

3.3 CONTRIBUTIONS OF PHOTOSYNTHESIS

Introduction

Photosynthesis is one of the most important biological processes on Earth. It supports life by producing food and maintaining environmental balance.

Food Production

Green plants manufacture glucose during photosynthesis. This food becomes the primary energy source for plants and other organisms in food chains.

Oxygen Supply

During photosynthesis, oxygen gas is released into the atmosphere. Most living organisms require oxygen for aerobic respiration.

Carbon Dioxide Balance

Plants absorb carbon dioxide from the atmosphere during food production. This process helps regulate atmospheric carbon dioxide concentration.

Reduction of Global Warming

Excess carbon dioxide contributes to global warming. By absorbing carbon dioxide, green plants reduce greenhouse effects and help stabilize climate conditions.

Energy Storage

Photosynthesis converts solar energy into chemical energy stored in glucose and starch. This stored energy supports biological activities.

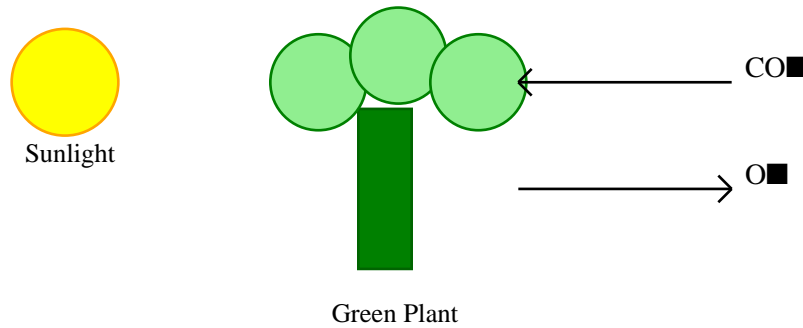
Ecological Importance

Photosynthesis supports ecosystem stability by maintaining food webs and energy flow among organisms.

Economic Importance

Agriculture, forestry, and many industries depend directly or indirectly on photosynthesis.

Figure: Role of Photosynthesis in Gas Balance



Important Contributions

Contribution	Importance
Food Production	Provides nutrients and energy
Oxygen Release	Supports aerobic respiration
CO ₂ Reduction	Maintains atmospheric balance
Energy Storage	Stores solar energy chemically
Climate Regulation	Helps reduce global warming

Summary

Photosynthesis supports life by producing food, releasing oxygen, and balancing atmospheric gases. The process also reduces carbon dioxide concentration and helps control global warming. Energy stored during photosynthesis sustains ecosystems and human activities.

Questions and Answers

Why is photosynthesis important?

It produces food and oxygen for living organisms.

Which gas is absorbed during photosynthesis?

Carbon dioxide is absorbed.

How does photosynthesis reduce global warming?

It lowers atmospheric carbon dioxide levels.

What form of energy is stored in glucose?

Chemical energy is stored in glucose.

Why are green plants called producers?

They prepare their own food.

Study Notes

- Photosynthesis supports nearly all life forms.
- Oxygen released is essential for respiration.
- Plants absorb atmospheric carbon dioxide.
- Food chains begin with producers.
- Solar energy becomes stored chemical energy.
- Forests help reduce greenhouse effects.
- Photosynthesis stabilizes ecosystems.
- Agricultural productivity depends on photosynthesis.