

**Biology 2**  
**0710**

**CAMEROON GENERAL CERTIFICATE OF EDUCATION BOARD**

General Certificate of Education Examination

**JUNE 2020**

**ADVANCED LEVEL**

Subject Title	<b>BIOLOGY</b>
Paper No./Title	<b>Paper 2 Theory</b>
Subject Code No.	<b>0710</b>

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**GCE REVISION**  
**THREE HOURS**

Answer any FIVE out of the eight questions.

If more than five questions are answered, only the first five will be assessed.

All questions carry equal marks. Marks allocated to parts of questions are indicated in brackets.

Illustrate your answers wherever desirable with large, clear and fully labelled diagrams.

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

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Turn Over

1. (a) Define the following terms:  
(i) Taxonomy.  
(ii) Binomial nomenclature.  
(b) Explain why viruses are not considered as cellular organisms.  
(c) Describe the life cycle of a named retrovirus.
- (5, 5, 10 marks)  
(Total = 20 marks)

2. (a) What is translocation?  
(b) Using suitable examples, explain the mechanism of each of the following biological processes.  
(i) Diffusion.  
(ii) Active transport.  
(iii) Pinocytosis.  
(iv) Phagocytosis.
- (4, 4, 4, 4, 4 marks)  
(Total = 20 marks)

3. (a) Explain why metabolic reactions occur in small steps.  
(b) Describe and illustrate how the following factors affect the rate of enzyme reaction.  
(i) Substrate concentration.  
(ii) Temperature and temperature coefficient.  
(iii) Hydrogen ion concentration.  
(c) Differentiate between competitive and non-competitive inhibitors.
- (5, 12, 3 marks)  
(Total = 20 marks)

4. (a) Why do plants lack specialized excretory organs unlike animals?  
(b) Outline two importance of each of excretion and Osmoregulation.  
(c) Describe:  
(i) the regulation of calcium and phosphate ions in blood.  
(ii) the homeostatic control of blood glucose level.
- (2, 4, 6, 8 marks)  
(Total = 20 marks)

5. (a) Define and explain the following ecological terms.  
(i) Competition.  
(ii) Succession.  
(b) Briefly describe the flow of energy in a named ecosystem.  
(c) How are xerophytes adapted to their habitats?
- (10, 6, 4 marks)  
(Total = 20 marks)

6. (a) Define the following:
- (i) Vernalisation.
  - (ii) Photoperiodism.
- (b) Describe the effects of photoperiods on plants.
- (c) How is the speed of impulse transmission along a nerve fibre affected by:
- (i) diameter of the axon.
  - (ii) myelin sheath.
- (d) Briefly describe the transmission of an impulse across the synapse.

(4, 3, 7, 6 marks)  
(Total = 20 marks)

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7. (a) Define the following genetic terms:
- (i) Epistasis.
  - (ii) Aneuploidy.
- (b) A farmer crossed a cocoa plant that has yellow long pods with another cocoa plants that has red short pods. All the  $F_1$  plants produced had yellow long pods. When he crossed the  $F_1$  cocoa pants with cocoa plants having red short pods, the following were obtained.
- 483 cocoa plants with yellow long pods.
  - 472 cocoa plants with red short pods.
  - 103 cocoa plants with yellow short pods.
  - 93 plants with red long pods.
- (i) Using crosses, explain these results as fully as possible.
  - (ii) Using the figures given, calculate the cross over values between the genes for nature Of pod and colour.
  - (iii) Of what importance are linked genes?

(4, 12, 2, 2 marks)  
(Total = 20 marks)

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8. (a) Explain the following terms as used in Biotechnology.
- (i) Gene technology.
  - (ii) Recombinant DNA.
  - (iii) Plasmid.
- (b) With the aid of a diagram, describe the steps involved in producing a recombinant DNA.
- (c) What are some FOUR disadvantages of genetic engineering?

(6, 10, 4 marks)  
(Total = 20 marks)

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