Student Name_____ **Prof: Umair Ali Khan (www.umairkhanacademy.com) 03099164667**

1) Conjugate base of a strong acid is always.
a) Weak acid b) Weak base c) Strong acid d) Strong base

2) Conjugate acid of a strong base is always.
a) Strong base b) Strong acid c) Weak base d) Weak acid

3) % ionization of acid = ...
a) Amount of acid ionized/Amount of acid initially available x 100
b) Amount of acid ionized /Amount of buffer initially available x100
c) Amount of buffer ionized / Amount of acid ionized x100
d) All is irrelevant

4) Common ion decreases the solubility of.
a) Strong electrolyte b) Weak electrolyte
c) Normal electrolyte d) Moderate electrolyte

5) pH of human blood is.
a) 7.35 b) 7.00 c) 8.00 d) 8.35

6) The suppression of ionization of a weak electrolyte by adding a common ion from outside is.
a) Common ion impact b) Common ion effect
c) Common ion pressure d) Buffer solutions

7) Those species which donate protons are termed as.
a) Salts b) Acids c) Bases d) Neutral species

8) Those species which are proton acceptors are called as
a) Salts b) Acids
c) Bases d) Neutral species

9) Ka is termed as
a) Ionization constant of an acid b) Ionization constant of a base
c) Dissociation constant of an acid d) Only 'b' is irrelevant

10) If pH is less than 7 then solution is.
a) Basic in nature b) Acidic in nature c) Neutral in nature d) Salt in nature

11) A state of dynamic equilibrium helps to determine at equilibrium.
a) Composition of reacting substance b) Composition of products
c) Both 'a' & 'b' d) Rate of reaction

12) $2SO_2(g) + O_2\ g \rightleftharpoons 2SO_3(g)$ in this reaction if volume is increased then:
a) Kc is increased b) Kc is decreased c) Kc remains unaffected d) All

13) Most effective catalyst in preparation of SO_2 is... & finely divided platinum.
a) Iron b) Al_2O_3 c) V_2O_5 d) Nickel

14) Buffer solution with pH greater than 07 is:
a) Acidic Buffer b) Basic Buffer c) Neutral Buffer d) Normal Buffer

15) All of the following equilibrium are affected by an increase in pressure except
(a) $2SO_3 \rightleftharpoons 2SO_2 + O_2$ (b) $H_2 + I_2 \rightleftharpoons 2HI$
(c) $N_2 + 3H_2 \rightleftharpoons 2NH_3$ (d) $3Fe + 4H_2O \rightleftharpoons Fe_3O_4 + 4H_2$

16) Le-Chatelier principle is applied on reversible reactions in order to
(a) Predict extent of chemical reaction
(b) Determine rate of reaction
(c) Predict direction of reaction
(d) find best conditions for favorable reaction

17) Maximum quantity of SO_3 in industry is obtained using V_2O_5 catalyst at
(a) 550°C (b) 450°C (c) 650°C (d) 1000°C

18) Which is the ionization constant of weak acid?
(a) K_w (b) Kn (c) Ka (d) K_b

19) Which is not a buffer?
(a) CH_3COONa, CH_3COOH (b) H_3PO_4, NaH_2PO_4
(c) $NaHCO_3$, H_2CO_3 (d) H_2SO_4, $CuSO_4$

20) Unit of Kc for reaction $CH_3COOH + C_2H_5OH \rightleftharpoons CH_3COOC_2H_5 + H_2O$
(a) $mol^{-1}\ dm^{-3}$ (b) $mol\ dm^{-3}$ (c) $mol^{+2}\ dm^{+6}$ (d) No unit

21) When HCl gas is passed through saturated solution of NaCl, pure crystals of NaCl are precipitated out due to
(a) Decrease in pH of solution (b) Increase in pH of solution
(c) Common ion effect (d) Increase in dissociation of NaCl

22) The rate of reaction is directly proportional to the product of active masses of reactant is known as
(a) Rate law (b) Rate equation
(c) Law of mass action (d) Law of constant proportion

23) What happen when pressure is applied on Ice ⇌ water
(a) Ice formation will increase (b) More water will produce (c) Equilibrium will not disturb (d) water convert to vapors.

