Cantonment Public School & College, Saidpur.

Online Exam CT-1/2020

Subject: Chemistry 1st paper Class: XI (English Version)

Sub-code: 1

(MCO)

Time: 40 minutes Full marks: 20 [Answer all questions. Each question carries one mark. Block fully with ball point pen the circle of the letter that stands for the correct answer in the answer sheet.]

- 1. At the time of producing Oxygen from KClO₃ which one is used to increase the dissociation degree of KClO3?
 - a. Fe

- b. SiO₂
- c. MnO₂
- d. V₂O₅
- 2.Which one is not the characteristics of equilibrium?
 - a. Stability of equilibrium
 - b. Mobile from both side
 - c. Rate of reaction
 - d.Incomplete of the reaction
- 3. How is the catalyst increased the rate of reaction?
 - i. By incrasing the kinetic energy of the reactant.
 - ii. By decreasing activation energy.
 - iii. By adsorbing reactant molecule.

Which one is correct?

- a. i, ii
- b. i, iii
- c. ii, iii
- d. i. ii . iii
- 4. If the equilibrium constant of the reaction

$$SO_2(g) + \frac{1}{2} O_2(g) \rightarrow SO_3(g)$$
 is K_1 and the

reaction of $2SO_3(g) \rightarrow 2SO_2(g) + O_2$ is K_2 . What will be the relation between K_1 and K_2 ?

- a. $2K_1 = K_2$
- b. $K_1^2 = \frac{1}{K_2}$
- c. $K_2 = \frac{1}{K_1}$
- d. $\frac{2}{K_2} = K_1$
- 5. Which mixer having the p^H value equal to 1?
 - a. 60 mL $\frac{M}{10}$ HCl+40 mL $\frac{M}{10}$ NaOH
 - b. 55 mL $\frac{M}{10}$ HCl + 45mL $\frac{M}{10}$ NaOH
 - c. 75 mL $\frac{M}{5}$ HCl + 25mL $\frac{M}{5}$ NaOH
 - d. 100 mL $\frac{M}{10}$ HCl + 100mL $\frac{M}{10}$ NaOH
- 6. Which acid having minimum value of dissociation constant K_a?

- a. H₂CO₃
- c. CH₃COOH
- d. HClO₄

b. HF

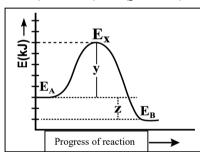
7. Initial concentration of B is 1.5times than the initial concentration of A of the reaction

 $A + 2B \Longrightarrow 2C + D$. But at equilibrium the concentration of A and B are same. What will be the value of equilibrium constant? a. 8 ‡Kvbw U mvg ve vi ^ewkó" bq?

- a. 8
- c. 12
- 8. At equilibrium the mixer of SO₃, SO₂ and O₂ are in a container. If some helium gas is added in the container then the total pressure of the mixer is increased श्रेष्ठाक स्ट्रीकार विकास अधि विकास अधि विकास अधि विकास विकास अधि विकास विका voluime will remain same. What will be the change of dissociation degree of SO₃
 - a.will increase
- b. Will decrease
- c.No change
- d. None will correct

Answer the question no.9 and 10 according to the graph.

$A(reactant) \rightarrow B(product)$



- 9. What will be the activation energy for the backward reaction $(B \rightarrow A)$?
 - a. y-z
- c. z + y
- d. E_x-z
- 10. The reaction of the stem
 - i. Exothermic
 - ii. Heat absorb from the environment
 - iii. The energy of product is less than reactant Which one is correct?
 - a. i, ii
- b. i, iii
- c. ii, iii
- d. i, ii, iii
- 11. The dissociation reaction of XY_2 is $XY_2(g)$ \Longrightarrow XY(g) + Y(g), The initial pressure XY₂ is 600mm(Hg) and total pressure at equilibrium 800mm(Hg) .What is the value of equilibrium constant?
 - a. 50
- b. 100

- 12. The dissociation degree of the reaction 2AB₂ $(g) \rightleftharpoons 2AB(g) + B_2(g)$ is x and the value of x is less than 1. What will be the exact value of

 - a. $\left(\frac{K_{P}}{P}\right)$ b. $\left(\frac{2K_{P}}{P}\right)$

 - $c. \left(\frac{2K_{P}}{P}\right)^{1/3} \qquad d. \left(\frac{2K_{P}}{P}\right)^{1/2}$
- 13. $2H_2(g) + O_2(g) \rightleftharpoons 2H_2O(l)$; What is the K_C equation of the reaction
 - a. $K_C = \frac{[H_2O]^2}{[H_2]^2[O_2]}$
 - b. $K_C = \frac{1}{[H_2]^2 [O_2]}$
 - c. $K_C = \frac{[H_2]^2[O_2]}{[H_2O]^2}$
 - d. $K_C = [H_2]^2 [O_2]$
- 14. In the mixer of 10mL 0.1M HCl and 5 mL 0.1M NaOH solution. Which ion will be present?
 - a. OH⁻, Cl⁻, Na⁺
 - b. OH^- , Cl^- , H^+
 - c. H⁺, Cl⁻, Na⁺
 - d. H⁺, Cl⁻, Na⁺, OH⁻
- 15. The factors affect on the reaction rate
 - i. Catalyst
 - ii. Concentration of reactant
 - iii. The surface area of reactant

Which one is correct?

- a. i . ii
- b. i, iii
- c. ii, iii
- d. i, ii, iii

16. Which substance should be added so that the reaction moves forward to complete the reaction by removing OH⁻?

 $3MnO_4^{2-} + 2H_2O \Longrightarrow 2MnO_4^{-} + MnO_2 + 4OH^{-}$

- a. HCl
- b. KOH
- c. CO₂
- d. SO₂
- 17. The reaction $CaCO_3(s) \rightleftharpoons CaO(s) + CO_2(g)$ is in a closed container at equilibrium state. If some amount of CaCO₃ is added then what will be the concentration of CO₂
 - a. Increase
- b. Decrease
- c.No change
- d.None will correct
- 18.If the pH value of a weak acid is 4 then the molar concentration (C) and dissociation degree (a) will be-

 - a. $C=10^{-3}$ $\alpha=5\%$ b. $C=10^{-2}$, $\alpha=10\%$ c. $C=10^{-3}$, $\alpha=10\%$ d. $C=10^{-2}$, $\alpha=2.5\%$
- 19. A salt produces a colorless solution dissolving in water. Whose pH value is 9. What is the formula of that salt?
 - a. NH₄NO₃
 - b. CH₃COOK
 - c. CH₃COONH₄
 - d. CaCO₃
- 20.If the $Q_C = \frac{[NH_3]^2}{[N_2][H_2]^3}$ of the reaction
- $N_2(g) + 3H_2(g) \rightleftharpoons 2NH_3(g)$. To turn the reaction from right to left what should be done-

 - $\begin{array}{lll} a. \ Q_C = K_C & & b. \ Q_C > K_C \\ c. \ Q_C < K_C & & d. \ Q_C = 0 \\ \end{array}$