

GENERAL CERTIFICATE OF EDUCATION BOARD
General Certificate of Education Examination

Biology 2
0510

JUNE 2022

ORDINARY LEVEL

Subject Title	Biology
Paper No.	Paper 2
Subject Code No.	0510

Two and half hours

Answer **FIVE** questions, **ALL THREE (3)** from SECTION A and any **TWO (2)** from SECTION B

All questions carry 20 marks each. For your guidance, the approximate mark for each part of a question is indicated in brackets.

Begin each question on a new page.

Give labelled diagrams where these will make the answers clearer.

You are advised to read carefully through the question paper before you begin your answers.

You are reminded of the necessity for good English and orderly presentation in your answers.

In calculations, you are advised to show all the steps in your working, giving your answer at each stage.

Turn Over

SECTION B**Answer ALL 3 questions**

1. (a) Explain the following biological terms:
 i) Osmosis.
 ii) Diffusion.
 iii) Active transport. (4, 3, 2 marks)
- (b) How is osmosis important to plants? (6 marks)
- (c) Describe an experiment to demonstrate osmosis in living tissues (5 marks)
- (Total = 20 marks)**

2. (a) i) Briefly explain the term photosynthesis. (5 marks)
 ii) Give the importance of photosynthesis in nature. (3 marks)
- (b) How is the leaf suited for photosynthesis? (12 marks)
- (Total = 20 marks)**

3. (a) Define the following terms:
 i) Pollution. (4, 5 marks)
 ii) Producer. (6 marks)
- (b) What appropriate measures can be put in place to control/prevent water pollution? (6 marks)
- (c) Construct a food web using the following organisms: chicken, grasshopper, cabbage, hawk, goat, man. (5 marks)
- (Total = 20 marks)**

SECTION B**Answer any 2 questions**

4. (a) Define the term respiration. (5 marks)
 (b) Compare aerobic and anaerobic respiration (6 marks)
 (c) Describe an experiment to show that energy is released during respiration. (9 marks)
- (Total = 20 marks)**

5. (a) Write short notes on the following biological terms:
 i) Stimulus. (4, 4, 4, 2 marks)
 ii) Tropism.
 iii) Reflex action.
 iv) Effector.
- (b) With the aid of a diagram, describe the effect of illuminating a shoot from one direction. (6 marks)
- (Total = 20 marks)**

6. (a) Define the following terms:
 i) Copulation. (3, 3, 4 marks)
 ii) Ovulation. (8 marks)
 iii) Fertilization. (2 marks)
- (b) Describe the process of birth in humans. (2 marks)
- (c) State two functions of the placenta. (2 marks)
- (Total = 20 marks)**

7. (a) What is:
 i) Genetics, (2, 3, 3 marks)
 ii) Variation,
 iii) Mutation?
- (b) When a red-flowered plant was crossed with a white flowered plant of the same species, all the resulting offspring of the F1 generation were red flowered plants. When one of the F1 offspring was self-pollinated, 176 red-flowered and 64 white-flowered plants of the F2 generation were obtained.
- i) Explain the genetics of these crosses by using appropriate diagrams and symbols. (10 marks)
 ii) What is the importance of a test cross? (2 marks)
- (Total = 20 marks)**

GO BACK AND CHECK YOUR WORK