

# **INTER SCIENCE COLLEGE IMPORTANT QUESTIONS SURFACE CHEMISTRY.**

\_\_\_\_\_. By M.K Dubey

Q. Write three characteristics of enzyme catalysis.

Ans. Following are characteristics of enzyme catalysis.

1. Highly efficient.

\_One\_Enzyme can catalyses one million of reactions per minute. This show high efficiency of enzymes.

2. Highly specific.

Enzymes are highly specific in function .

This means that a particular enzyme can catalyse a specific reaction only. For example , both sucrose and maltose are disaccharides. Enzyme invertase hydrolyse sucrose into glucose and fructose while maltase converts maltose into glucose.

3.Highly active under optimum

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temperature.

Enzymes show maximum activity at particular temperature and this is called optimum temperature of enzymes.

For enzymes optimum temperature is 298 K to 310K.

4. Highly active under optimum PH.

Particular PH at which enzymes show maximum activity is called optimum PH.

For enzymes optimum PH is 5 to 7 .

Enzymes show maximum activity at PH 7.4.

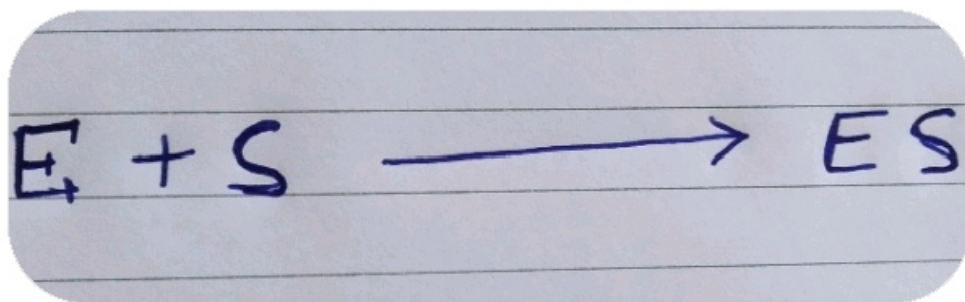
Q.. Describe mechanism of enzymes catalysis.

Ans .. Enzymes form colloidal solution in water . The colloidal surface of enzymes has many pores and cavities of characteristic shape . These cavities have some active functional groups such as  $-OH$ ,  $-COOH$ ,  $-SH$  etc and these cavities are called active sites of

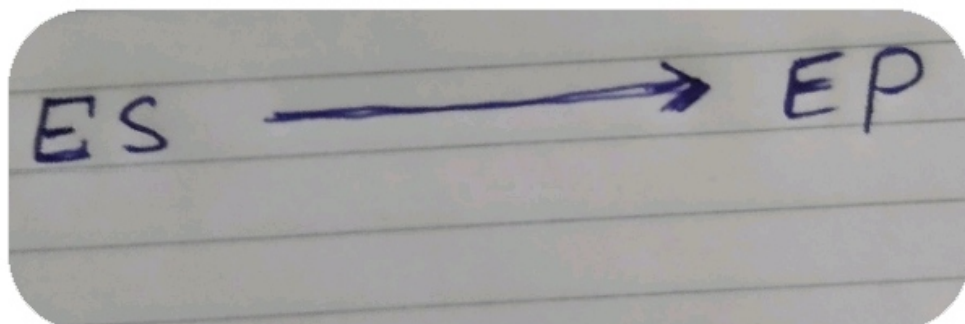
enzymes. Substrate molecules having similar shape to cavities, fit into cavities just like a key fit into a lock and form enzyme substrate complex. This complex changed into enzyme product complex.

Following are steps .

1. Formation of enzyme\_substrate complex.



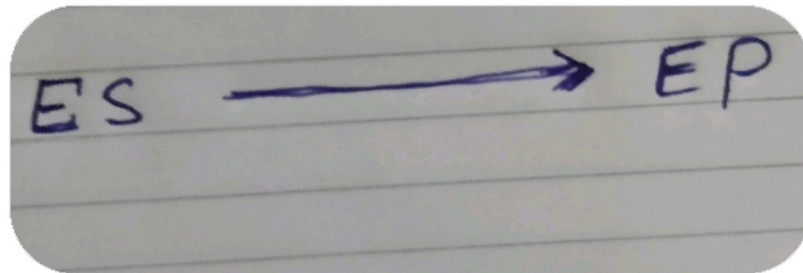
2. Formation of enzyme product complex.



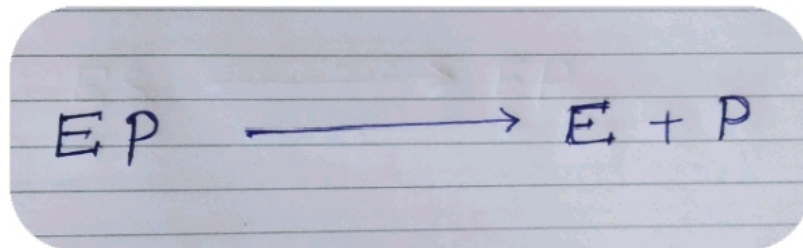
3. Decomposition of enzyme product complex and release of enzyme and product.



2. Formation of enzyme product complex.



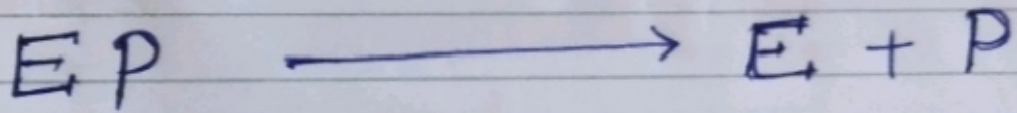
3. Decomposition of enzyme product complex and release of enzyme and product.



E=Enzyme. S=Substrate

ES=Enzyme-Substrate complex.

EP= Enzyme-Product complex.



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