P530/2

BIOLOGY

(Theory)

Paper 2

OCT. 2022

2½ Hours

FAREWELL TO UACE CANDIDATES

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BIOLOGY

(THEORY)

Paper 2

2 Hours 30 Minutes

INSTRUCTIONS TO CANDIDATES

This paper consists of **six** *questions.*

Answer question **one** *in section* **A** *plus* **three** *others from section* **B**.

Candidates are advised to read the questions ***carefully***, ***organise*** *their answers and present them* ***precisely*** *and* ***logically***, *illustrating with well labelled diagrams where necessary.*

SECTION A (40 MARKS)

1. Figure **1** below shows time course of sucrose (photoassimilate) and phosphorus net import (-) into and export (+) from a cucumber leaf during its development.

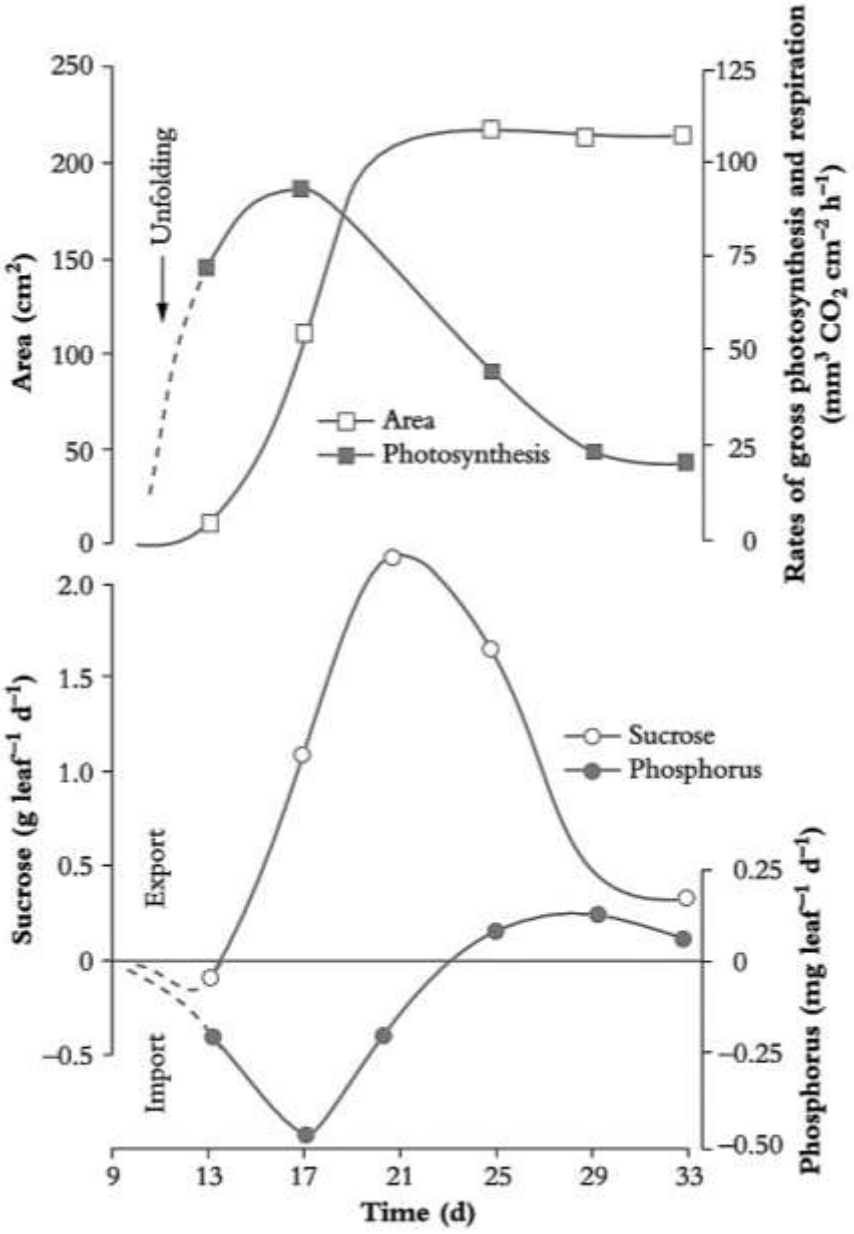

Fig. 1

(a) Describe the relationship between:
  (i) Leaf area and photosynthesis. (*06 marks*)
  (ii) Photosynthesis and sucrose movement in the leaf. (*06 marks*)

(b) Compare sucrose and phosphorus movement in cucumber leaf. (*09 marks*)

(c) With reference to the graph, explain the movement of sucrose and phosphorus in cucumber leaf. (*10 marks*)

(d) Outline the mechanism of transporting sucrose and phosphorus into and out of leaves. (*09 marks*)

SECTION B (60 MARKS)

2. (a) How do organisms respond to changes in their internal and external environments? (*10 marks*)

(b) What is the importance of organisms responding to changes in their internal and external environments? (*10 marks*)

3. (a) Explain energy transfer within and between organisms. (*08 marks*)

(b) Describe the different types of relationships and interactions between organisms. (*12 marks*)

4. (a) How are nitrogen-containing substances made available to organisms? (*10 marks*)

(b) Explain how proteins are involved in the control of processes and responses in organisms. (*10 marks*)

5. (a) Why do phenotypes of offspring produced by the same parents vary? (*11 marks*)

(b) Explain the importance of variation and diversity in organisms. (*09 marks*)

6. (a) What are the different forms of movement inside cells? (*10 marks*)

(b) Describe the role played by the movement of substances across cell membranes in the functioning of different organs and organ systems. (*10 marks*)

END.