24) Which one is pH of an acid?
(a) 3 (b) 7 (c) 14 (d) 12

25) Which is more basic?
(a) 0.1 M NH_3 (b) pure water (c) bread (d) rain water

26) Ka of CH_3COOH at 25°C is
(a) 1.8×10^{-5} (b) 1.8×10^{-15} (c) 1.8×10^{-25} (d) 1.8×10^{-10}

27) Solubility of PbF_2 is $2.6 \times 10^{-3}\ mol\ dm^{-3}$, its Solubility product will be
(a) 7.0×10^{-8} (b) 8.0×10^{-7} (c) 6.2×10^{-8} (d) 7.8×10^{-8}

28) Which has highest Solubility?
(a) $Ca(OH)_2$ (b) $Fe(OH)_3$ (c) $Cr(OH)_3$ (d) $Al(OH)_3$

29) K_c is a constant that depends on
(a) Temperature (b) pressure (c) volume (d) All of above

30) The sum of pH and pOH is always
(a) zero (b) 14 (c) 8 (d) 7

31) What happens to already established equilibrium when more reactant is added.
(a) Remain unchanged (b) forward rate increase
(c) reverse rate increase (d) forward rate decrease

32) Larger the value of pKa
a) Weaker the Acid b) stronger the acid c) weaker the base d) none of these

33) The maximum yield of ammonia can be obtained by
a) decreasing temperature b) increasing pressure
c) decreasing pressure d) both a and b

34) If small amount of acid is added in water then.
a) $[H^+] > [OH^-]$ b) $[H^+] < [OH^-]$ c) $[H^+] = [OH^-]$ d) None of these

35) pH of vinegar is
a) 1.1 b) 2.8 c) 7.0 d) 13.0

36) When equilibrium constant (Kc) is small. It indicates
a) reaction is completed b) reaction is in forward direction
c) reaction is in backward direction d) all

37) The pH of 10^{-3} moles dm^{-3} of an aqueous solution of H_2SO_4 is:
a) 3 b) 2.7 c) 2 d) 1.5

38) The pH of 0.001 moles dm^{-3} of NaOH solution is:
a) 3 b) 10 c) 11 d) 13

39) Ka and Kb of conjugate acid and base are related with Kw as:
a) Ka+Kb = Kw b) Ka-Kb = Kw c) Ka x Kb = Kw d) Ka / Kb = Kw

40) If the concentration of the reactants in a reversible reaction is doubled, the value of Kc is:
a) doubled b) halved c) 1/4th of the original value d) not changed

41) The unit of ionic product Kw is:
a) $Mol^{-2}\ dm^6$ b) $Mol^2\ dm^{-3}$ c) $Mol^2\ dm^{-6}$ d) $Mol\ dm^{-3}$

42) Law of Mass action was proposed by:
a) C.M Guldberg b) P. Waage c) Both 'a' & 'b' d) Le-Chatelier

43) $Kc = x^2 / V(a-x)$ is suitable for following reaction:
a) Decomposition of N_2O_5 b) Synthesis of ammonia
c) Dissociation of PCl_5 d) Formation of ester

44) Since Kc = [Products] / [Reactants] & if ratio is less than Kc then reaction will proceed in:
a) Forward direction b) Backward direction
c) Both 'a' & 'b' d) None

45) If Kc = $[BiOCl][HCl]^2 / [BiCl_3][H_2O]$ then hydrolysis of BiOCl causes:
a) Reverse direction b) Forward direction c) Both 'a' & 'b' d) None

46) $2SO_{2\,(g)} + O_2$ g $\rightleftharpoons 2SO_{3\,(g)}$ in this reaction if volume is increased then:
a) Kc is increased b) Kc is decreased
c) Kc remains unaffected d) All

