INDIAN SCHOOL DARSAIT

DEPARTMENT OF CHEMISTRY

Subject: Chemistry Topic : Equilibrium Date of Worksheet: 4.2.2019

Resource Person: Rohitha Date of Submission:_____

Name of the Student: _____ Class &Division: XI Roll Number: _____

1	Give reason: a) Equilibrium can be established only in closed system. b) Chemical equilibrium is dynamic in nature.	2
2	Differentiate between b) solubility and solubility product c)ionic product and solubility product	2
3	The Kc value for the reaction $SO_{2\,(g)} + ½\ O_{2\,(g)} \rightleftharpoons SO_{3\,(g)}$ is 72.5. What is the value of Kc for $2SO_{3(g)} \rightleftharpoons 2SO_{2(g)} + O_{2(g)}$?	2
4	If the Kp value for the reaction $CO_{2(g)} + C_{(s)} \rightleftharpoons 2CO_{(g)}$ at 1000K is 3, find value of Kc.	2
5	An equilibrium mixture contains $[PCl_5] = 0.15$, $[PCl_3] = 0.29$, $[Cl_2] = 0.32$. If Kc for the dissociation of PCl_5 at the same temperature is 3.5, in which direction is the reaction proceeding?	2
6	What happens to the concentration of products when the pressure is increased in the following reaction at equilibrium? $2NO_{2(g)} \rightleftharpoons N_2O_{4(g)}$?	2
7	The pH of an acetic acid solution is 5.6. What is the concentration of the solution if $Ka = 1.8 \times 10^{-7}$?	2
8	Name an acid buffer and an alkaline buffer each. Explain the buffer action of a basic buffer.	2
9	Copper is precipitated as sulphide in the II group while Zn is precipitated as sulphide in the IV group. Explain.	2
10	Calculate the solubility of $BaSO_4$ if its Ksp value is 1.1×10^{-10}.	2

11	10ml of 0.1M $CaCl_2$ is mixed with 15ml of 0.11M NaF. Predict whether CaF_2 will precipitate if the Ksp of CaF_2 is 5.3×10^{-9}.	2
12	Which of the following is more soluble? a) AgCl or AgBr [Ksp of AgCl = 1.8×10^{-10} ; AgBr = 5×10^{-13}] b) AgCN or $Ni(OH)_2$ [Ksp AgCN = 2×10^{-15}; $Ni(OH)_2 = 6 \times 10^{-17}$]	2
13	State (i) Henry's law (ii) LeChatelier's principle	2
14	a)Write the formula for the conjugate acid of (i) F^- (ii) OH^- b)Write the formula for the conjugate base of HNO_2 , $HClO_4$	2
15	Classify the following as Lewis acid or Lewis base H^+ , H_2O , NH_3 , BF_3 , Al^{3+} , $BeCl_2$, Cl^-	2