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90928



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Tick this box if there is no writing in this booklet.

Level 1 Biology 2020

90928 Demonstrate understanding of biological ideas relating to the life cycle of flowering plants

2.00 p.m. Thursday 26 November 2020
Credits: Four

Achievement	Achievement with Merit	Achievement with Excellence
Demonstrate understanding of biological ideas relating to the life cycle of flowering plants.	Demonstrate in-depth understanding of biological ideas relating to the life cycle of flowering plants.	Demonstrate comprehensive understanding of biological ideas relating to the life cycle of flowering plants.

Check that the National Student Number (NSN) on your admission slip is the same as the number at the top of this page.

You should attempt ALL the questions in this booklet.

If you need more space for any answer, use the space provided at the back of this booklet and clearly number the question.

Check that this booklet has pages 2–8 in the correct order and that none of these pages is blank.

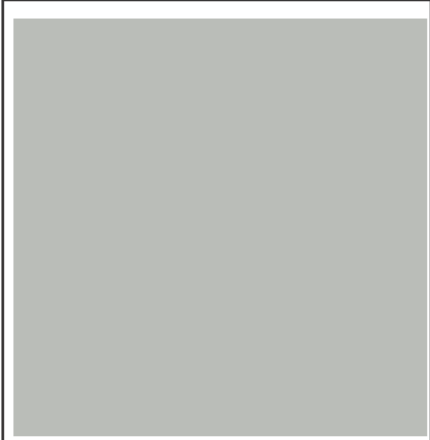
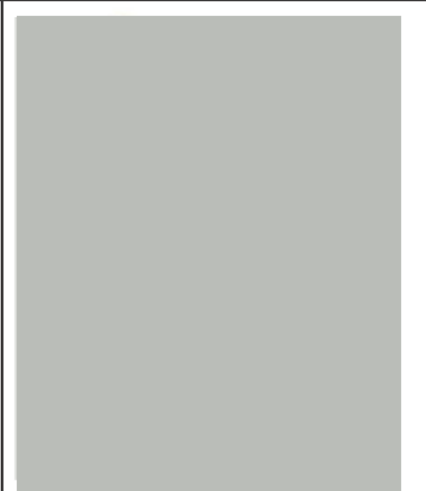
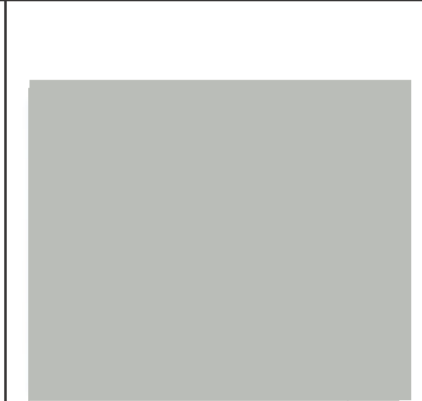
YOU MUST HAND THIS BOOKLET TO THE SUPERVISOR AT THE END OF THE EXAMINATION.

TOTAL

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QUESTION ONE: SEED GERMINATION AND DISPERSAL

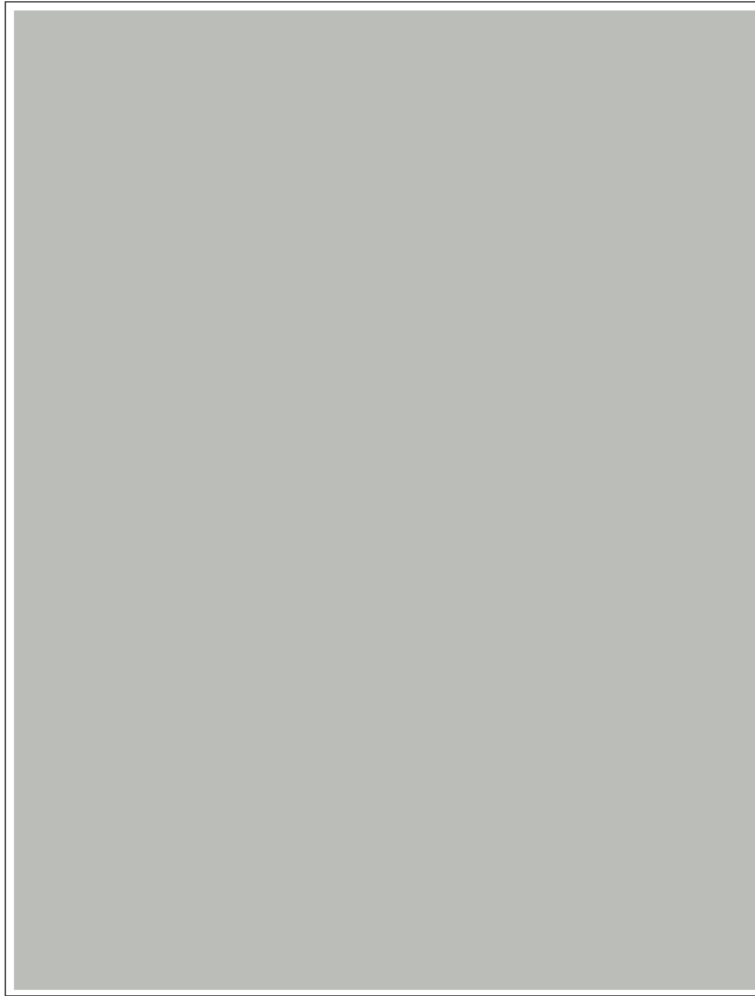
Seeds play a key part in the life cycle of flowering plants.

