

Parishram (2025)

Physical Chemistry

DPP: 5

Chemical Kinetics

Q1 For a 1st order reaction, a straight line is obtained if you plot

- (A) Log conc. Vs. time
- (B) Conc. vs. time
- (C) 1/conc. vs. time
- (D) Log conc. vs. 1/time

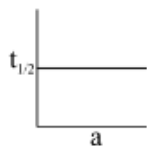
Q2 A substance (initial concentration 'a') reacts according to zero order kinetics. The time it takes for the completion of the reaction is

- (A) $\frac{a}{k}$
- (B) $\frac{a}{2k}$
- (C) $\frac{k}{a}$
- (D) $\frac{2k}{a}$

Q3 Which order reaction obeys the expression $t_{1/2} \propto 1/[A]_0$?

- (A) First
- (B) Second
- (C) Third
- (D) Zero

Q4 The graph of $t_{1/2}$ versus initial concentration 'a' is for



- (A) First order
- (B) Second order
- (C) Zero order
- (D) Can't predict

Q5 A first order reaction completes 60% in 20 minutes. The time required for the

completion of 90% of the reaction is approx.....

- (A) 30 minutes
- (B) 40 minutes
- (C) 50 minutes
- (D) 60 minutes

Q6 The half-life of a second order process, $2A \rightarrow$ products, is

- (A) Independent of initial concentration
- (B) Directly proportional to initial concentration of A
- (C) Inversely proportional to initial concentration of A
- (D) Inversely proportional to square of initial concentration

Q7 The half-life period of a substance is 50 minutes at a certain initial concentration. When concentration is reduced to one-half, half-life is found to 25 minutes. Order of reaction is

- (A) Zero
- (B) First
- (C) Second
- (D) Third

Q8 For a reaction, $A \rightarrow B$, it has been found that the order of the reaction is zero with respect to A. Which of the following expressions correctly describes the reaction?

- (A) $K = \frac{2.303}{t} \log \frac{[A_0]}{[A]}$
- (B) $[A]_0 - [A] = Kt$
- (C) $t_{1/2} = \frac{0.693}{K}$
- (D) $t_{1/2} \propto \frac{1}{[A]_0}$



Answer Key

Q1 (A)

Q2 (A)

Q3 (B)

Q4 (A)

Q5 (C)

Q6 (C)

Q7 (A)

Q8 (B)



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Hints & Solutions

Note: scan the QR code to watch video solution

Q1 Video Solution:



Q2 Video Solution:



Q3 Video Solution:



Q4 Video Solution:



Q5 Video Solution:



Q6 Video Solution:



Q7 Video Solution:



Q8 Video Solution:



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