47) A reaction having $Kc = x^2 / V(a-x)$ then volume increase causes:
a) Forward reaction to occur b) Reverse reaction to occur
c) Reaction remains constant d) None

48) Catalyst increases rate of in a reversible reaction.
a) Forward reaction b) Reverse reaction c) Both 'a' & 'b' d) None

49) Process of ammonia synthesis was developed by... F. Haber.
a) German chemist b) American chemist
c) Italian chemist d) British chemist

50) Haber process synthesis approximately of ammonia in the world.
a) 100million ton b) 110million ton
c) 120million ton d) 110billion ton

51) Most effective catalyst in preparation of SO_2 is... & finely divided platinum.
a) Iron b) Al_2O_3 c) V_2O_5 d) Nickel

52) Ratio of concentrations of products to concentrations of reactants is called.
a) Solubility product b) Ionization constant c) Equilibrium constant
d) Multiple constant

53) Ammonia used as manufacture of fertilizers is.
a) 70% b) 80% c) 90% d) 60%

54) Yield of ammonia is favored at.
a) Low temperature b) High temperature c) High mole value d) Low pressure

55) Optimum catalyst for SO_3 synthesis is.
a) Pt b) Pb c) Al_2O_3 d) V_2O_5

56) During synthesis of SO_3, heat released is.
a) -190.0Kj/mol b) -194Ki/mol c) 190.4Kj/mol d) -196.0Kj/mol

57) Solubility of LiCl is decreased by.
a) Increasing pressure b) Decreasing pressure
c) Increasing temperature d) Decreasing temperature

58) Optimum industrial temperature for ammonia synthesis is.
a) 200celsius b) 400celsius c) 600celsius d) 800celsius

59) Kw is called as.
a) Ionic product of water
b) Ionic concentrations of water
c) Ionization product of water contents
d) Molecular product of water molecules

60) Yield of SO_3 is favored at.
a) Low temperature b) High temperature
c) High mole value d) Low pressure

61) At which temperature H_2O (water) is decomposed into H_2 and O_2
(a) 1500C° (b) 1550C° (c) 1600C° (d) 1650C°

62) The pH of sea water is:
(a) 7.8 (b) 8.5 (c) 9.6 (d) 10.3

63) Buffer capacity of a buffer depends upon the concentration of:
(a) Acid (b) Salt (c) Both a and b (d) None of them

64) The dissociation of a weak acid in water can be suppressed by:
(a) Strong base (b) Weak base (c) Weak acid (d) Strong acid

65) When acid is very strong, then value of Ka is:
(a) Zero (b) 1 (c) 10^{-3} (d) More than 1

66) When temperature is higher than 25C°, then sum of PH and POH is:
(a) 14 (b) More than 14 (c) Less than 14 (d) None of them

67) For pure water pH at 25C° is:
(a) Zero (b) 7 (c) 14 (d) None of them

68) Who introduced the terms PH and POH:
(a) Henderson (b) Sorenson (c) William Crooks (d) None

69) The solubility of Li_2CO_3 decrease with increase in Temp because:
(a) +ve heat (b) –ve heat (c) Zero heat (d) None

70) The ionization constant for Acetic acid is:
(a) 1.8×10^{-4} (b) 1.8×10^{-5} (c) 1.8×10^{-6} (d) 1.8×10^{-10}

71) The common in effect reduces the solubility of:
(a) Acid (b) Base (c) Salt (d) All of them

72) If value of Kc is very large, then products are:
(a) Small (b) Large (c) Normal amount (d) None of them

73) Which one is called King of chemicals:
(a) HNO_3 (b) HCl (c) H_2SO_4 (d) All

74) To increase formation of SO_3 Temperature should be:
(a) Low (b) Hight (c) Normal (d) All

75) Molar concentration is called:
(a) Mass (b) Density (c) Active mass (d) None

76) Ratio of concentrations of products to concentrations of reactants is called
a) Solubility product b) Ionization constant c) Equilibrium constant d) Multiple constant

