

**P530/2**  
**BIOLOGY**  
**(Theory)**  
**PAPER 2**  
**July/August 2018**  
**2<sup>1</sup>/<sub>2</sub> hours**



## **WAKISSHA JOINT MOCK EXAMINATIONS**

**Uganda Advanced Certificate of Education**

**BIOLOGY**

**(Theory)**

**Paper 2**

**2 hours 30 minutes**

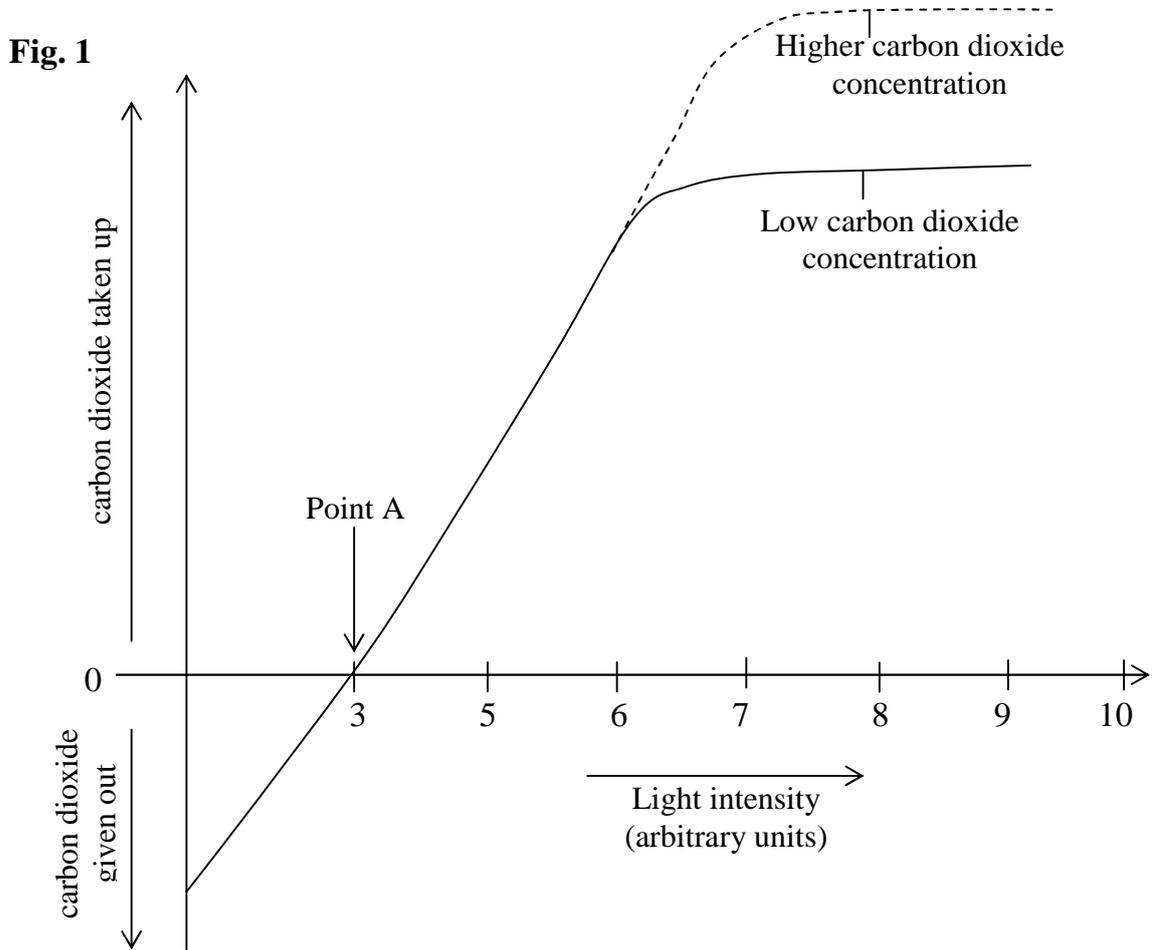
### **INSTRUCTIONS TO CANDIDATES:**

- *This paper consists of sections, **A** and **B**.*
- *Answer question **one** in section **A** plus **three** other questions from section **B**.*
- *Any additional question(s) answered will **not** be marked.*
- *Candidates are advised to read the questions carefully, organize their answers and present them precisely and logically.*
- *Illustrate with well labelled diagrams, wherever necessary.*

