



88146302

**ENVIRONMENTAL SYSTEMS AND SOCIETIES
STANDARD LEVEL
PAPER 2**

Candidate session number

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Friday 7 November 2014 (afternoon)

Examination code

2 hours

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INSTRUCTIONS TO CANDIDATES

- Write your session number in the boxes above.
- Do not open this examination paper until instructed to do so.
- Section A: answer all questions. Refer to the resource booklet which accompanies this question paper.
- Section B: answer two questions.
- Write your answers in the boxes provided.
- A calculator is required for this paper.
- The maximum mark for this examination paper is *[65 marks]*.



16EP01

SECTION A

Answer **all** questions. Write your answers in the boxes provided.

The resource booklet provides information on the Niger Delta. Use the resource booklet and your own studies to answer the following.

1. (a) State **one** reason why the Niger Delta tropical swamp forest biome is

(i) ecologically valuable.

[1]

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(ii) economically valuable.

[1]

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(iii) socio-culturally valuable.

[1]

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(Question 1 continued)

- (b) With reference to **Figure 3**, complete the table to outline how these **three** features of the population pyramid show it represents an LEDC. [3]

Feature of pyramid	How this shows it's an LEDC
narrow top
wide base
shape of pyramid

- (c) With reference to **Figure 2**, calculate the percentage of Nigeria's population who live on the Niger Delta. [1]

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- (d) With reference to **Figure 4**,
 - (i) State the GDP *per capita* in 2006. [1]

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- (ii) State the relationship between GDP and Nigerian oil production. [1]

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16EP03

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(Question 1 continued)

- (e) With reference to **Figures 5a** and **5b**, explain why the Niger Delta swamp ecosystem is a biodiversity hotspot. [2]

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- (f) Explain how gas flaring in Nigeria causes acid deposition. [2]

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- (g) Explain why the people of the Niger Delta may be particularly badly affected by global warming in the future. [3]

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(Question 1 continued)

- (h) Identify **three** reasons why the Ogoni people have been effective in campaigning against the environmental degradation of their land. [3]

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- (i) Suggest why reversing environmental degradation in Ogoniland is likely to be difficult. [4]

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- (j) With reference to **Figure 8**, suggest what message the cartoonist is trying to communicate. [2]

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SECTION B

Answer **two** questions. Write your answers in the boxes provided.

Each essay is marked out of [20] of which [2] are for clarity of expression, structure and development of ideas:

[0] Quality of expression, structure and development is poor.

[1] Quality of expression, structure and development is limited.

[2] Quality of expression is clear, structure is good and ideas are well developed.

2. (a) Distinguish between negative and positive feedback using examples from environmental systems. [4]

(b) The rate of world population growth is expected to slow so that by 2050 it will have stabilized at 10 billion. Explain **three** development policies that would enable the population to stabilize. [6]

(c) A vegetarian diet is often described as “better for the environment”. Discuss this statement using your knowledge of ecosystems **and** environmental value systems. [8]

Expression of ideas [2]

3. (a) Distinguish between a pyramid of numbers and a pyramid of productivity. [4]

(b) Explain how **three** pollution management strategies may reduce eutrophication in agricultural areas. [6]

(c) Discuss with reasons or evidence, the environmental impacts of **two** named food production systems. [8]

Expression of ideas [2]

4. (a) Describe the role of isolation in natural selection. [4]

(b) Explain the transfer of energy through an ecosystem. Support your explanation with a labelled diagram. [6]

(c) For a named endangered species, discuss why it is endangered and why it should be conserved. [8]

Expression of ideas [2]



5. (a) Distinguish between the mass extinctions evident in the fossil record and extinctions within historic times. [4]
- (b) Evaluate the use of models for predicting climate change. [6]
- (c) Tundra ecosystems are vulnerable to the effects of global warming. Discuss the response of **two** contrasting environmental value systems to the effects of global warming on the tundra. [8]
- Expression of ideas* [2]

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16EP08

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16EP09

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16EP10

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16EP14

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16EP15

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16EP16