

MASTER MENTORS TUITION HUB

GRADE : X

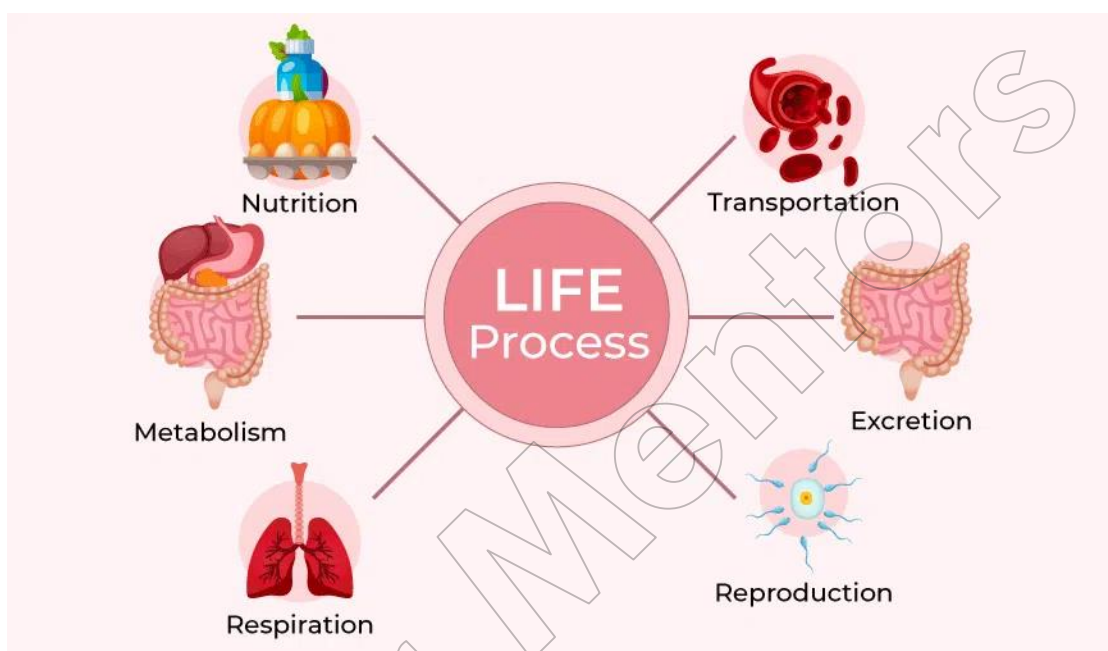
SUBJECT : BIOLOGY

(NOTES , KEY CONCEPTS , MIND MAPS)

INTRODUCTION

- An organism goes through life processes in order to survive. These are the essential tasks that must be completed for an organism to survive. These consist of growth, breathing, movement, reproduction, nourishment, excretion, response to outside stimuli, and mobility.

KEY CONCEPTS



NUTRITION

- The process of acquiring food that is needed for nourishment and sustenance of the organism is called nutrition.
- The two primary forms of nutrition are heterotrophic and autotrophic.

Certain bacteria, algae, and plants can all produce food on their own. Through photosynthesis or chemosynthesis, respectively, organisms use light energy or chemical energy to make their own sustenance.

Bacteria, fungi, and mammals may all sustain themselves heterotrophically. They get their energy from organic materials, such as when animals eat plants or other creatures.



