

Date Planned : __ / __ / __	Daily Tutorial Sheet-6	Expected Duration : 90 Min
Actual Date of Attempt : __ / __ / __	Level-2	Exact Duration : _____

76. For the reaction, $2\text{N}_2\text{O}_5(\text{g}) \longrightarrow 4\text{NO}_2(\text{g}) + \text{O}_2(\text{g})$ ▶
- If the concentration of NO_2 increases by $5.2 \times 10^{-3} \text{ M}$ in 100s then the rate of the reaction is :
- (A) $1.3 \times 10^{-5} \text{ Ms}^{-1}$ (B) $0.5 \times 10^{-4} \text{ Ms}^{-1}$ (C) $7.6 \times 10^{-4} \text{ Ms}^{-1}$ (D) $2 \times 10^{-4} \text{ Ms}^{-1}$
77. Observe the following reaction, $2\text{A} + \text{B} \longrightarrow \text{C}$
- The rate of formation of C is $2.2 \times 10^{-3} \text{ M min}^{-1}$. What is the value of $-\frac{d[\text{A}]}{dt}$ (in $\text{mol L}^{-1} \text{ min}^{-1}$) ?
- (A) 2.2×10^{-3} (B) 1.1×10^{-3} (C) 4.4×10^{-3} (D) 5.5×10^{-3}
78. The rate of chemical reaction : (Non-zero order)
- (A) Increases as the reaction proceeds (B) Decreases as the reaction proceeds
- (C) May increase or decrease during reaction (D) Remains constant as the reaction proceeds
79. The following data were obtained during the first order decomposition of $2\text{A}(\text{g}) \longrightarrow \text{B}(\text{g}) + \text{C}(\text{s})$ at a constant volume and at a particular temperature.
- | S. No. | Time | Total pressure in Pascal |
|--------|----------------------|--------------------------|
| 1 | At the end of 10 min | 300 |
| 2 | After completion | 200 |
- The rate constant in min^{-1} is:
- (A) 0.0693 (B) 0.693 (C) 6.93 (D) 6.93×10^{-3}
80. The time required for 100% completion of a zero order reaction is : ▶
- (A) ak (B) $\frac{a}{2k}$ (C) $\frac{a}{k}$ (D) $\frac{2k}{a}$
81. For a first order reaction, the concentration changes from 0.8 to 0.4 in 15 min. The time taken for the concentration to change from 0.1 M to 0.025 M is:
- (A) 30 min (B) 15 min (C) 7.5 min (D) 60 min
82. $\text{CH}_3\text{COOC}_2\text{H}_5 + \text{H}_2\text{O} \xrightarrow{\text{H}^+} \text{CH}_3\text{COOH} + \text{C}_2\text{H}_5\text{OH}$ is an example oforder. ▶
- (A) zero (B) second (C) third (D) pseudo first order
83. For a reaction between gaseous compounds, $2\text{A} + \text{B} \longrightarrow \text{C} + \text{D}$; the reaction rate law is $\text{rate} = k[\text{A}][\text{B}]$. If the volume of the container is made $1/4^{\text{th}}$ of the initial, then what will be the rate of reaction as compared to the initial rate?
- (A) 16 times (B) 4 times (C) $\frac{1}{8}$ times (D) $\frac{1}{16}$ times
84. The half - life period of a first order chemical reaction is 6.93 min. The time required for the completion of 99% of the chemical reaction will be : ($\log 2 = 0.301$) ▶
- (A) 230.3 min (B) 23.03 min (C) 46.06 min (D) 460.6 min
85. The unit of rate constant of a second order reaction is :
- (A) $\text{L}^2 / \text{mol}^2 \text{s}$ (B) $\text{L} / \text{mol s}^{-1}$ (C) $\text{L}^2 / \text{mol}^2 \text{s}^{-1}$ (D) per second