NEW STANDARD ACADEMY

SEMRI KOTHI SUPER MARKET, RAEBARELI

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1. Which of the following expression can be used to describe the instantaneous rate of the reaction?

   $2A + B \longrightarrow A_2B$

   a) $-\frac{1}{2}\frac{d[A]}{dt}$ b) $-\frac{d[A]}{dt}$

   c) $\frac{1}{2}\frac{d[A_2B]}{dt}$ d) $-\frac{d[A]}{dt}\cdot\frac{d[B]}{dt}$

2. For the reaction 2A+B → Products ,find the rate law from the following data.

Experiment	[A]/M	[B]/M	Rete/MS^{-1}
I	0.3	0.05	0.15
II	0.6	0.05	0.30
III	0.6	0.20	1.20

   What is the rate constant and order of the rection?

3. Consider the reaction 2A(g) + 2B(g) → 2C +D. From the following data, Calculate the order and rate constant of the reaction .

4.

Experiment	$[A]_0$/M	$[B]_0$/M	r_0/MS^{-1}
I	0.488	0.160	0.24
II	0.244	0.160	0.06
III	0.244	0.320	0.12

   Write the rate law of reaction.

5. Give the following data for the reaction : A+B → Product.

Experiment	[A]	[B]	Rate
I	1	2	4
II	2	2	4
III	2	4	16

   Which one is the rate law equation?

6. The dimensions of rate constant of a second order reaction involves:
   a) Time and concentration
   b) Neither time nor concentration
   c) Time only
   d) Concentration only

7. The rate constant of a reaction has same units as the rate of reaction.The reaction is of
   a) Zero order b) First order
   c) Second order d) none of these

8. The rate constant of n^{th}order has units
   a) $Litre^{1-n}\, mol^{1-n}\, sec^{-1}$
   b) $Mol^{1-n}\, litre^{1-n}\, sec$
   c) $Mol^{1-n^2}\ litre^{\ n^2}\ sec^{-1}$
   d) $Mol^{1-n}\, litre^{\ n-1}\ sec^{-1}$

9. On which of the following factors, the rate constant does not depend?
   a) Temperature b) Concentration
   c) Presence of catalyst d) Nature of reactants

10. If 'a' is the initial concentration and k is the rate constant of a zero order reaction the time for the reaction to go to completion will be

    a) $\frac{k}{a}$ c) $\frac{a}{k}$

    b) $\frac{a}{2k}$ d) $\frac{k}{2a}$