

ST. LAWRENCE HIGH SCHOOL A JESUIT CHRISTIAN MINORITY INSTITUTION SOLUTION-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

Answer: b

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

Answer: c

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

Answer: b

Q.4 Equilibrium constant changes with:

A time B temperature C pressure D both temperature and concentration

Answer: b

Q.5 A chemical reaction $P \rightleftharpoons Q$ 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

Answer: a

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

Answer: c

Q.7 For the reaction 2HI\$\H12+12 at 720 K the equilibrium constant value is 50. The equilibrium constant for the reaction H2+12\$\H12+2HI at the same temperature will be:

A 20 B 0.56 C 30 D 0.02

Answer: d

Q.8 0.894 moles of NH3 is enclosed in a 5-litre container and heated to 620 K. If value of the equilibrium constant for the reaction 2NH3 \Rightarrow N2+3H2 is 0.0395 at 629 K then concentration of NH3 at equilibrium will be:

A 0.037 B 1.37 C 0.140 D 5.337

Answer: a

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

Answer: b

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

Answer: c

Q. 11 At 2000 K the reaction C(s) + CO2 (g) \Rightarrow 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

Answer: a

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

Answer: b

Q. 13 The equilibrium constant for the reaction at 523 K PCL5 (g) \rightleftharpoons 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

Answer: c

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

Answer: a

Q. 11 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 Kp is 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

Answer: d

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