2. **Answer the following question in about 150 – 200 words:**

Briefly describe the character sketch of the author (known in the book as 'I').

(i) Enzymes are more sensitive ~~even~~ even in small change of temperature, pressure and pH value.

(ii) Enzymes are much efficient than inorganic Catalyst.

(End PDF) Kinds of Enzymes: Date 06/02/2024

KINDS OF ENZYMES — Enzymes are mainly classified into Six groups: —

1. OXIDOREDUCTASES: — These enzymes are necessary for oxidation and reduction reactions by transfer of hydrogen from one molecule to another. These enzymes are mainly of two types. —

(i) OXIDASE: — These are necessary for transfer of hydrogen from one molecule of oxygen.
e.g — Cytochrome oxidase.

(ii) DEHYDROGENASES: — These are necessary for transfer of hydrogen from one molecule to Coenzyme like NAD FAD etc.
eg. — Succinic dehydrogenase.

2. TRANSFERASE: — These enzymes are necessary for transfer of any Chemical group from one substrate to another. eg — phosphatransferase.

3. HYDROLASES: — These enzymes are necessary for hydrolysis reactions i.e breakdown of large molecules by addition of water. eg: —
Amylase, Lipase.

(b) Rain gives back life to its own origin – the earth and to all its beings. Do you agree? Do you feel that even humans should contribute their part by taking care of Mother Nature and being responsible towards her? Elaborate your views on this topic with reference to the poem, **'Song of the Rain'**.

4. LYASES :— These enzymes are necessary for addition or removal of chemical groups to a double bond. eg:— Pyruvic decarboxylase.

5. ISOMERASES :— These enzymes are necessary for rearrange the atom in a molecule, i.e isomerization eg:— phosphohexso isomerase.

6. LIGASE OR SYNTHETASE:— These enzymes are necessary for join two molecules together eg:— DNA Ligase.

## MODE OF ENZYME ACTION

We describe the mode of enzyme action with the help of two reactions:—

(i) ENZYMES + SUBSTRATE ⟶ ENZYME SUBSTRATE COMPLEX.

(ii) ENZYME SUBSTRATE COMPLEX ⟶ ENZYME + SUBSTRATE 1 + SUBSTRATE 2.

At first enzymes reacts with particular substrate and converts into enzyme substrate complex after that enzyme comes out in unchanged form but substrate divided

## Value-based Questions (VBQs):

**3. Answer the following questions in 80 – 100 words each:** (4)

(a) Rain is a symbol of life as it regenerates and rejuvenates. What are the values shown by the rain? How do these values spread happiness across the globe? Discuss about this topic with reference to the poem, 'Song of the Rain'.

into Compounds. Two hypotheses regarding the mechanism of Enzymes action are as follows :— (1) LOCK AND KEY MODEL :— This model of enzyme action was proposed by Emil Fischer in 1890. The main features of this model are as follows :—

(i) In this theory lock acts as substrate and key acts as enzyme.

(ii) As a right key opens a right lock similarly an enzyme can acts with particular substrate.

(iii) A particular lock can be opened by a particular key specially designed to open it. Similarly enzymes have active sites where as particular substrate can only be attached.

(2) INDUCED FIT MODEL :— This model was proposed by KOSHLAND (1966). According to this model the active sites of some enzymes are not rigid. hence enzymes changes shape complementory to that of substrate only after the substrate is bound.

