

PC RAY GROUP

VALUE BASED QUESTIONS WITH ANSWERS

CHEMICAL KINETICS

1. One day in the class, Rohit learnt that conversion of diamond to graphite is energetically favoured. He felt very concerned about it. If it was likely to happen, then it will cause a lot of financial loss to those people who have diamonds because their diamonds will be ultimately converted to graphite which will be of no value. He discussed it with the teacher. His teacher told him that it was unlikely to happen, though it was thermodynamically favourable.

a. In your opinion why it is not possible for a diamond to get converted into graphite through process is energetically favourable?

b. How do you relate these observations to values of daily life?

Answer. a. Although the conversion of diamond into graphite is energetically favourable yet it is unlikely to occur due to occurrence of very large activation energy barrier for this process to occur.

b. In day to day life, we find that sometimes it seems that is chaos, gloominess, dishonesty and crookedness everywhere but there are incidents which provide us moral courage to overcome to these negative forces and help us for positive thinking, happiness and wellbeing. We strive with greater efforts to create an atmosphere of honesty, responsibility, support, commitment, perseverance and achieve new heights of success.

2. A catalyst is a substance which increases the rate of a reaction without undergoing any change in itself. A small amount of the catalyst is sufficient to bring large change in the rate of a reaction. It takes part in the reaction but is regenerated at the end of the reaction.

a. How does a catalyst increases the rate of a reaction?

b. In society how do catalytic elements play their role in strengthening or weakening the social value?

Answer. a. A catalyst increases the rate of a reaction by lowering the potential energy barrier and providing a alternate path which requires less activation energy.

b. In our society we find certain people to act as catalysts in certain incidents. Sometimes we find that person who has negative thinking and does not like peaceful atmosphere, add fuel to the fire whenever there is a clash between two groups of people. He provokes indirectly one group of people against the other. At the same time there are people who like peace and harmony in the society. Even if there is a little problem in the people in society, they try to sub side the issues by their understanding and goodwill.

3. Coal does not burn by itself in air but once initiated by flame, it continues to burn. In our surroundings we can observe many processes in day to day life of such type. It is blissful

to existence of life on earth otherwise there would have been a great harm to civilisation as fuels would have burnt by themselves and explosives could not be stored safely.

a. What reason do you assign for non-occurrence of such processes at room temperature?

b. How do you find values linked with such processes?

Answer. a. The reason for non-occurrence of such processes is the existence of activation energy barrier. The occurrence of such process requires a very high activation energy which is not available at room temperature.

b. Our society is facing a lot of problems which are major hurdles in our progress. People have innovative ideas to solve such problems. Lack of proper atmosphere, infrastructure and orientation hinders their ideas. When they get proper channel and platform they exploit their ideas to get rid of evils facing our society. Once the process starts, other people come forward with innovative ideas and this is how progress begins which achieves greater heights resulting in upliftment of society.