

Classification of Enzymes

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The following are the two different classifications of enzymes available -

(i) Older classification

(ii) Modern classification

(i) Older classification :-

Traditionally enzymes are broadly classified into two categories -

(A) Hydrolysing enzymes

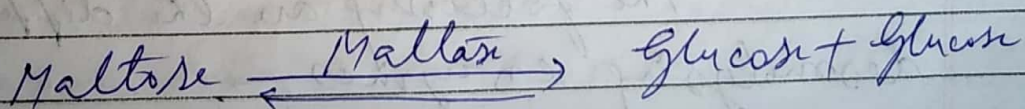
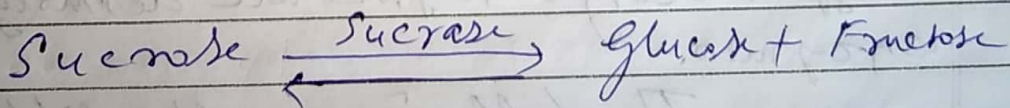
(B) Desmolysing enzymes

(A) Hydrolysing enzymes :-

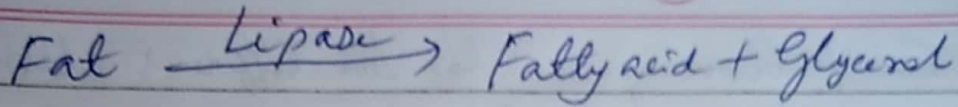
They are those enzymes which catalyse biochemical reactions by addition of water.

The following are the four different types of hydrolysing enzymes -

(a) Carbohydrases - They catalyse either split of long chain sugar into smaller chain sugars or they can catalyse the formation of a long chain sugar with smaller chain sugars.

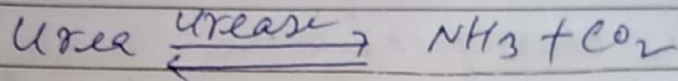


(b) Esterase :- They catalyse the formation and decomposition of compounds having ester linkage or bond.



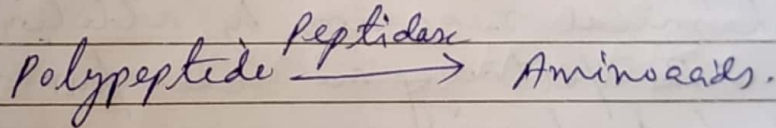
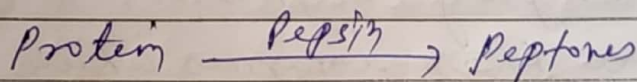
(c) Amidase:-

These enzymes catalyse either the synthesis or splitting of amides.



(d) Proteolytic enzymes:-

They catalyse either hydrolysis of protein or its derivatives.

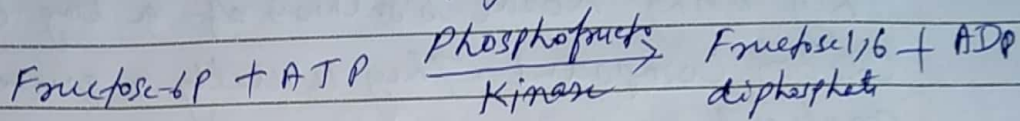
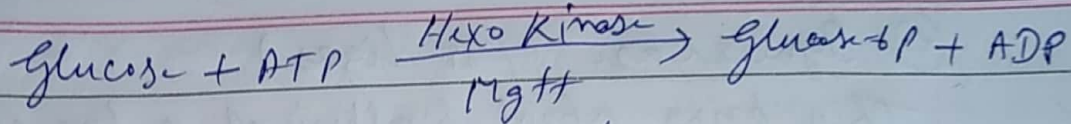


(B) Desmolysing enzymes:-

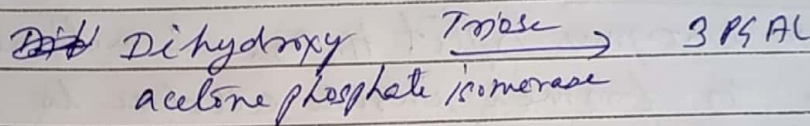
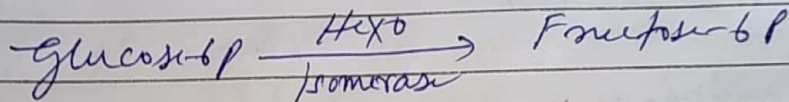
These enzymes catalyse reactions other than hydrolytic reactions. Most of the respiratory enzymes are desmolysing enzymes.

