Date Planned : __ / __ / __	Daily Tutorial Sheet-3	Expected Duration : 90 Min
Actual Date of Attempt : __ / __ / __	Level-1	Exact Duration :_____

31. For the first order reaction with rate constant k, which expression gives the half-life period? (Initial concentration = a)

(A) ln 2/k **(B)** 1/ka **(C)** 0.693/ka **(D)** 3/2 ka^2

32. The rate constant is given by the equation $k = p.Ze^{-E/RT}$. Which factor should register a decrease for the reaction to proceed more rapidly?

(A) T **(B)** Z **(C)** E **(D)** p

33. The temperature coefficient of most of the reactions lies between :

(A) 1 and 3 **(B)** 2 and 3 **(C)** 1 and 4 **(D)** 2 and 4

34. The reaction $2FeCl_3 + SnCl_2 \longrightarrow 2FeCl_2 + SnCl_4$ is an example of :

(A) first order reaction **(B)** second order reaction

(C) third order reaction **(D)** None of these

35. Activation energy of a reaction is determined by :

(A) plotting substrate-time graph

(B) plotting rate-time graph

(C) calculating rate constants at two different temperatures

(D) None of these

36. Rate constant depends on :

(A) temperature **(B)** time

(C) initial concentration **(D)** none

37. If the half-life for a first order reaction is 4 min, then the time after which the reaction is 99.9% completed is :

(A) 16 min **(B)** 8 min. **(C)** 32 min **(D)** 40 min.

38. Which of the following is pseudo first order reaction?

I. $CH_3COOC_2H_5 + H_2O \xrightarrow{H^+} CH_3COOH + C_2H_5OH$

II. $C_{12}H_{22}O_{11} + H_2O \xrightarrow{H^+} C_6H_{12}O_6 + C_6H_{12}O_6$

(A) only I **(B)** only II

(C) both I & II **(D)** none of these

39. For the reaction $A + B \longrightarrow C + D$, doubling the concentration of both the reactants increases the reaction rate by 8 times and doubling the concentration of only B simply doubles the reaction rate. The rate law is given as :

(A) $r = k[A]^{1/2}[B]^{1/2}$ **(B)** $r = k[A][B]^2$

(C) $r = k[A]^2[B]$ **(D)** $r = k[A][B]$

40. In Arrhenius plot, intercept is equal to:

(A) $-E_a / R$ **(B)** ln A **(C)** ln *k* **(D)** $\log_{10} A$

41. When a biochemical reaction is carried out in laboratory from outside of human body in absence of enzyme then the rate of reaction obtained is 10^{-6} times, then activation energy of reaction in presence of enzyme is :

(A) 6/RT

(B) P is required

(C) different from E_a obtained in the laboratory

(D) cannot say anything

42. A sample of radioactive substance loses half of its activity in 4 days. The time in which its activity is reduced to 5% is :

(A) 12 days **(B)** 8.3 days **(C)** 17.3 days **(D)** None of these

43. A chemical reaction was carried out at 300 K and 280 K. The rate constants were found to be K_1 and K_2 respectively. Then:

(A) $k_2 = 4k_1$ **(B)** $k_2 = 2k_1$ **(C)** $k_2 = 0.25k_1$ **(D)** $k_2 = 0.5k_1$

44. Collision Theory is applicable to:

(A) First order reactions **(B)** Zero order reactions

(C) Bimolecular reactions **(D)** Intramolecular reactions

45. The time taken for 90% of a first order reaction to complete is approximately:

(A) 1.1 times that of half-life **(B)** 2.2 times that of half-life

(C) 3.3 times that of half-life **(D)** 4.4 times that of half-life