LAKSHYA (JEE)

Chemical Kinetics

DPP-05

1. The rate of the reaction $2NO + Cl_2 \rightarrow 2NOCl$ is given by the rate equation rate = $k[NO]^2[Cl_2]$, the value of rate constant can be increased by
(A) Increasing the concentration of NO
(B) Increasing the concentration of the Cl_2
(C) Increasing the temperature
(D) Doing all of these

2. If the first order reaction involves gaseous reactants and gaseous products the unit of its rate is –
(A) atm. (B) atm – s
(C) atm – s^{-1} (D) $atm^2\ s^2$

3. The rate constant of a first order reaction is $4 \times 10^{-3}\ s^{-1}$. At a reactant concentration of 0.02 M, the rate of reaction would be –
(A) $8 \times 10^{-5}\ M\ s^{-1}$ (B) $4 \times 10^{-3}\ M\ s^{-1}$
(C) $2 \times 10^{-1}\ M\ s^{-1}$ (D) $4 \times 10^{-1}\ M\ s^{-1}$

4. Which one of the following statements for the order of a reaction is incorrect?
(A) Order can be determined only experimentally
(B) Order is not influenced by stoichiometric coefficient of the reactants
(C) Order of reaction is sum of power to the concentration terms of reactants to express the rate of reaction
(D) Order of reaction is always whole number

5. 75% of a first order reaction was found to complete in 32 min. When will 50% of the same reaction complete –
(A) 24 min (B) 16 min
(C) 8 min (D) 4 min

6. The rate constant for a first order reaction whose half life is 480 sec :
(A) $1.44 \times 10^{-3}\ sec^{-1}$
(B) $1.44 \times sec^{-1}$
(C) $0.72 \times 10^{-3}\ sec^{-3}$
(D) $2.88 \times 10^{-3}\ sec^{-3}$

7. Which of the following represents the expression for $\frac{3}{4}$th life of first order reaction?
(A) $\frac{k}{2.303}\log\frac{4}{3}$ (B) $\frac{2.303}{k}\log\frac{3}{4}$
(C) $\frac{2.303}{k}\log 4$ (D) $\frac{2.303}{k}\log 3$

ANSWERS

1. (C)
2. (C)
3. (A)
4. (D)
5. (B)
6. (A)
7. (C)

Note - If you have any query/issue

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