The following are the different desmolysing enzymes-

(a) Transphosphorylase:- They catalyse transfer of phosphate radical from one compound to ~~its~~ others.

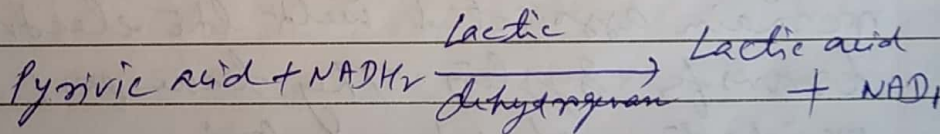
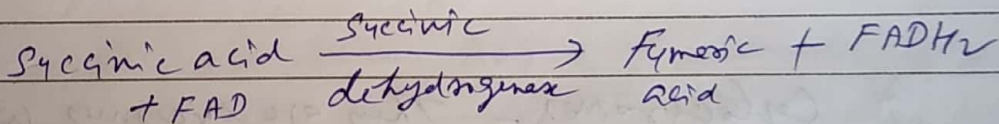


(b) Isomerases :- They catalyse isomerisation rxns.



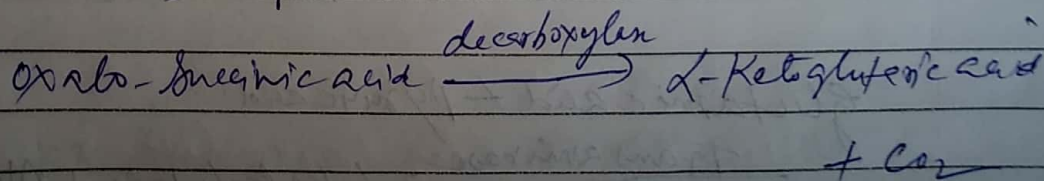
(c) Dehydrogenases :-

They catalyse transfer of hydrogen (i.e. oxidation reduction rxn) from a compound -



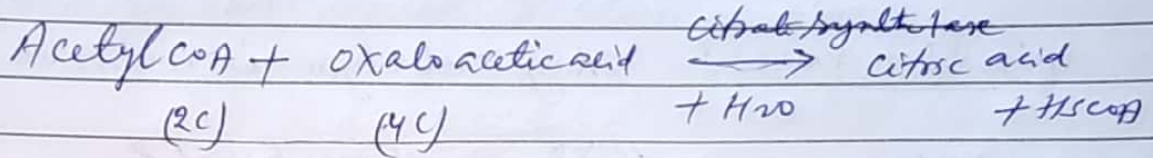
(d) Decarboxylase -

They catalyse decarboxylation (either transfer or removal) of CO_2 .



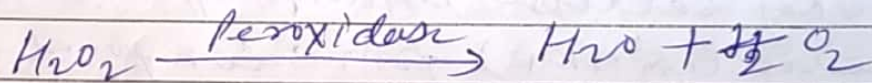
(c) Synthetase (or ligase)

They bring about synthesis of a long chain carbon compound. They usually require water molecule.



(d) Peroxidase :-

These enzymes split H_2O_2 . Sometimes this H_2O_2 is formed inside cell due to some metabolic activities. This H_2O_2 has injurious effect on cell, thus soon after its formation it splits into H_2O and $\frac{1}{2} \text{O}_2$.



(e) Cytochromes - They are enzymes which remain associated with the electron transfer systems. They take part in oxidative phosphorylation.

(f) Transaminase - They bring about transfer of amino group ($\text{CH}_2\text{-NH}_2$) from one amino acid to a keto acid.

