

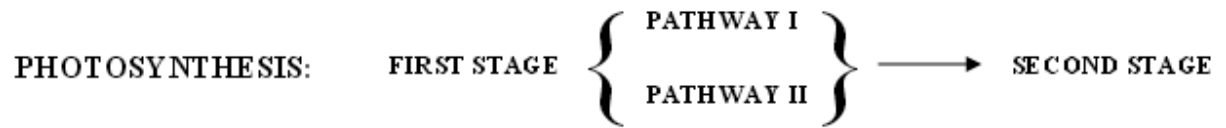
Name: _____

Q.1

- (i) In leaf cells, which chemical traps light energy for photosynthesis?
- (ii) Water for photosynthesis enters the roots of plants by osmosis.
What is meant by *osmosis*?
- (iii) During photosynthesis water is split into three products.
 - 1. Name **each** of these **three** products.
 - 2. Name the stage of photosynthesis during which water molecules are split.
- (iv) Carbon dioxide (CO₂) is also needed for photosynthesis.
Where does CO₂ enter the leaf?
- (v) A market gardener wants to increase the vegetable yield in his greenhouses.
Suggest **two** ways he may achieve this.

(27)**Q.2**

- (a) What does **ATP** stand for?
Write the **equation** of how it is formed.
What does ATP give to a cell?
(9)
- (b) The first stage of photosynthesis is known as the light stage. It involves energising electrons and moving them along two different pathways.
 - (i) Write a brief description of what happens along **both** of these pathways.
 - (ii) What happens to the **products** of the **light**-dependent stage?
(27)
- (c) The effect of changing light intensity or carbon dioxide concentration on the rate of photosynthesis may be investigated by using the pondweed *Elodea*.
Answer the following questions.
 - (i) Why is a water plant rather than a land-based plant used?
 - (ii) How is the water temperature kept constant?
 - (iii) Name one possible source of carbon dioxide in pond water.
 - (iv) Explain how light intensity **or** carbon dioxide can be varied.
 - (v) Each time this is varied a precaution is taken. What is this precaution **and** why is it necessary?
(24)

Q.3

- (i) Give the name of the first stage.
- (ii) In the first stage, pathways I and II relate to the passage of energised electrons.
 1. Explain what happens to these electrons in pathway I.
 2. Describe the events of pathway II.
- (iii) Give the name of the second stage.
- (iv) Explain why the second stage is given the name referred to in part (iii).
- (v) Give **one** reason why the second stage cannot happen without the first stage.
- (vi) Outline the major events of the second stage.

(30)