

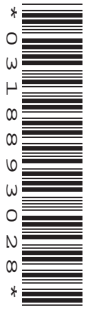


UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
General Certificate of Education
Advanced Subsidiary Level

CANDIDATE NAME

CENTRE NUMBER

CANDIDATE NUMBER



ENVIRONMENTAL MANAGEMENT

8291/21

Paper 2 Hydrosphere and Biosphere

May/June 2010

1 hour 30 minutes

Additional Materials: Answer Booklet/Paper

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name on all the work you hand in.
Write in dark blue or black pen.
You may use a soft pencil for any diagrams, graphs, tables or rough working.
Do not use staples, paper clips, highlighters, glue or correction fluid.
DO NOT WRITE IN ANY BARCODES.

Section A

Answer **all** questions.
Write your answers in the spaces provided on the question paper.

Section B

Answer **one** question from this section.
Answer the question on the separate answer paper provided.

At the end of the examination,

1. fasten all separate answer paper securely to the question paper;
2. enter the question number from Section B in the grid opposite.

For Examiner's Use	
Section A	
1	
2	
Section B	
Total	

This document consists of **11** printed pages and **1** blank page.



Section A

Answer **all** questions in this section.

- 1 (a) Fig. 1.1 is a model depicting how a plant succession might be affected by human disturbance.

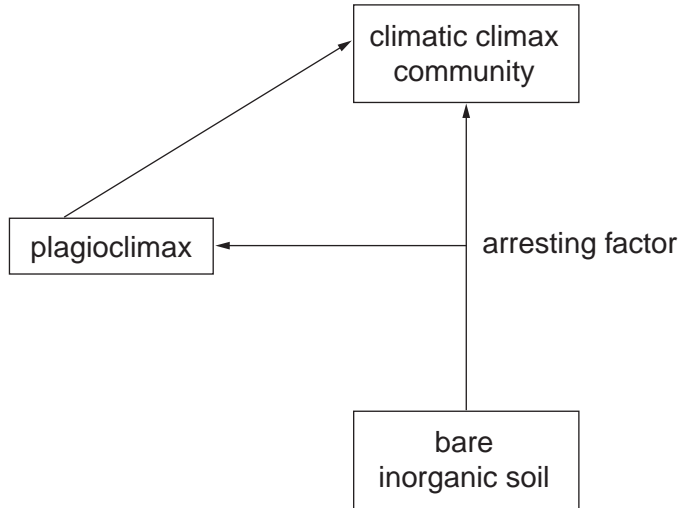


Fig. 1.1

- (i) Define the terms *plant succession* and *climatic climax community*.

plant succession

.....

.....

.....[2]

climatic climax community

.....

.....

.....[2]

- (ii) Explain how human activities would, in time, produce a plagioclimax plant community.

.....

.....

.....

.....[2]

(b) Describe and explain **two** different effects deforestation might have on the area in Fig. 1.2.



Fig. 1.2

effect 1

.....

.....

.....[2]

effect 2

.....

.....

.....[2]

- 2 (a) Rivers can become polluted with a variety of substances derived from many different sources.
- (i) Complete Table 2.1 by matching the following list of pollutants with the correct source. Use each pollutant **once** only. [5]

detergents hydrocarbons sand nitrates litter

Table 2.1

source of pollution	pollutant
agriculture	
quarrying	
shopping centres	
domestic pollution from dwellings	
roads	

- (ii) Explain why some of these sources can lead to storm water pollution.

.....

.....

.....

.....[2]

Section B

Choose **one** question from this section.

- 3 (a) Fig. 3.1 shows worldwide trends in the populations of terrestrial, freshwater, and marine species. The value of 100 for 1970 is used as a benchmark index.

