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Level 1 Biology, 2018

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

9.30 a.m. Tuesday 27 November 2018
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 2–12 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: PHOTOSYNTHESIS

The process of photosynthesis is essential to the life cycle of a flowering plant. Photosynthesis occurs mainly in the leaf. The rate of photosynthesis is affected by a number of environmental factors. Study the information below to help you answer the question.

Figure 1: The effects of environmental factors on the rate of photosynthesis

www.juntadeandalucia.es/averroes/centros-tic/18010185/helvia/aula/archivos/repositorio/0/149/html/Unidad2_bilingue/Natural_Sciences/plantkfungik/01plants/plants05nutri.html

Figure 2: Cross section of a leaf

http://www.tutorvista.com/biology/cross-section-of-a-leaf-diagram

Discuss the importance of environmental factors and the structure of a leaf in allowing the process of photosynthesis to occur.

In your answer:

- describe the process and the purpose of photosynthesis
- explain how environmental factors can affect the rate of photosynthesis
- discuss how environmental factors and the structure and function of the leaf work together to maximise the rate of photosynthesis.

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There is more space for your answer to this question on the following page.

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The examination continues on the following page.

QUESTION TWO: POLLINATION AND FERTILISATION

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The flower is the reproductive organ of a flowering plant. The diagram below shows some of the structures of an apple flower. Two important processes that occur in the reproduction of flowering plants are pollination and fertilisation.

Figure 3: Cross section of an apple flower

www.dreamstime.com/stock-illustration-anatomy-apple-flower-parts-detailed-diagram-cross-section-useful-study-botany-science-education-image89612668

Discuss how and why pollination and fertilisation occur in flowering plants.

In your answer:

- describe the processes of pollination and fertilisation as they occur in a flowering plant
- explain the importance of pollination and fertilisation to the life cycle of a flowering plant
- discuss how the structures of a flower and their functions are involved in processes of pollination and fertilisation to ensure maximum success.

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QUESTION THREE: PRIMARY AND SECONDARY GROWTH

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Flowering plants grow through the processes of primary growth and secondary growth.

Figure 4: Primary and secondary growth in a plant

www.slideshare.net/mpattani/biology-in-focus-chapter-28

Discuss how environmental factors affect the processes of primary and secondary growth of a flowering plant, and the importance of both types of plant growth to the life cycle.

In your answer:

- describe the processes of primary growth and secondary growth
- explain how environmental factors can affect the primary and secondary growth of a plant
- discuss the importance of primary and secondary growth in the life cycle of a flowering plant.

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

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