**SECTION A (40 MARKS)**

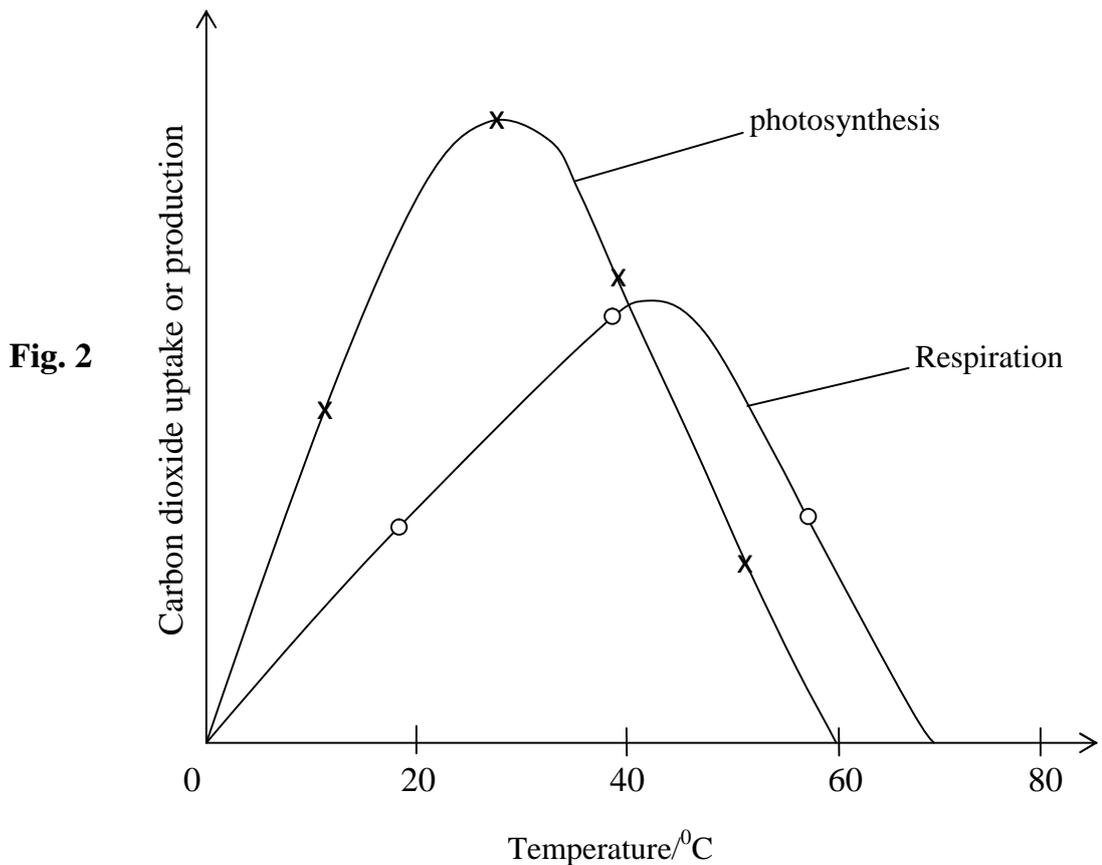
**COMPULSORY QUESTION**

1. The graph in figure 1 below represents the rate of photosynthesis as measured by amount of carbon dioxide exchanged at low carbon dioxide concentration and at higher carbon dioxide concentration with varying light intensity. Study it and use it to answer the question that follows.



- (a) (i) Describe the rate of photosynthesis at low carbon dioxide concentration (08mark)
- (ii) Explain your description above. (12marks)
- (b) Give any one difference between higher carbon dioxide concentration and low carbon dioxide concentration. (01 mark)
- (c) Use the graph above to explain why environmentalists recommend afforestation to reduce global warming. (04marks)
- (d) (i) Name point marked A on the graph and explain what occurs at this point. (02mark)
- (ii) Suggest and explain what would happen to a point A if instead a shade plant was used. (03marks)

- (e) Figure 2 below is a graph showing the effect of temperature on the rate of photosynthesis and respiration in well illuminated leaves. (light and other variables kept constant)



- (i) Compare the effect of temperature on the rate of photosynthesis and respiration. (05marks)
- (ii) Suggest a possible reason why the rate of respiration is less affected by temperatures above 40°C than the rate of photosynthesis. (03marks)
- (iii) What would be the effect of rise in temperatures on the rate of photosynthesis if the intensity of light falling on the leaf was very low. (03marks)

### SECTION B (60 MARKS)

Answer **three** questions from this section.

2. a) How are the following tissues adapted to their functions. (08marks)
- (i) Phloem tissue.
- (ii) Xylem tissue.

- b) (i) Define blood pressure. (02marks)
- (ii) Describe the cause of pressure in blood vessels and how it changes in different parts during circulation. (10marks)
3. (a) Describe behavior of chromosomes during the cell cycle involving mitotic cell division. (09marks)
- (b) Explain how the following contribute to variation among organism: (11marks)
- (i) independent assortment.
- (ii) crossing over.
4. (a) Describe with aid of diagrams how each of the following types of movement occurs;
- (i) Ciliary movement. (08marks)
- (ii) Amoeboid movement. (08marks)
- (b) What is the importance of ciliary and amoeboid movements in humans? (04marks)
5. (a) Suggest the various ways in which synaptic transmission improves efficiency of the nervous system. (08marks)
- (b) Explain the factors that control the rate of impulse transmission along the axon of a sensory neurone. (12marks)
6. (a) Describe the mutualistic relationships that exist among marine organisms and state how each organism benefits. (13marks)
- (b) Outline plants are adapted to overcome water stress. (07marks)

**END**