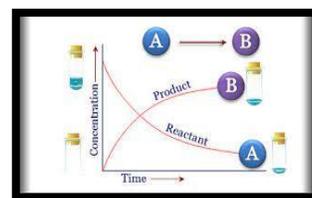


National Institute of Open Schooling
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Chapter 14: Chemical Kinetics
Worksheet-14

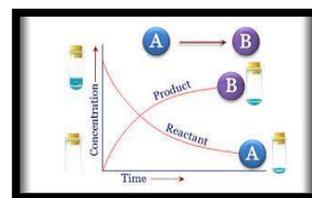


1. For a certain reaction large fraction of molecules have energy more than the threshold energy, yet the rate of reaction is very slow. Why?
2. All energetically effective collisions do not result in a chemical change. Explain with the help of an example.
3. What happens to most probable kinetic energy and the energy of activation with increase in temperature?
4. Describe how does the enthalpy of reaction remain unchanged when a catalyst is used in the reaction.
5. Higher molecularity reactions (viz. molecularity, 4 and above) are very rare. Why?
6. A radioactive element gets spilled over the floor of a room. Its half-life period is 30 days. If the initial activity is ten times the permissible value, after how many days will it be safe to enter the room?
7. For a reaction $\frac{1}{2}A \rightarrow 2B$ rate of disappearance of 'A' is related to the rate of appearance of 'B' by the expression?
8. For Which type of reactions, order and molecularity have the same value and why?
9. A catalyst is a substance that enhances the rate of a reaction. There are two types of catalysis i.e., homogeneous and heterogeneous. The heterogeneous catalysis is an important application in automobile catalytic converters.

Answer the following questions:

- (i) As a student of chemistry, what chemical process do you think occurs in the heterogeneous catalysis in the converters?
- (ii) Why the use of such catalytic converters in the vehicles is important?
- (iii) What environmental values are associated with the use of such converters?

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10. On one winter morning Sudha's mother received a phone call from a close relative stating that three of them would be coming over for lunch. Sudha's mother noticed that she did not have enough curd to serve the guests. Sudha, a class XII student suggested that her mother could warm the milk from the refrigerator or keep it under direct sunlight and curdle it.
- (i) Will it be helpful if her mother follows Sudha's suggestion? How?
 - (ii) Why is curdling of milk slower during winter?
 - (iii) What values are associated with Sudha's suggestion?

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