

Biology - FSC Part 1 Biology English Medium Chapter 3 Preparation

Q1. How does high temperature effect enzyme activity?

Ans 1: The rate of enzyme controlled reaction may increase with increase in temperature but up to a certain limit. All enzymes can work at their maximum rate at a specific temperature called optimum temperature.

Heat provide activation energy and therefore chemical reaction are accelerated at high temperature.

- Q2. What is induced fit model of enzyme action?
 - **Ans 1:** On the basic of new evidences ,Koshland proposed modified form of lock and key model. This is known as induced fit model. He argued when a substance combines with an enzyme. It induced changes in the structure enables the enzyme to perform its catalytic activity more efficiently. This shows that enzymes are not rigid and flexible but are capable of considerable internal movement.
- Q3. Distinguish between prosthetic group and Co-enzyme.
 - Ans 1: Prosthetic Group: If the non proteins parts are covalently bonded it is known as prosthetic group.
 - **Ans 2:** Co.Enzyme: If co factor is loosely attached to the proteins part it is called co enzyme, It is closely related to vitamins which represent the essential raw material from which co enzymes are made.
- Q4. Give the role of pH in enzyme action. Give the optimum pH values for any two enzyme actions.
 - Ans 1: Optimum pH for pepsin is 2.00 and for sucrose is 5.50.
- Q5. Define inhibitors with example.
 - **Ans 1:** An inhibitors is an chemical substance that can react with the enzyme but is not transferred in to product and thus block the active site temporarily or permanently. For Example: poisons like cyanide, antibodies, anti metabolites, some drugs and pesticides etc.
- Q6. Define apoenzyme and cofactor.
 - Ans 1: Apoenzyme: The proteins of enzyme is called apoenzyme or enzyme without non protein part is called apoenzyme.
 - **Ans 2:** Cofactor: Cofactor is non proteins part of enzyme, which is essential for the proper functioning of the enzyme. The cofactor usually acts as bridge. Some enzyme use metals ions as cofactor.
- Q7. At high substrate level, rate of enzyme action is not increased. Give reason.

- **Ans 1:** If the enzyme concentration is kept constant and the amount of substrate is increased a point is reached when further increase in the substrate s does not increase the rate of reaction any more, This is because at high substrate level all the active sites of enzyme are saturated with example.
- Q8. Give the optimum pH values of enzyme pepsin and pancreatic lipase.
 - **Ans 1:** Optimum pH for pepsin is 2.00 and that for pancreatic lipase is 9.00.
- Q9. Define active site of enzyme and write only names of its two regions.
 - **Ans 1:** An enzyme and its substrate react with each other through definite charge bearing site called active site. The active site of an enzyme is a three dimensional cavity bearing a specific charge by which the enzyme reacts with its substrate. Active sites have two regions:
 - 1.Binding Site
 - 2.Catalytic site
- Q10. Define optimum temprature, Give optimum temprature of human.
 - **Ans 1:** All enzymes can work at their maximum rate at a specific temperature called as optimum temperature, For enzymes of human body 37 Degree is the optimum temperature.