ST. LAWRENCE HIGH SCHOOL

A JESUIT CHRISTIAN MINORITY INSTITUTION

FOR GOD AND COUNTRY

WORKSHEET-50(CLASS-11)

TOPIC- CHEMICAL EQUILIBRIUM

SUBJECT – CHEMISTRY
DURATION – 30 mins

F.M. - 15
DATE – 25.01.21

Q.1 **Once the equilibrium is reached under given condition:**

A Conc., remains the same in spite of the change in temperature
B Conc., of all the substances presents do not change
C Conc., of reactants remairfs same
D Conc., of products remains same

Q.2 **PCL5 is kept in a closed container at a temperature of 250 K the equilibrium concentration of the different substances is [PCL5]=0.045 moles liter−1 [PCL3]=[CL2]=0.096 moles . The value of equilibrium constant for the reaction PCL5⇋PCL3+CL2 will be:**

A 50
B 50.4
C 0.0205
D 0.205

Q.3 **Equilibria are those in which the reactants and products are present in more than phases:**

A Physical
B Heterogeneous
C Chemical
D Homogeneous

Q.4 **Equilibrium constant changes with:**

A time
B temperature
C pressure
D both temperature and concentration

Q.5 **A chemical reaction P⇋Q is said to be in equilibrium when:**

A Rate of conversion of P to Q is the same as that of Q to P
B P and Q are present in equimolar ratio
C P has completely changed to Q
D 35% of P is changed to Q

Q.6 **Reaction between silver nitrate and sodium chloride goes to completion because:**

A the reaction is instantaneous
B silver nitrate is insoluble in water
C silver chloride is sparingly soluble in water
D solubility of silver nitrate increases with sodium chloride

Q.7 **For the reaction $2HI \leftrightharpoons H_2 + I_2$ at 720 K the equilibrium constant value is 50. The equilibrium constant for the reaction $H_2 + I_2 \leftrightharpoons 2HI$ at the same temperature will be:**

A 20
B 0.56
C 30
D 0.02

Q.8 **0.894 moles of NH_3 is enclosed in a 5-litre container and heated to 620 K. If value of the equilibrium constant for the reaction $2NH_3 \leftrightharpoons N_2 + 3H_2$ is 0.0395 at 629 K then concentration of NH_3 at equilibrium will be:**

A 0.037
B 1.37
C 0.140
D 5.337

Q.9 **On mixing 1 mole of ethyl alcohol with 1 mole of acetic acid at 298 K the equilibrium concentration of ester and water becomes - moles each. If 2/3 moles of alcohol is mixed with 1 mole of acid, the concentration of ester in moles at equilibrium will be:**

A 0.09
B 0.90
C 1.1
D 2.2

Q.10 **The chemical system in equilibrium is not affected by:**

A change in the concentration of products

B increase in the concentration of reac-tants
C addition of a catalyst
D changing the temperature

Q. 11 **At 2000 K the reaction C(s) + CO2 (g) ⇋2CO (g) is at equilibrium. If the molar concentration of both CO and CO2 at 2000 K at equilibrium is 8 moles lit−1 and 2 moles lit−1 respectively then equilibrium constant for the reaction will be:**

A 32
B 12.8
C 48
D 16

Q.12 **For the reaction H2(g)+I2(g)⇌ 2HI at 721 K value of equilibrium constant is 50, when molar concentration of both hydrogen and iodine is 0.5 M at equilibrium value of Kp under the same conditions will be:**

A 0.05
B 50
C 0.1
D 25 RT

Q. 13 **The equilibrium constant for the reaction at 523 K PCL5(g)⇌PCL3(g)+CL2(g) is 0.04. If value of R = 8.314 JK−1 then ΔG° for the reaction will be:**

A 0.13
B 5
C +13.9 kJ
D -13.9 KJ

Q. 14 **The reaction H2+I2⇌ 2HI is at equilibrium at 298 K 1 mole of N2 gas is introduced in the reaction chamber at constant temperature and constant volume. At this:**

A state of equilibrium will remain unaffected
B more of HI will be obtained
C equilibrium constant will change
D more of HI dissociate

Q. 15**0.5 moles of H2 and 0.5 moles of I2 are introduced in the reaction chamber of capacity 10 litre at 271 K. H2 and I2 react to give HI and Kpis found to be 50. If total pressure in the reaction chamber is 5.9 atmosphere then partial pressure of hydrogen will be:**

A 0.325 atm
B 3.2 atm
C 4.6 atm
D 0.65 atm

PREPARED BY: MR. ARNAB PAUL CHOWDHURY