

BIOLOGY 2
0710

CAMEROON GENERAL CERTIFICATE OF EDUCATION BOARD

General Certificate of Education Examination

JUNE 2017

ADVANCED LEVEL

Subject Title	BIOLOGY
Paper No./Title	2 -Theory
Subject Code No.	0710

THREE HOURS

Answer any FIVE out of the eight questions.

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

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.

1. (a) Define the term alternation of generations.
- (b) Draw an annotated life cycle of a moss to illustrate alternation of generations.
- (c) Why is water necessary for the life cycle of the moss?

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

2. (a) State the characteristics of a respiratory surface.
- (b) Describe the mechanism involved in the ventilation of
 - (i) an insect and
 - (ii) man.
- (c) How is ventilation controlled in man?

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

3. A gardener working on pepper plants got the following results:

- A: When a pepper plant with long and yellow seeds was crossed with one with round and red seeds all the offspring had long yellow seeds in the F₁.
- B: A majority of the F₁ pepper plants when crossed with a double recessive for both traits gave an equal number of pepper plants with long yellow and round red seeds in the F₂
- C: A few pepper plants from among the F₁ when crossed with a double recessive gave in the F₂, the following phenotypic numbers :
 - 890 long yellow seeds
 - 900 round red seeds
 - 104 long red seeds
 - 110 round yellow seeds

- (a) State the dominant and recessive traits in these crosses
- (b) What can you suggest is responsible for the different phenotypic numbers of B and C?
- (c) Using appropriate symbols show the crosses of the findings in A, B and C. Your crosses should show all the necessary steps.

(2, 3, 15 marks)
(Total = 20 marks)

4. Describe how:

- (a) A stomach of a ruminant herbivore is adapted to carry out its functions.
- (b) The nervous and hormonal systems control digestive secretions in the human gut.
- (c) Auto digestion is prevented in the human gut.

mucosa secretes mucus which prevents auto digestion in the gut walls

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

5. (a) (i) Define tropic and nastic responses stating one example in each case.
- (ii) List the differences between tropic and nastic responses.
- (b) Explain why phytochromes are involved in detecting photoperiods in flowering plants?
- (c) List 5 uses of auxins in agriculture.

(10, 5, 5 marks)
(Total = 20 marks)

6. (a) Define a food web. Use organisms in a named ecosystem to illustrate the principle of a food web. ✓
(b) Briefly explain the following:
(i) Ozone layer depletion;
(ii) Global warming and
(iii) Eutrophication ?

(8, 12 marks)

(Total = 20 marks)

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7. (a) What is:
(i) Growth and
(ii) Cell differentiation?
(b) Discuss five factors: three external and two internal that affect growth in plants.

(5, 15 marks)

(Total = 20 marks)

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8. (a) Describe Biotechnology.
(b) List the steps involved in a Biotechnological process.
(c) Describe each of the following:
(i) Cheese production;
(ii) Yoghurt production and
(iii) Production of the antibiotic penicillin

(3, 5, 12 marks)

(Total = 20 marks)

calculation of mole concs To chemical equations