

Section D Self-Test Answers

Question 1

Define photosynthesis

Answer

Photosynthesis is the process where plants synthesise carbohydrate from water and carbon dioxide using light as the energy source.

Question 2

What is the chemical compound responsible for photosynthesis and where is this compound found in green plant cells?

Answer

Chlorophyll is the compound responsible for photosynthesis. Photosynthesis itself occurs in organelles known as chloroplasts. The chlorophyll pigments are attached to sheet-like lamellar membrane structures of the chloroplast which are called thylakoids. Stacks of these thylakoids are collectively known as grana.

Question 3

Which two of the following reactions occur during the light cycle of photosynthesis?

Light is used to form NADP from ADP

Light is used to form ATP from ADP

Light oxidises the electron-carrier molecules

Light reduces the electron-carrier molecules

Answer

Light is used to form ATP from ADP

Light reduces the electron-carrier molecules

Question 4

Which two of the following describe reactions that occur during the dark cycle of photosynthesis?

ATP is used to link carbon dioxide to an NADPH

ATP is used to link carbon dioxide to an organic molecule

NADPH oxidises the newly bound carbon atom to the oxidation level of a simple sugar

NADPH reduces the newly bound carbon atom to the oxidation level of a simple sugar

Answer

ATP is used to link carbon dioxide to an organic molecule

NADPH reduces the newly bound carbon atom to the oxidation level of a simple sugar