INDIAN SCHOOL NIZWA - WORKSHEET

CHEMISTRY

CHAPTER: 4 Chemical Kinetics

Name: _____ Date:_____ Class: XII Sec: ___

Answer the following

1.	For the reaction P → Q the rate of reaction becomes 2 times when the concentration of A is increased 8 times. What is the order of reaction?
2.	$X_2 + 3Y_2 \rightarrow 2XY_3$. Write the rate equation in terms of disappearance of Y_2
3.	The reaction; 2N2O5 ----> 4NO2 + O2, shows an increase in concentration of NO2 by 20 x 10^{-3}mol/l in 5 second. Calculate (a) rate of appearance of NO2, (b) rate of reaction and (c) rate of disappearance of N2O5.
4.	A first order reaction is 60% complete in 20 minutes. Calculate the time taken for the reaction to complete 84%.
5.	From the rate expression for the following reactions, determine their order of reaction and the dimensions of the rate constants. i) $3NO \rightarrow N_2O$ Rate $=K[NO]^2$ (ii) $H_2O_2(aq) + 3I^-(aq) + H^+ \rightarrow 2H_2O(l) + I_3^-$ Rate $= k[H_2O_2][I^-]$ (iii) $CH_3CHO(g) \rightarrow CH_4(g) + CO(g)$ Rate $= k[CH_3CHO]^{3/2}$ (iv) $C_2H_5Cl(g) \rightarrow C_2H_2(g) + HCl(g)$ Rate $= k[C_2H_5Cl]$
6.	A first order reaction takes 20 minutes for 25% decomposition. Calculate the time when 75% of the reaction will be completed. [Given : log 2 = 0.3010, log 3 = 0.4771, log 4 = 0.6021]
7.	The rate of a reaction triples when temperature changes from 27^0C to 37^0C. Calculate energy of activation for the reaction
8	Assertion Reason questions a) Assertion &Reason are correct and reason is the correct explanation for assertion b) Assertion &Reason are correct and reason is not the correct explanation for assertion

c) Assertion is true but reason is false
d) Assertion is false and reason is true

1. Assertion: The fastest elementary step in a complex reaction decides the rate of the reaction.

   Reason: The order can be zero

2. Assertion: Unit of rate constant is independent of order of reaction.

   Reason: The power of concentration terms in the rate equation keep changing with change in order.

3. Assertion: Reactions of higher order are rare

   Reason: The chances of multimolecular collision are extremely small.