77) Which of the following pairs could not be used for preparing a buffer solution?
a) $CH_3COOH + CH_3COONa$ b) $H_3PO_4 + NaH_2PO_4$ c) $CaCl_2 + Ca(OH)_2$ d) $NaH_2PO_4 + NaOH$

78) Very small value of Kc for a reaction at equilibrium indicates
a) Very small amount of reactants
b) Very small amount of products
c) rate of backward reaction is greater than that of forward one
d) rate of forward reaction is greater than that of backward one

79) Which of the following buffer is present in our blood plasma?
a) Acetic acid + Sodium acetate b) Carbonic acid + Bicarbonates
c) Boric acid + Borax d) Phthalic acid + Potassium acid phthalate

80) A solution X of pH = 2 has higher acidity than a solution Y pH = 6, the ratio of H^+ of solution X to that of solution Y is
a) 10 b) 10000 c) 1000 d) 100000

81) The conjugate acid of NH_2^- is
a) NH_3 b) NH^+ c) NH OH d) N H

82) The pH of an aqueous solution is 1.0 M of a weak monoprotic acid which is 1% ionized is
a) 0 b) 2 c) 1 d) 11

83) The pH of 0.1 M solution of the following salts present in the order
a) $NaCl < NH_4Cl < NaCN < HCl$ b) $NaCN < NH_4Cl < NaCl < HCl$
c) $HCl < NH_4Cl < NaCl < NaCN$ d) $HCl < NaCl < NaCN < NH_4Cl$

84) Solubility product of $PbCl_2$ at 298 K is 10^{-6}. At this temperature solubility of $PbCl_2$ in mol/L is
a) $(10^{-6})^{1/2}$ b) $(0.25 \times 10^{-6})^{1/3}$ c) $(10^{-6})^{1/3}$ d) $(0.25 \times 10^{-6})^{1/2}$

85) For reaction, $H_2 + I_2 \rightleftharpoons 2HI$, the equilibrium constant p Changes with
a) Total pressure b) catalyst
c) The amount of, H_2 and I_2 present d) Temperature

86) In a reversible reaction at equilibrium, the concentration of reactants is
a) Always equal to that of products b) Always smaller than that of products
c) Always greater than that of products d) None of these

87) Which of the following is not true?
a) $Kp = Kc/(RT)\Delta n$ b) $Kc = Kp(p)\Delta n$ c) Sometimes Kc = Kp d) All of these

88) Which of the following solutions would cause precipitation when added to a saturated solution of $PbBr_2$?
a) $NaNO_3$ b) $Zn(NO_3)_2$ c) AgCl d) HBr

89) Which of the following represents a weak acid?
a) HNO_3 b) H_2S c) CH_3COONa d) NH_4OH

90) Which of the following can be used to produce a buffer of pH below 7?
a) NaCl + HCl b) $CH_3COONa + CH_3COOH$
c) $NH_3 + NH_4OH$ d) $NH_4Cl + HCl$

91) In which of the following Kp is smaller than Kc?
a) $N_2O_4 \rightleftharpoons 2NO_2$ b) $2SO_2 + O_2 \rightleftharpoons 2SO_3$ c) $2HI \rightleftharpoons H_2 + I_2$ d) $N_2 + O_2 \rightleftharpoons 2NO$

92) The effect of increasing pressure on the system $2A + 3B \rightleftharpoons 3C + 2D$ indicates that
a) Forward reaction is favored b) Backward reaction is favored
c) No effect is observed d) It totally depends on other factors

93) Which of the following affect the value of the solubility product Ksp of silver sulfide when it is precipitated by passing hydrogen sulfide into aqueous silver nitrate? $2AgNO_3(aq) + H_2S\ g \rightleftharpoons Ag_2S(s) + 2HNO_3(aq)$
a) An increase in temperature b) addition of aqueous silver nitrate
c) addition of aqueous sodium sulfate d) The pressure of hydrogen sulfide

