Diploma Programme
Programme du diplôme
Programa del Diploma

Environmental systems and societies
Standard level
Paper 2

Tuesday 22 November 2016 (afternoon)

Candidate session number

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]**.

16 pages

8816 – 6302

International Baccalaureate
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Section A

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

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

1. (a) State the biome for the area shown in **Figure 1(b)**. [1]

(b) Identify **three** natural sources of water available in the Swakop area. [2]

(c) Outline **two** reasons why the Swakop river is considered to be ecologically important. [2]

(d) Outline whether an invasive species such as Mesquite is likely to be *r*-strategist or *K*-strategist. [1]

(This question continues on the following page)

(Question 1 continued)

(e) With reference to the data in **Figure 4(b)**, suggest **two** conclusions which can be drawn from the camera trap data. [4]

(f) Justify whether or not Mesquite should be cleared from the Swakop River Valley. [3]

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(Question 1 continued)

(g) Complete the table to state what type of natural capital the following resources are: renewable, replenishable or non-renewable. [1]

Resource	**Type of natural capital**
Groundwater	. . . .
Uranium	. . . .
Mesquite seed pods	. . . .

(h) With reference to **Figure 5(a)** describe how Uranium prices have changed over time. [2]

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(i) Outline **two** reasons why the value of resources like Uranium can change over time. [2]

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(Question 1 continued)

(j) With reference to **Figure 6(a)** describe **two** ways in which Uranium mines have had an impact on water resources. [2]

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(k) With reference to **Figures 6(a)** and **7**, calculate the amount of water available for other uses, after the Erongo desalination plant has met the needs of the three operational mines. [1]

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(l) Using evidence from the resource booklet, justify from an ecocentric viewpoint why the Husab Uranium Project should not be approved. [4]

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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) Outline **one** climatic and **one** edaphic (soil) factor which affect the final climax community in an ecosystem. [4]

(b) Explain **two** examples of soil degradation and the appropriate soil management strategies from a named farming system. [6]

(c) Evaluate the impact of economic development on the ecological footprint of a human population. [8]

Expression of ideas [2]

3. (a) Outline **two** historical influences on the development of the modern environmental movement. [4]

(b) Describe **two** possible methods that could be used to collect data for a baseline study for an environmental impact assessment. [6]

(c) Evaluate the proposal to convert an area of tropical rainforest into agricultural use. [8]

Expression of ideas [2]

4. (a) Outline why top carnivores are vulnerable to non-biodegradable toxins. [4]

(b) Explain **two** factors which lead to a loss of marine (ocean) biodiversity. [6]

(c) Evaluate **one** possible pollution management strategy for solid domestic waste. [8]

Expression of ideas [2]

5. (a) Distinguish between the causes of recent global warming and those of ozone depletion. [4]

(b) Explain the impact of global warming and ozone depletion on coastal ecosystems. [6]

(c) Environmental value systems may lead to different approaches to addressing the issue of global warming. Discuss which environmental value system(s) you consider to be most appropriate in the management of global warming. [8]

Expression of ideas [2]