



88126302

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

Candidate session number

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Wednesday 14 November 2012 (morning)

Examination code

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2 hours

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]*.



0116

SECTION A

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

The resource booklet provides information on the Danube River delta. Use the resource booklet and your own studies to answer the following.

1. (a) With reference to Figure 3,

(i) identify the preferred habitat of bream. [1]

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(ii) compare and contrast the abiotic factors found in the straight part of the river with the abiotic factors found in the meandering part of the river. [3]

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(b) (i) With reference to Figure 1 (c) and Figure 8, identify which of the three channels of the Danube River delta has been most extensively straightened by dredging and state why this has been done. [2]

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(Question 1 continued)

- (ii) Suggest possible effects of channel straightening on biotic and abiotic factors. [3]

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- (c) (i) With reference to Figure 7, calculate the percentage decrease in average sediment flow between 1971–1980 and 1981–1990. [2]

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- (ii) Suggest what effect this change in the sediment flow would have on the maintenance of the Danube River delta. [2]

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(Question 1 continued)

- (d) Using Figure 5, outline the relationship between the number of fish species breeding and river discharge. [2]

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- (e) Figure 4 shows the pattern of water use in Moldova. Water used in irrigation and raising livestock often does not return to the Danube, but evaporates. Suggest **one** possible impact of the failure to return water to the river. [1]

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- (f) With reference to Figure 4 and Figure 6, state **one** example of a renewable form of natural capital and **one** example of a replenishable form of natural capital. [2]

Renewable:
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Replenishable:
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(Question 1 continued)

- (g) With reference to all of the data, discuss the relationship between natural income and the sustainability of human activities in the Danube River delta. [4]

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- (h) A large part of the Danube River delta has been designated as a protected area. Outline the factors necessary to ensure the success of protected areas as a conservation measure. [3]

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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) Climate change is an environmental issue of global concern. Outline **one** other environmental issue and explain why it is a global problem. [5]
- (b) Evaluate the policies or legislation or actions that exist locally, nationally and internationally that address this issue. [7]
- (c) Discuss whether a technocentric approach to solving this issue might be more effective than an ecocentric approach. [6]
- Expression of ideas* [2]

3. (a) With reference to natural cycles and human activities, outline the process of eutrophication. [6]
- (b) Explain how eutrophication illustrates both positive and negative feedback systems. [4]
- (c) Describe **one** other system where human activities have created environmental problems through a positive feedback system and explain how the system can be brought back to balance. [8]
- Expression of ideas* [2]



- 4. (a) Describe how carbon dioxide is added to the atmosphere through natural and human processes. [5]
- (b) Compare and contrast general trends in the carbon footprint for less economically developed countries (LEDCs) and more economically developed countries (MEDCs) over the past 100 years. [5]
- (c) In 2007, the Intergovernmental Panel on Climate Change (IPCC) released its findings on global warming. The IPCC stated that the climate was definitely warming and was most likely caused by human activities. Evaluate this point of view. [8]

Expression of ideas [2]

- 5. (a) Outline how culture, economics and technology have influenced the value of a **named** resource in different regions or in different historical periods. [6]
- (b) Outline the range of energy resources available to society. [6]
- (c) With reference to energy resources, discuss the concept of sustainable development. [6]

Expression of ideas [2]

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Turn over

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1016

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