94) Ethanoic acid is a stronger acid in liquid ammonia than in water. The reason for this may be;
a) Ethanoic acid molecules form hydrogen bonds with water
b) Ethanoic acid is more soluble in liquid ammonia than in water
c) Ammonia is a stronger base than water
d) Ethanoic acid has a high enthalpy change of hydration

95) The pKb value for aqueous ammonia at 25°C is 4.8. What is the correct pKa value for the ammonium ion at this temperature?
a) -4.8 b) 4.8 c) 2.2 d) 9.2

96) In a reaction $A_2 + 4B_2 \rightleftharpoons 2AB_4$; $\Delta H < 0$, The formation of AB_4 will be favored by
a) Low temperature& high pressure b) High temperature& low pressure
c) Low temperature &low pressure d) High temperature& high pressure

97) Which of the following statements are true about the Haber process for the manufacture of Ammonia?
a) At higher temperatures, the yield goes down but the rate of production of ammonia is faster
b) At higher pressures, the yield goes down but the rate of production of ammonia is faster.
c) In the presence of a catalyst, the yield goes up and the rate of production of ammonia is faster.
d) Both 'a' and 'c' are correct.

98) A reversible reaction is catalyzed, which of the following statements about this system are correct?
a) The catalyst alters the number of moles of products of the reaction.
b) Equilibrium position is shifted in the forward direction as a result of the increase in the rate.
c) The catalyst alters the composition of the equilibrium mixture.
d) None of these

99) Which of following in aqueous solution does considerably change in pH when small volume of strong acid or strong alkali is added?
a) A mixture of carbonic acid and sodium hydrogen carbonate. b) A mixture of sodium chloride and ethanoic acid
c) A mixture of sodium sulfate and sodium chloride. d) None of these

100) The optimum industrial conditions for the synthesis of ammonia are
a) 100-200 atm. 400^0C, Fe + Al_2O_3
b) 200-300 atm, 400^0C, Fe embedded in Al_2O_3+ MgO + SiO_2
c) 200 atm, 100-200^0C, V_2O_5.
d) 400 atm, 200-300^0C, Fe embedded in Al_2O_3+ MgO + SiO_2

101) What is not correct for H_2O at normal temperatures?
a) $K_W = 10^{-14}$ b) pOH = 7 c) $[H^+] = [OH^-]$ d) $K_W = [H^+][OH^-]/[H_2O]$

102) Which of the following statements is correct about a reaction for which the equilibrium constant is independent of temperature?
a) The activation energies for both forward and reverse reactions are zero b) The enthalpy change is zero
c) Its rate constants do not vary with temperature. d) There are equal numbers of moles of reactants and products.

103) The oxidation of SO_2 by O_2 to SO_3 is an exothermic reaction. The yield of SO_3 will be maximum if
a) Temperature is increased and pressure is kept constant b) Both temperature and pressure are increased
c) Temperature is reduced and pressure is increased
d) Both temperature and pressure are decreased

104) An acidic buffer solution can be prepared by mixing the solutions of
a) Sodium chloride and sodium hydroxide b) Sulphuric acid and sodium sulfate
c) Ammonium chloride and ammonium hydroxide d) Sodium acetate and acetic acid

105) The strongest Bronsted base among the following ions is
A) CH_30^- B) $(CH_3)_2CHO^-$ C) $C_2H_50^-$ D) $(CH_3)_3C0^-$

106) The compound whose 0.1 M solution is basic is
a) Ammonium acetate b) Sodium acetate c) Ammonium sulfate d) Ammonium chloride

107) For a reversible reaction, if the concentrations of the reactants are doubled, at constant temperature the equilibrium constant will be
a) One-fourth b) Halved c) Doubled d) The same

108) A reversible reaction is said to have attained equilibrium, when
a) Backward reaction stops
b) Both backward arid forward reactions stop
c) Both backward &forward reactions take place at equal speed
d) Concentration of each of the reactants & products becomes equal

109) The chemical equilibrium of a reversible reaction is not influenced by
a) Temperature b) catalyst c) Pressure d) Concentration.

