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ENVIRONMENTAL SYSTEMS AND SOCIETIES
STANDARD LEVEL
PAPER 2

Candidate session number

Friday 7 November 2014 (afternoon)

2 hours

Examination code

8	8	1	4	–	6	3	0	2

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

16 pages

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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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(This question continues on the following page)

(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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(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]*