



BIOLOGY 2

0710

CAMEROON GENERAL CERTIFICATE OF EDUCATION BOARD

General Certificate of Education Examination

JUNE 2007

ADVANCED LEVEL

Subject title	BIOLOGY
Paper No.	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 for 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.

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Turn over

00/0710/2/C/Q

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1. (a) State why lower organism as protozoan lack a defined respiratory media.
 (b) (i) Compare the properties of air and water as respiratory media.
 (ii) Name any three respiratory with their corresponding metals and state a group of animals in which each pigment is found.
 (Present your answer is a tabular form)
 (c) Describe how ventilation is controlled in mammals' e g man.
 (2,8,10 marks) (Total = 20 mark)

2. Use specific examples to illustrate the meaning of the following terms
 (i) Energy flow through an ecosystem
 (ii) Acid rain
 (iii) Global warming and
 (iv) Endangered species
 (5,4 marks) (Total = 20 mark)

3. (a) Explain the meaning the following using specific examples
 (i) Enzyme repression.
 (ii) Enzyme induction
 (b) Explain why protein synthesis through enzyme repression and enzyme induction is described as a feedback process (or cellular homeostasis).
 (c) Describe the feedback control of protein synthesis by a regulator gene.
 (6,4,10 marks) (Total = 20 marks)

4. (a) Sate Mendel's second law.
 (b) Explain what is meant by recombinant
 (c) A homozygous purple flower short stemmed plant was a homozygous red flower , long stemmed plant and the F1 phenotypes had purple flower and short stems. When the F1 generation was test crossed with a double recessive plant, the following progeny were produced.
 52 purple flower short stem
 47 purple flower short stem
 49 red flower short stem
 45 red flower short stem
 Explain these results fully
 (3,3,14 marks) (Total = 20 mark)

5. (a) Compare and contrast the features of annelids and arthropods



- (b) (i) Distinguish between a holometabolous life cycle and a heterometabolous lifecycle.
(ii) Give two advantages of a life cycle that incorporates metamorphosis
(c) Using a precise example of an insect, briefly describe complete metamorphosis

(6, 2, 4, 8 marks) (Total = 20 marks)

6. (a) Briefly explain the mechanism of the following processes giving example of where they occur
(i) Diffusion.
(ii) Active transport.
(iii) Pinocytosis.
(iv) Phagocytosis
(b) (i) List the factors that affect the rate of diffusion
(ii) Suggest why active transport is affected by oxygen concentration and diffusion is not.

(4, 4, 4, 2, 3, 3 marks) (Total = 20 marks)

7. (a) What are the differences between endocrine and nervous systems?
(b) Draw a well labeled diagram of the longitudinal section of the human brain and state the functions of its main parts.
(c) State how nervous impulses may be impaired.

(5, 13, 2 marks) (Total = 20 marks)

8. (a) State the differences between the following.
(i) Chromosomes and germ mutations.
(ii) Somatic and germ mutation
(b) Describe five mechanisms by which mutations may occur.

(6, 14 marks) (Total = 20 mark)

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