

**P530/2**

**BIOLOGY (Theory)**

**PAPER 2**

**JULY/AUG 2022**

**2 ½ HOURS**

**ASSHU MBARARA JOINT MOCK EXAMINATIONS 2022**

**Uganda Advanced Certificate of Education**

**BIOLOGY**

**PAPER 2**

**2 HOURS 30 MINUTES**

**INSTRUCTIONS TO CANDIDATES**

- *Answer question 1 from section A and any **THREE** questions from section B.*
- *Your answers must be well organized and illustrated with appropriate diagrams whenever necessary.*
- *Begin a fresh number on a new page.*

## SECTION A (40 MARKS)

1. Figures 1 (a) and 1 (b) show the physiological changes that occur in a fruit as it ripens.

fig 1 (a)

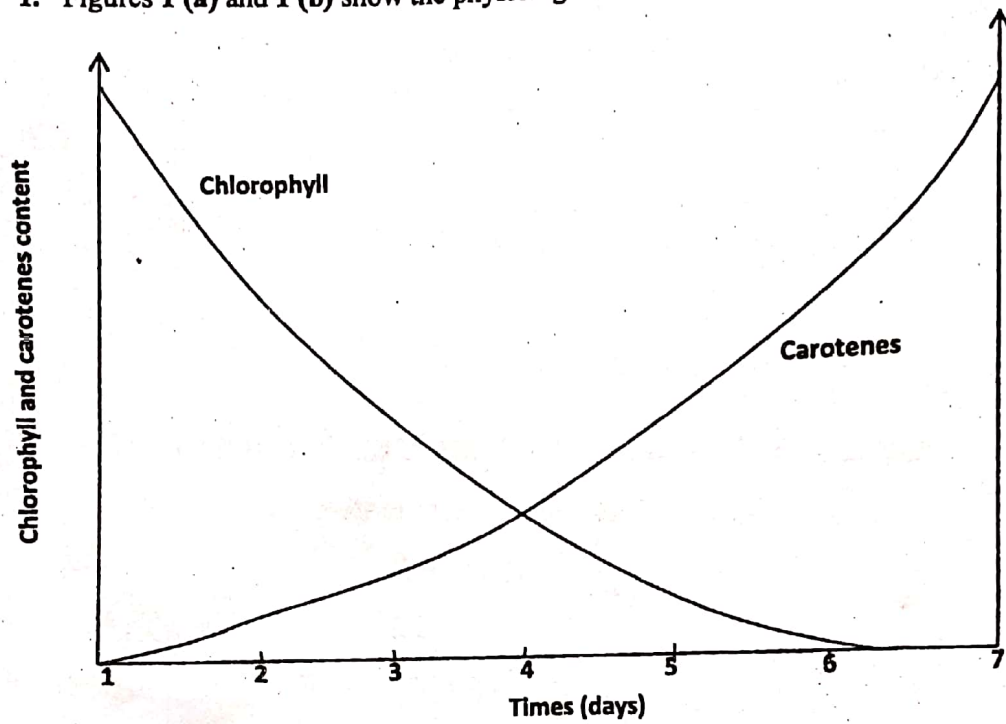
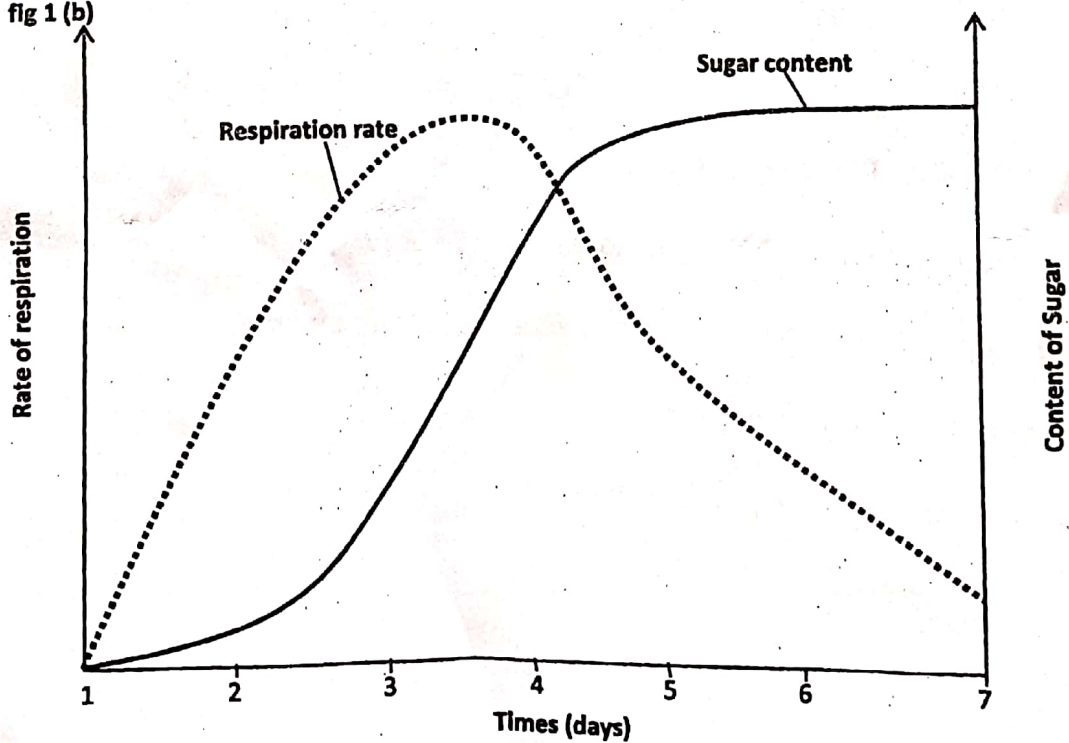


fig 1 (b)



- 1.(a) Describe how each of the following variables change with time (5 mks)
  - i) Respiratory rate
  - ii) Sugar content
- (b) Explain the variation in each of the following (10 mks)
  - (i) Respiratory rate
  - (ii) Sugar content
- (c) Explain the relationship between the content of chlorophyll of carotenes (6 mks)
- (d) What is the ecological significance of each of the changes depicted on figure 1 (a) and (b) (5 mks)
- (e) Outline other changes which occur in a fruit as it ripens. In each case give the importance of the change (4 mks)
- (f) (i) What is abscission? (2 mks)
- (ii) Describe the process of abscission in a fruit (8 mks)

### SECTION B (60 MARKS)

2. (a) Describe how the changes in soil osmotic pressure can affect the mechanical support of a plant. (5 mks)
  - (b) Describe the mechanism of pressure flow hypothesis in the translocation of photosynthetic products. (15 mks)
- 3.(a) Discuss how meiosis leads to variation in a sexually reproducing organisms. (8 mks)
  - (b) Explain how each of the following leads to evolution of new species (8 mks)
    - (i) increased population size
    - (ii) selective breeding

(c) Describe how regular use of antibiotics can result into bacterial resistance  
(4 mks)

4.(a) What is meant by the menstrual cycle? (4 mks)

(b) How is the growth of graffian follicles in the ovary initiated and controlled?  
(16 mks)

5.(a) Compare the factors that control ventilation with those controlling heart rate in humans. (6 mks)

(b) Explain how the transmission of an impulse is inhibited across the synapse?  
(14 mks)

6.(a) Describe the process of locomotion without the use of muscles in organism. (12 mks)

(b) Describe the adaptations of birds for flight. (8 mks)

**END**