

**WASSCE / WAEC MAY / JUNE 2006 BIOLOGY PAPER 2 SECTION B
(THEORY)**

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SECTION B

ESSAY

[60 marks]

1½ hours

Answer **three** questions in all; **two** questions in Part I and **one** question in either Part II or Part III.

No marks will be awarded for answering questions **not peculiar** to your own country.

Write your answers in **ink** in your answer booklet.

Large labelled diagrams should be used where they make an answer clearer. The names given for chosen species **must** be English or Scientific and **not** vernacular.

All questions carry equal marks.

Credit will be given for clarity of expression and orderly presentation of answers.

PART I

FOR ALL CANDIDATES

Answer **two** questions **only** from this part.

1. (a) (i) List the functions of a typical foliage leaf. [4 marks]
(ii) Name **three** types of leaf modifications giving **one** example in each case. [6 marks]
(b) Make a diagram 8 – 10 cm long, of the female reproductive part of a flowering plant and label fully. [7 marks]
(c) Name **three** plants that are pollinated by insects. [3 marks]
2. (a) (i) Describe **three** features of a typical vertebra. [6 marks]
(ii) Name **three** types of skeletons found in animals, and in **each** case name **one** animal which possesses it. [6 marks]
(b) (i) State **four** functions of the mammalian skeleton. [4 marks]
(ii) Name **four** types of joints found in the mammalian skeleton. [4 marks]
3. (a) Write short notes on **each** of the following: [15 marks]
(i) ecosystem;
(ii) population;
(iii) ecological succession in plants.
(b) List **five** ways by which nitrogen can be made available to the soil for plant growth. [5 marks]
4. (a) Explain the term, *conservation of natural resources*. [2 marks]
(b) (i) List **seven** methods of soil conservation. [7 marks]
(ii) Name **four** other natural resources that may be conserved. [4 marks]

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- (c) State **three** factors which negatively affect conservation of forest in West Africa. [3 marks]
- (d) Describe what happens during the denitrification stage of the nitrogen cycle. [4 marks]

PART II

FOR CANDIDATES IN GHANA
SIERRA LEONE AND THE GAMBIA

Answer **one question only** from this part.

5. (a) Explain the role of **each** of the following groups of organisms in an ecosystem:
- (i) green plants;
 - (ii) herbivores;
 - (iii) carnivores;
 - (iv) decomposers. [8 marks]
- (b) List **four** biotic and abiotic factors **each** that affect population growth. [8 marks]
- (c) List **four** effects of food shortage on a population. [4 marks]
6. (a) (i) What is *dentition*? [2 marks]
- (ii) State the **two** types of dentition in animals. [2 marks]
- (iii) Explain how the dentition of a carnivore is adapted to its mode of nutrition. [12 marks]
- (b) State **four** ways of caring for the teeth in humans. [4 marks]

PART III

FOR CANDIDATES IN NIGERIA ONLY

Answer **one question only** from this part.

7. (a) What is a *hormone*? [3 marks]
- (b) Outline the role played by adrenaline in an emergency situation. [7 marks]
- (c) In a tabular form, list **five** differences between *hormonal co-ordination* and *nervous co-ordination*. [5 marks]
- (d) Name **three** animal *hormones* and **two** plant *hormones*. [5 marks]
8. (a) (i) Briefly explain the term *respiration*. [4 marks]
- (ii) Name the **two** types of respiration and write a balanced equation to summarize **each** of them. [6 marks]
- (b) Outline the mechanisms involved in:
- (i) *inhalation*;
 - (ii) *exhalation* in human beings. [10 marks]