		
<p style="text-align: center;">Bean seed</p> <p style="text-align: center;">Adapted from: pmgbiology.com/tag/plumule/</p>	<p style="text-align: center;">Soy bean seedling</p> <p style="text-align: center;">Source: www.researchgate.net/figure/Figure12-Annotatedanatomyofa15day-oldGlycinemaxElenaseedlingnotet_he_fig9_270339851</p>	<p style="text-align: center;">Dandelion seed dispersal</p> <p style="text-align: center;">Source: www.scientificamerican.com/article/gone-with-the-wind-plant-seed-dispersal/</p>

Discuss the role of seeds in the life cycle of a flowering plant.

In your answer:

- describe the function of THREE parts of a seed
- explain how seed dispersal and germination are affected by environmental factors
- discuss the importance of seeds to the life cycle of flowering plants.

QUESTION TWO: PRIMARY AND SECONDARY GROWTHASSESSOR'S
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Primary and secondary growth in a flowering plant stem

Adapted from: <https://www.britannica.com/science/primary-phloem>

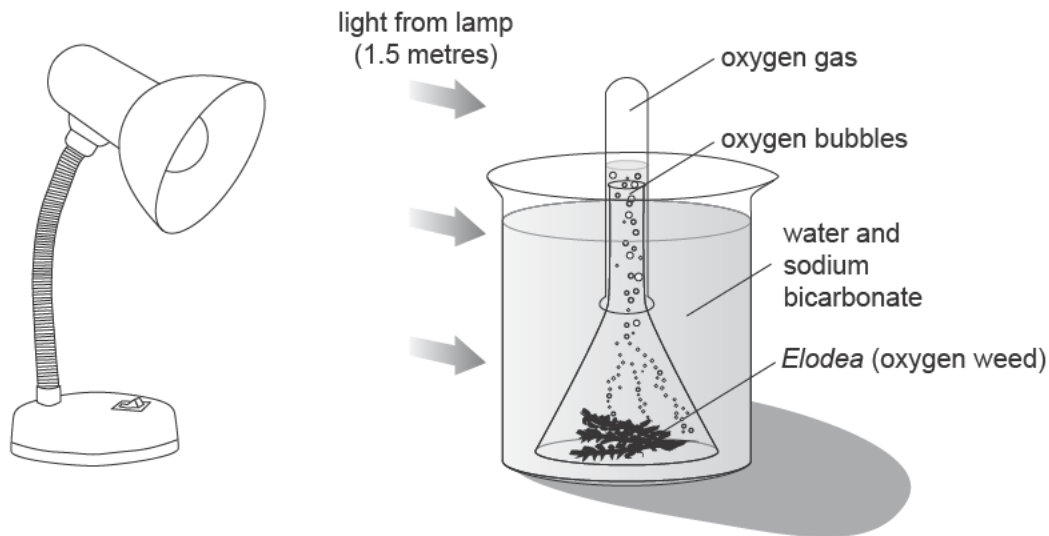
Discuss the processes of primary and secondary growth in a flowering plant, and the importance of both types of plant growth to the life cycle of the plant.

In your answer:

- describe the environmental factors that plants need to grow
- describe the processes of primary growth and secondary growth
- explain the function of TWO different cells or tissues that develop in primary and secondary growth
- discuss the importance of primary and secondary growth in the life cycle of a flowering plant.

QUESTION THREE: PHOTOSYNTHESIS

Students set up the experiment below to investigate the process of photosynthesis. The plants they used were *Elodea* or oxygen weed, which lives in freshwater. They were using the rate that oxygen gas bubbles were produced by the *Elodea*, as a measure of the rate of photosynthesis.



Adapted from: https://blogs.glowscotland.org.uk/gc/hyndsecbio5u1hwrk/mcq-1_6c-photosynthesis/

Discuss the importance of photosynthesis to the life cycle of the flowering plant, and the impact of changing environmental factors on the rate of photosynthesis.

In your answer:

- describe and explain the process of photosynthesis
- explain the importance of photosynthesis to the life cycle of a flowering plant
- discuss the impact on the rate of photosynthesis of changing the environmental factors of light intensity, carbon dioxide availability, and temperature.

**Extra space if required.
Write the question number(s) if applicable.**

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QUESTION
NUMBER

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