AUTOTROPHIC NUTRITION

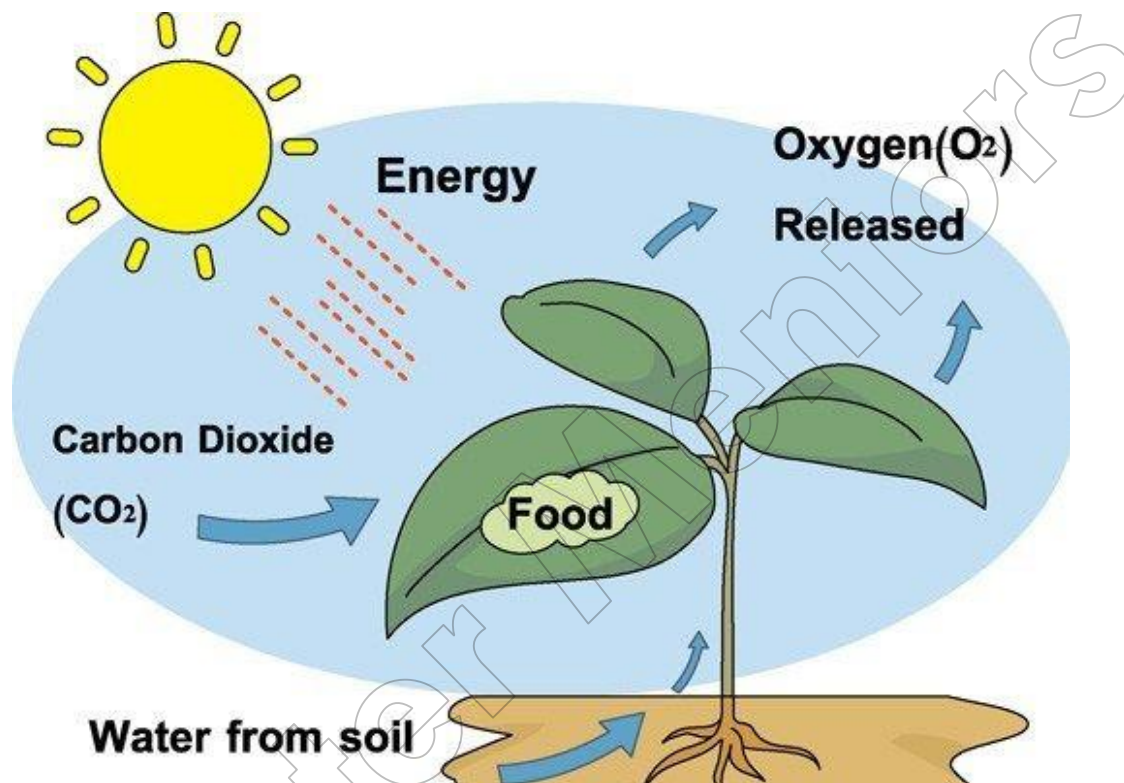
The autotrophic organism obtains the carbon and energy it requires through photosynthesis.

The process by which autotrophs take in components from their surroundings and convert them into forms of energy that may be stored is known as autotrophic nutrition.

This material, which is absorbed as carbon dioxide and water, is converted into carbohydrates when sunshine and chlorophyll are present.

Carbohydrates are utilized by the plant as an energy source. The plant uses starch, which serves as its internal energy source.

When not in use, plants can also store this energy.



PHOTOSYNTHESIS

One crucial process that forms food is photosynthesis.

With the help of water and sunlight, plants produce food that feeds both themselves and other living things.

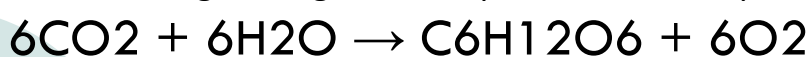
The green sections' chlorophyll absorbs light energy.

Hydrogen and oxygen are separated from water using this light energy.

After that, carbon dioxide is reduced by hydrogen to produce carbohydrates, usually glucose.

Photosynthesis depends on chlorophyll, and stomata need it to help them take in carbon dioxide.

The following is the general response that takes place during photosynthesis:



HETEROTROPHIC NUTRITION

All animals and non-photosynthetic plants are classified as heterotrophs since they are unable to prepare food. So these organisms resort to other various forms of nutrition. Hence, from an ecological perspective, heterotrophs are always secondary or tertiary consumers in a food chain.

Humans and other vertebrates rely on converting organic, solid or liquid food into energy. Other organisms such as fungi rely on converting dead organic matter into nutrients. In essence, heterotrophs break down complex food into its readily usable constituents.



In nature, organisms exhibit various types of heterotrophic nutrition. They are as follows:

- **HOLOZOIC NUTRITION**
- **SAPROPHYTIC NUTRITION**
- **PARASITIC NUTRITION**

HETEROTROPHS

A heterotroph is an organism that eats other plants or animals for energy and nutrients. The term stems from the Greek words *hetero* for “other” and *trophe* for “nourishment”.

Heterotrophs are known as consumers because they consume producers or other consumers. Dogs, birds, fish, and humans are all examples of heterotrophs.