110) Which of the following favors the backward reaction in a chemical equilibrium?
a) Decreasing the concentration of one of the reactants
b) Increasing the concentration of one of the reactants
c) Increasing the concentration of one or more of the products
d) Removal of at least one of the products at a regular interval

111) Appropriate units of Kp for the following reaction is $2SO_3\ g \rightleftharpoons 2SO_2(g) + O_2(g)$
a) mol/dm^3 b) Torr c) dm^3/mol d) dm^6/mol^2

112) At equilibrium, the relationship between concentrations of reactants and products
a) [Reactants] > [Products] b) [Reactants] < [Products]
c) [Reactants] = [Products] d) All are possible

113) If Ksp is equal to the product of the concentration of ions at a particular temperature then the solution is
a) Saturated b) Supersaturated c) Unsaturated d) Concentrated

114) Which will change for the first-order reaction with time?
a) Rate constant b) Rate of reaction c) Half-life d) All of these

115) When two reactants A & B are mixed to give products C and D reaction quotient, Q at the initial stage of the reaction
a) is independent of time b) is zero c) Decrease with time d) increase with time

116) Species acting both as Bronsted acid and base is
a) OH- b) NH_3 c) Na_2CO_3 d) HSO_4^-

117) At 90°C pure water has H_3O+ ion concentration of 10^{-6} mol/L, the Kw at 90°C is
a) 10^{-8} b) 10^{-6} c) 10^{-14} d) 10^{-12}

118) The solubility of A_2X_3 is y mol dm^{-3}. Its solubility product is
a) $6y^4$ b) $36y^5$ c) $64y^4$ d) $108y^5$

119) What will be the pH of 1.0 mol dm^{-3} of H_2X, which is only 50% dissociated?
a) 1 b) 0 c) 2 d) Less than 0

120) What will be the pH of 1.0 mol dm^{-3} of NH_4OH, which is 1% dissociated?
a) 2 b) 12 c) 0 d) 2.7

121) Buffer solutions are used in?
a) Clinical analysis b) Nutrition c) Soil science d) all

122) Buffer action can be explained by except?
a) Common ion effect b) Le-Chatelier's principle c) Law of mass action d) Solubility product

123) At equilibrium, the concentration of reactants and products are:
a) Constant b) Maximum c) Different d) Equal

124) In the reaction $A_{2(g)} + 4B_{2(g)} \rightleftharpoons 2AB_{4\,(g)}$ such that $\Delta H < 0$; the formation of $AB_{4(g)}$ will be favoured at:
a) Low temperature and high pressure
b) High temperature and low pressure
c) Low temperature and low pressure
d) High temperature and high pressure

125) Consider the reaction $PCl_5\,(g) \rightleftharpoons PCl_3(g) + Cl_2$ in a closed container at equilibrium. At a fixed temperature, what will be the effect of adding more PCl_5 on the equilibrium constant?
a) It increases b) It remains unaffected c) It decreases d) Can't be predicted without K_P

126) The oxidation of SO_2 to SO_3 is an exothermic reaction. The yield of SO_3 will be maximum if:
a) Temperature is increased and pressure is kept constant
b) Temperature is reduced and pressure is increased
c) Both temperature and pressure are increased
d) Both temperature and pressure are decreased

127) If the concentration of salt is greater than the acid in buffer solution, then the?
a) pH = pKa b) pH = pKb c) pH > pKa d) pH > pKb

128) For the reaction $H_2(g) + I_2(g) \rightleftharpoons 2HI(g)$. The equilibrium constant changes with:
a) Total pressure b) The concentration of H_2 and I_2 c) Catalyst d) Temperature

129) An excess of silver nitrate is added to the aqueous barium chloride and the precipitate is removed by filtration. What are the main ions in the filtrate?
a) Ag^+ and NO^- only b) NO^- and Ba^{+2} only c) Ag^+ and NO^- and Ba^{+2} only d) Cl^- and NO^- and Ba^{+2} only