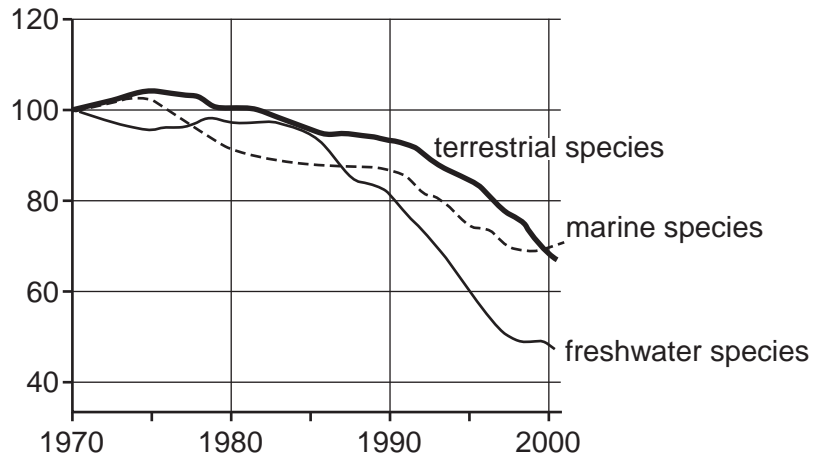


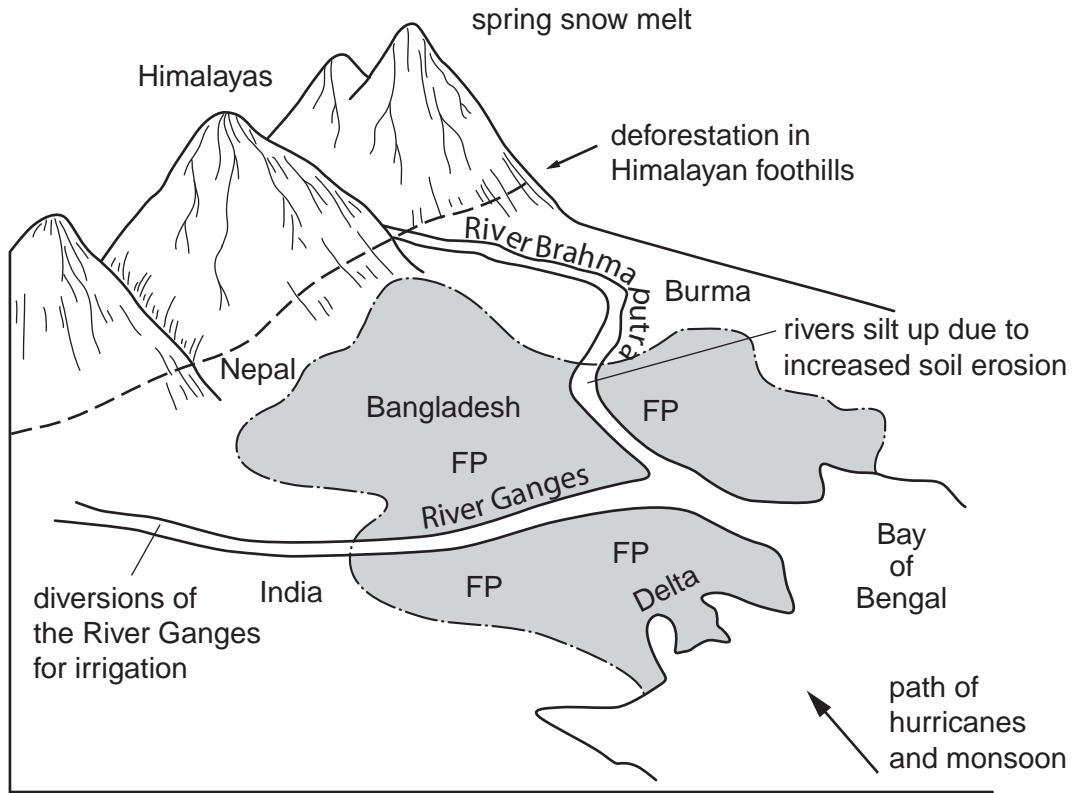
Fig. 3.1

Describe the trends shown in Fig. 3.1 and suggest a reason for each of these trends. [10]

- (b) With reference to examples you have studied, describe and assess **two** strategies that are used to conserve species and maintain biodiversity. [30]

[Total: 40]

- 4 (a) Use Fig. 4.1 to explain how the natural environment and human activity combine to cause the annual extreme flooding experienced in Bangladesh.



Key

- FP Flood Plain
- ~~~~~ rivers
- - - - Bangladesh National boundary

Fig. 4.1

- (b) Strategies for managing rivers serve a number of purposes. Using examples, assess the measures that are undertaken to maintain a sustainable supply of water as well as to control flooding. [30]

[Total: 40]

- 5 (a) Explain how the over-exploitation of whales and krill from the oceans surrounding Antarctica might affect the marine food web shown in Fig. 5.1.

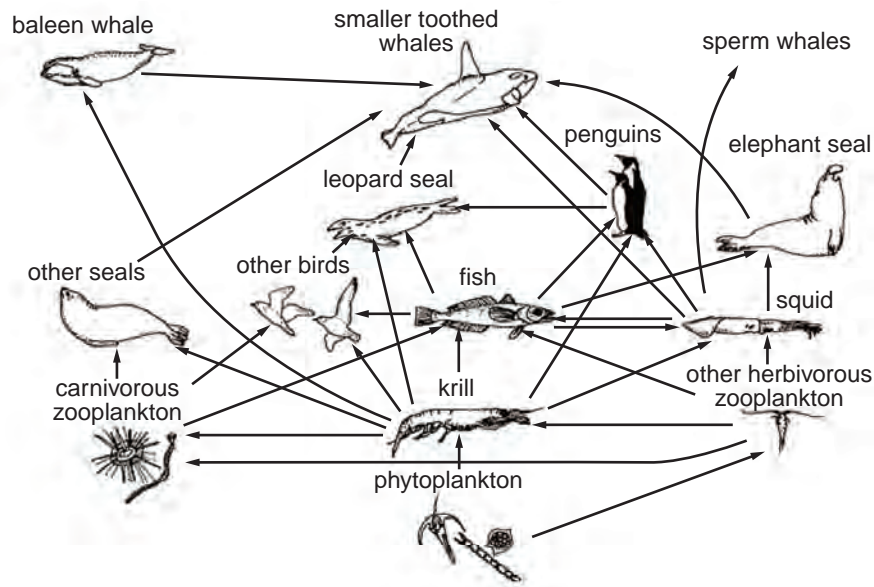


Fig. 5.1

- (b) Assess the roles of pressure groups and governments in the conservation of endangered marine species. [30]

[Total: 40]

Copyright Acknowledgements:

- Question 1 Figure 1.2 © Deforested Slope; Cameroon Wildlife Aid Fund.
 Question 1 Figure 1.4 © John A Helms, Dictionary of Forestry; The Society of American Foresters, 1998.
 Question 3 Figure 3.1 © World Wildlife Fund for Nature.
 Question 4 © Himalayas/Bangladesh (adapted); cgz.e2bn.net/e2bn/teas/c99/schools/cgz/account.
 Question 5 © www.coolantarctica.com/Antarcticafactfile.wildlife/foodweb.gif.

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