsoNormal">4x/(1-x)<o:p></o:p></p>
D. <p class="MsoNormal">2x/(1-x)<o:p></o:p></p>

145 $N_2 + O_2 \rightleftharpoons 2NO$

The unit of K_c for tis reaction will be:

A. <p class="MsoNormal"><o:p></o:p></p> <p class="MsoNormal">No unit<o:p></o:p></p>
B. <p class="MsoNormal"><o:p></o:p></p> <p class="MsoNormal">mol⁻² dm⁻³<o:p></o:p></p>
C. <p class="MsoNormal"><o:p></o:p></p> <p class="MsoNormal">mol⁻¹ dm⁻³<o:p></o:p></p>
D. <p class="MsoNormal"><o:p></o:p></p> <p class="MsoNormal">mol⁻² dm⁺³<o:p></o:p></p>

146 $N_2 + 3H_2 \rightleftharpoons 2NH_3$

The unit of K_c for tis reaction will be:

A. <p class="MsoNormal">mol² dm⁻⁶<o:p></o:p></p>
B. <p class="MsoNormal">mol⁻² dm⁺⁶<o:p></o:p></p>
C. <p class="MsoNormal">mol dm⁻³<o:p></o:p></p>
D. <p class="MsoNormal"><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⁻¹ dm⁺³<o:p></o:p></p>
147	For what value ofK_c almost forward reaction is complete :	A. <p class="MsoNormal">K_{c =}10³⁰<o:p></o:p></p> B. <p class="MsoNormal"><o:p></o:p></p> <p class="MsoNormal">K_{c =}10⁻³⁰<o:p></o:p></p> C. <p class="MsoNormal"><o:p></o:p></p> <p class="MsoNormal">K_{c =}0<o:p></o:p></p> D. <p class="MsoNormal">K_{c =}1<o:p></o:p></p>
148	In the particular reaction for the valueK_c 1 x10^{-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.
149	Almost forward reaction is complete when value of k_c :	A. Neither larger nor very small. B. Very small. C. Very large. D. Negligible.
150	If$k_c$of a reaction productis verylarge, 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.
151	$N_2O_4 \rightleftharpoons 2NO_2$ For the above reaction, which of the Following expression of K_c correct :	A. <p class="MsoNormal"><o:p></o:p></p> <p class="MsoNormal">Kc = [N₂O₄]/[NO₂] ²<o:p></o:p></p> B. <p class="MsoNormal">Kc = [N₂O₄]/ [NO₂] <o:p></o:p></p> C. <p class="MsoNormal">Kc = [N₂O] ²/[N₂O₄] <o:p></o:p></p> D. <p class="MsoNormal">Kc = [N₂O₄]/[N O₂] <o:p></o:p></p>
152	In exothermic reversible reaction increase in temperature shift the equilibrium to :	A. Remains unchanged. B. Product side. C. Reactant side. D. None of above.
153	A large value of $K_c$means that at equilibrium :	A. Less reactant and more products. B. Reactants and product in same amounts. C. More reactants and less products. D. None of above.
154	$2SO_2 + O_2 \rightleftharpoons 2SO_2$ H= 188KJ mole^{-1} Which statement about following equilibrium is correct :	A. The value ofK_pfalls with arise in temperature. B. The value ofK_pis equal tok_{c.} C. The value ofK_pfalls with the increase pressure. D. Adding V₂O₅ catalyst increase the equilibrium yield of Sulphur trioxide.<p class="MsoNormal"><o:p></o:p></p>
		A. <p class="MsoNormal"><span style="font-size:

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$2SO_2$+ $O_2$$\rightleftharpoons$$2SO_2$H= 188KJ mole^{-1}

Which statement about following equilibrium is correct :

A. <p class="MsoNormal">The value ofK_{p}falls with arise in temperature.<o:p></o:p></p>
B. <p class="MsoNormal">The value ofK_{p}is equal tok_{c.<o:p></o:p>}</p>
C. <p class="MsoNormal">The value ofK_{p}falls with the increase pressure.<o:p></o:p></p>
D. <p class="MsoNormal">Adding V_{2}O_{5}catalyst increase the equilibrium yield of Sulphur trioxide.<o:p></o:p></p>

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Extent to H_2 + L_2 → 2HI can be increased by :

A. <p class="MsoNormal">Increasing temperature. <o:p></o:p></p>
B. <p class="MsoNormal">Increasing product. <o:p></o:p></p>
C. <p class="MsoNormal">Increasing pressure. <o:p></o:p></p>
D. <p class="MsoNormal">Adding a catalyst.<o:p></o:p></p>

157

$N_2 3H_2 \rightleftharpoons 2NH_3$

Which of the following change will favorthe formation of more NH_3at equilibrium in above reaction :

A. By adding NH_{3.}
B. By removingH_{2.}

C. By decreasing pressure.
D. By increasing pressure.

158

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.

159

$N_2 + 3H_2 \rightleftharpoons 2NH_3$ + Heat for above equation, themaximum 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.