130) The pH of 10^{-4} mole dm^{-3} of HCl:
a) 2 b) 4 c) 3 d) 5

131) The most suitable temperature for preparing ammonia gas is:
a) 250°C b) 450°C c) 350°C d) 550°C

132) The Kw of water at 25°C is given by:
a) 10^{-7} b) 10^{-10} c) 10^{-12} d) 10^{-14}

133) When HCl gas is passed through the saturated solution of rock salt, the solubility of NaCl:
a) Increases b) May increases or decreases c) Decreases d) None of these

134) For what value of Kc almost forward reaction is complete?
a) $Kc = 10^{-30}$ b) $Kc = 1$ c) $Kc = 10^{30}$ d) $Kc = 0$

135) In which of the following Equilibrium will Kc and Kp have not the same value?
a) $2HI \rightleftharpoons H_2 + I_2$ b) $2SO_2 + O_2 \rightleftharpoons 2SO_3$ c) $N_2 + O_2 \rightleftharpoons 2NO$ d) All of these

136) If the temperature is increased of the following reaction, then will go in $N_2 + 3H_2 \rightleftharpoons 2NH_3$ ΔH = -Ve
a) Forward direction b) Remain constant c) Reverse direction d) Cannot be predicted

137) Which one is very weak acid?
a) HF b) H_2CO_3 c) HCl d) H_2O

138) Which one increases by common ion effect except?
a) Crystallization b) Solubility c) Association of ions d) All of these

139) A basic buffer solution can be prepared by mixing:
a) Strong acid and it is a salt with a weak base
b) Strong base and it is a salt with weak acid
c) Weak base and it is a salt with a strong acid
d) Weak acid and it is a salt with strong base

140) Which one is the best buffer those have:
a) pH = pKa b) pH > pKa c) pOH < pKb d) pKa = 0

141) If the ionic product is equal to Ksp then the solution is:
a) Unsaturated b) Ideal c) Supersaturated d) Saturated

142) When number of moles reactants are equal to number of moles of products then,
a) Kc=Kp b) Kp >Kc c) Kc > Kp d) none of these

143) If [product]/[reactant] ratio is less than Kc the reaction will move :
a) forward b) backward c) unchanged d) at equilibrium

144) If the value of Kc is very large then reaction is
a) Incomplete b) almost complete c) no effect d) none of these

145) If the value of Kc is very small for reversible reaction the position of equilibrium lies on
a) left b) right c) reactants side d) both a and c

146) For a chemical reaction if np = nr then there will be no effect of change in
a) Temperature b) pressure c) volume d) both b and c

147) When temperature of water is increased from 0°C to 100°C the Kw becomes
a) 50X b) 25X c) 75X d) no effect

148) Term pH and pOH is introduced in
a) 1900 b) 1909 c) 1905 d) 1911

149) The value of pH can be
a) less than zero b) b/w zero and 14 c) greater than 14 d) all of these

150) pH of tomato is
a) 1.2 b) 4.2 c) 7.2 d) all of these

151) If pOH of solution is 4 then $[H^+]$ is moldm^{-3}
a) 10^{-10} b) 0.4 c) $4x10^4$ d) 4

152) Which is true for weak acid?
a) $Ka < 10^{-3}$ b) Ka= 1 to 10^{-3} c) Ka> 1 d) none of these

153) Weak electrolyte will be more dissociated if
a) Less molarity b) dilute solution c) both a and b d) none of these

154) On dilution for a solution the value of Ka?
a) Increases b) decreases c) no effect d) none of these

155) If pKa of acid is 5 then pKb of its conjugate base will be
a) 8 b) 9 c)10 d) none of these

156) Common ion effect is used in
a) Qualitative analysis b) salt analysis c) buffer solution d) all of these

d) Which of the following depends upon temperature
a) Kw and Kc b) Ka and Kb c)Ksp d) all of these