Biology - FSC Part 1 Biology English Medium Chapter 3 Preparation

Q1. How enzyme catalyze series of chemical reaction?

Ans 1: In certain cases enzymes act in a series of chemical reactions in a particular order to complete metabolic pathway such as respiration or photosynthesis.The successive enzymes containing these reactions are normally present together in a precise order of reaction.

Q2. Differentiate between apoenzyme and holoenzyme.

Ans 1: Apoenzyme: The proteins part of enzyme is called apoenzyme or enzyme without non protein part is called apoenzyme.

Ans 2: Holoenzyme: A completely enzyme including co factor is called holoenzyme.

Q3. In what way,substrate concentration affects the rate of reaction?

Ans 1: 1.At low substrate concentration is kept constant and the amount of substance is increased,a point is reached when a further in the substrate does not increased the rate of reaction any more.This is because at high substrate level all the active sites of enzyme are saturated with substrate,After this the rate of enzyme reaction becomes steady and addition of substrate will not have the positive effect.

Q4. 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.

Q5. 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.

Q6. Who proposed induced fit model of enzyme action?

Ans 1: Koshland's proposed induced fit model.

Q7. Differentiate between reversible and irreversible inhibitors.

Ans 1: Reversible inhibitors: They form weak linkages with the enzyme.Their effect can be neutralized completely or partly by an increase on the concentration of the substrate.

Ans 2: Irreversible inhibitors: Check the reaction rate by occupying the active site or destroying the globular structure permanently.They occupy the active site by forming covalent bonds or they may physically block the active site.

Q8. Compare competitive and non competitive inhibitors.

Ans 1: Competitive inhibitors:Such inhibitors have structural similarity with the substrate both of which compete for same active sites of the enzyme.Because of the structural similarity with the substrate they may be selected by the binding sites,

Ans 2: Non Competitive inhibitors:They form enzymes inhibitors complexes at a point other than the active site.They alter the structure of the enzyme in such a way that even if the genuine substrate binds the active site catalysis fails to take place e.g poisons/.

Q9. 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.

Q10. What is role of enzyme concentration on the rate of enzyme action?

Ans 1: The rate of reaction depends upon directly on the amount of enzyme present at a specific time at unlimited substrate concentration.If the amount of enzyme is increased by two fold the reaction is doubled.
