



BIOLOGY 2

0710

CAMEROON GENERAL CERTIFICATE OF EDUCATION BOARD

General Certificate of Education Examination

JUNE 2006

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) On the basis of structure only, differentiate between a bacterial cell and a chlorenchyma cell as revealed by the electron microscope.
(b) How is the light microscope different from an electron microscope?
(c) Describe the structure of the compact bone in relation to its function as revealed by the light microscope.
(5, 5, 10 marks) (Total = 20 marks)

2. (a) Enzyme activity is influenced by the protein nature of enzymes. Describe four factors which show the influence of protein nature of enzymes on enzymes' activity.
(b) Explain the role of enzymes in cell metabolism. Illustrate your answer with specific examples.
(c) What is the importance of DNA in the production of an enzyme?
(8, 8, 4 marks) (Total = 20 marks)

3. (a) Describe briefly how human/ related activities affect the following
 - i. Ozone depletion.
 - ii. Eutrophication.
 - iii. Global deforestation.
 - iv. Over fishing
 (b) How can you ensure that the clean-up campaigns in our cities are more effective?
(16, 4 marks) (Total = 20 marks)

4. (a) What is meant by:
 - i. Action spectrum.
 - ii. Absorption spectrum?
 (b) Discuss how changes in;
 - i. Temperature.
 - ii. Light intensity.
 - iii. Carbon dioxide concentration
 Would affect rice production in one –acre plot.
(c) Differentiate between C3 and C4 plants
(4, 10, 6 marks) (Total = 20 marks)

5. (a) Distinguish between Nervous and Hormonal control in a mammal.
(b) Explain the following:
 - i. Nervous transmission across a synapse.
 - ii. Role of hormones in the control of the menstrual cycle.**(5,6,9 marks) (Total = 20 marks)**

6. (a) What are the characteristics of a respiratory surface?
(b) Describe the mechanism involved in the ventilation movements of the following animals.
 - i. A bony fish.
 - ii. A young boy of 16 years
 (c) How do the plant structures;
 - i. Stomata.
 - ii. Lenticels**(4,8,8 marks) (Total = 20 marks)**



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7. (a) Distinguish between the following pairs of genetic terms;
- Complete dominance and incomplete dominance
 - Sex determination and sex –linkage.
- (b) In rabbits, black fur is dependent on a dominant allele B and brown fur on a recessive allele. Normal fur length is determined by a dominant allele (R) and short fur length (rex) by a recessive allele r.
- Work out the F₂ generation of a cross between a homozygous black Rabbit with a normal fur length and brown Rex Rabbit.
 - What proportion of the normal black F₂ rabbits from the cross above may be expected to be homozygous for both gene pairs?
 - Work out a test cross of the F₁.
- (8, 12, marks) (Total = 20 marks)

8. Muscle action, ciliary action and amoeboid action are very important processes in the life of mammal. Discuss how far this statement is true.

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

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