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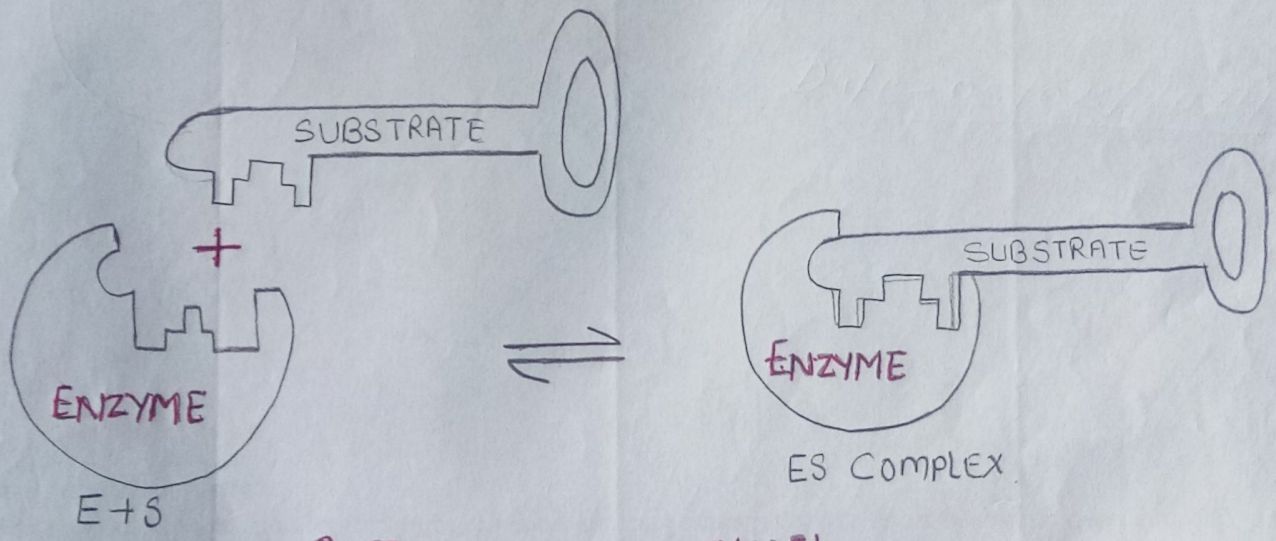
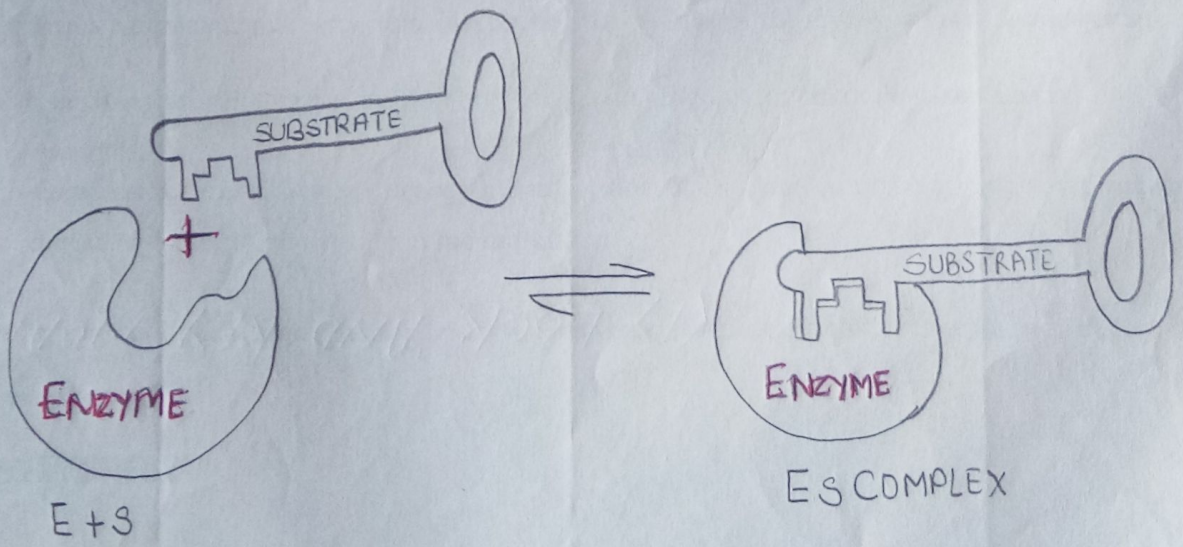
## 1. Lock And Key model




## 2. Induced Fit Model

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