1.19 Photosynthesis: 10-minute Pack

AQA 8464 · Calculator allowed · about 10 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Photosynthesis takes place inside plant cells, in a structure containing a green pigment.

(a) Name the organelle in a plant cell where most photosynthesis takes place. **(1)**

(b) Name the green pigment, found inside chloroplasts, that absorbs light energy for photosynthesis. **(1)**

(c) Give two ways that a palisade mesophyll cell is adapted for photosynthesis. **(2)**

(Total for Question 1 is 4 marks)

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2 This question is about the leaf tissue that is specialised for photosynthesis.

(a) Name the tissue layer in the leaf that contains palisade cells. **(1)**

(b) Give one feature of palisade cells that helps them absorb light. **(1)**

(Total for Question 2 is 2 marks)

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3 A student measures net photosynthesis by measuring mass change of a plant in light and dark conditions over 24 hours. The plant lost 2.0 g in darkness and gained 4.5 g in light. Calculate the net gain due to photosynthesis over 24 hours.

(a) Calculate net gain and include unit. **(2)**

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(Total for Question 3 is 2 marks)

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Mark scheme · 1.19 Photosynthesis: 10-minute Pack

Question 1

(a) chloroplast cao **B1**

(a) Answer: Chloroplast.

(b) chlorophyll cao **B1**

(b) Answer: Chlorophyll.

(c) contains many chloroplasts, oe **B1**

(c) is a tall, narrow (column-shaped) cell positioned near the top (upper surface) of the leaf, so many cells can be packed into the region that receives most light, oe **B1**

(c) Answer: Any two of: contains many chloroplasts; is a tall, narrow cell packed near the top of the leaf, where most light is absorbed.

Question 2

(a) palisade mesophyll cao **B1**

(a) Answer: Palisade mesophyll

(b) contain many chloroplasts or are tall and packed near the upper surface of the leaf, oe **B1**

(b) Answer: Contain many chloroplasts

Question 3

(a) subtracts respiration loss from light gain: 4.5 - 2.0 **M1**

(a) 2.5 g cao **A1**

(a) Answer: 2.5 g

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