



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

CANDIDATE  
NAME

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**ENVIRONMENTAL MANAGEMENT**

**8291/02**

Paper 2 Hydrosphere and Biosphere

**October/November 2011**

**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	
<b>Section A</b>	
<b>1</b>	
<b>2</b>	
<b>Section B</b>	
<b>Total</b>	

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



Section A

Answer **all** questions in this section.

Write your answers in the spaces provided.

For  
Examiner's  
Use

1 (a) Why is a coral reef an example of an ecosystem?

.....  
.....  
.....  
..... [2]

(b) Fig. 1.1 and Fig. 1.2 contain information about the risk of damage to coral reefs.

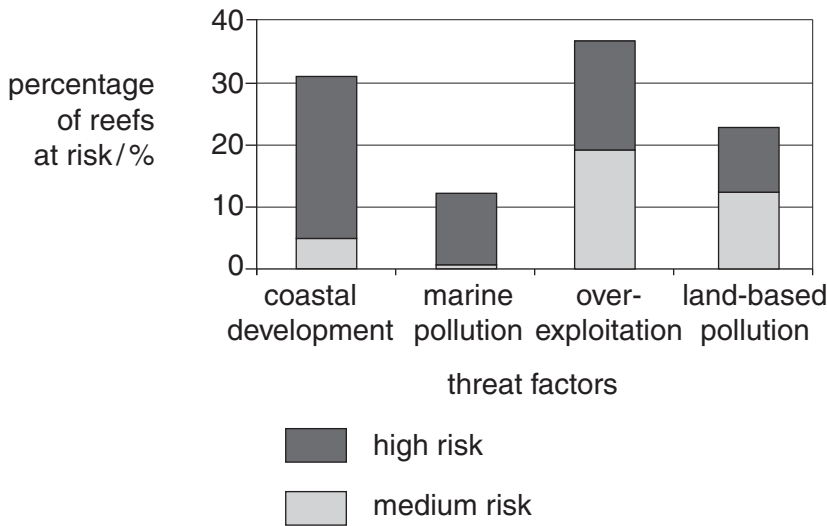


Fig. 1.1

location	percentage of coral reefs at risk/%
Middle East	61
Caribbean	60
Indian Ocean	54
Southeast Asia	82
Pacific	41

Fig. 1.2

(i) Describe the pattern of risk for coral reefs from different threat factors as shown in Fig. 1.1.

.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
..... [3]

(ii) Describe the pattern of risk for coral reefs according to the different locations as shown in Fig. 1.2. State **one** reason for this pattern.

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.....  
.....  
.....  
..... [3]

(iii) Outline **one** factor that puts coral reefs at risk, other than the factors involved in (i) and (ii).

.....  
.....  
.....  
..... [2]



(ii) Describe how the reef conservation strategies also cater for the needs of tourists.

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.....  
.....  
.....  
..... [3]

(iii) To what extent might these strategies offer a sustainable future for the Great Barrier Reef?

.....  
.....  
.....  
.....  
.....  
..... [3]

[Total: 20]

2 (a) Fig. 2.1 shows part of a water cycle in which human activity is taking place.

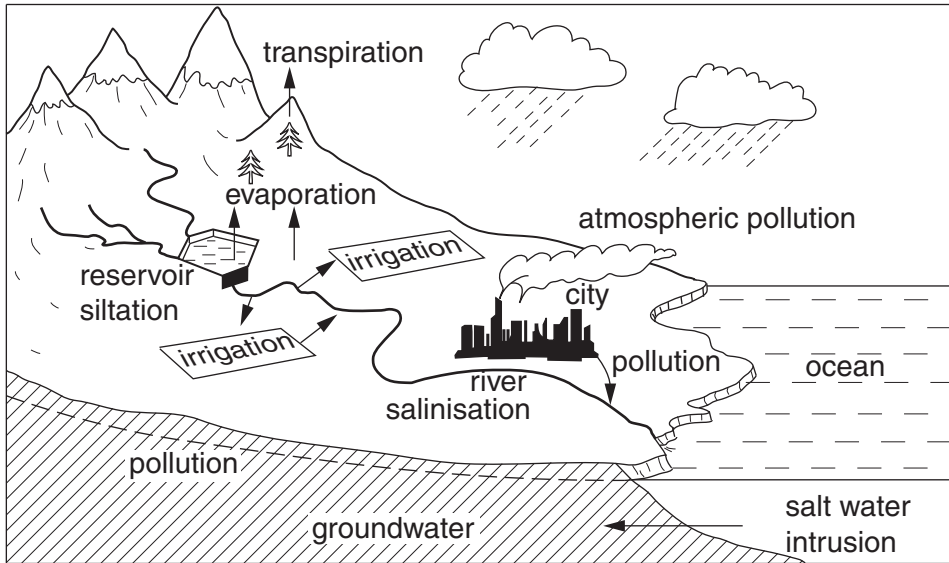


Fig. 2.1

(i) State how modifying the vegetation cover for human usage could affect rates of surface runoff and transpiration.

runoff .....

.....

transpiration.....

..... [2]

(ii) Describe **one** way in which people could benefit from changes to river discharge downstream from the dam.

.....

.....

.....

..... [2]







(ii) Describe how the demand for water might influence or be influenced by:

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Use*

- population dynamics .....

.....

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.....

- human outcomes.....

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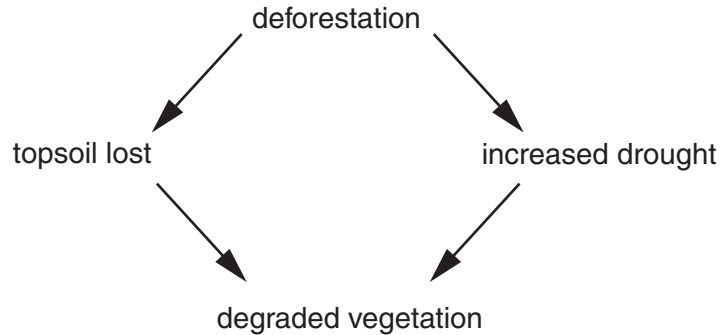
..... [6]

[Total: 20]

**Section B**

Answer **one** question from this section.

- 3 (a) Use Fig. 3.1 to explain how deforestation might result in a degraded vegetation cover. [10]



**Fig. 3.1**

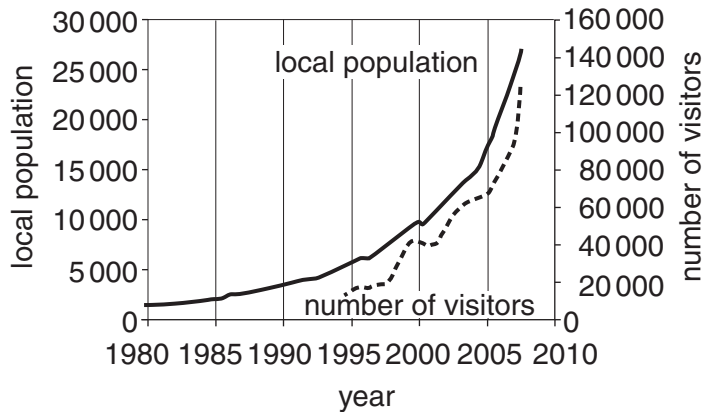
- (b) With reference to **either** a MEDC **or** a LEDC you have studied, describe the pressures that have been placed on its reserves of forest. Discuss the difficulties it might face in achieving a sustainable utilisation of its forest resources. [30]

[Total: 40]

- 4 (a) Using the information in Fig. 4.1 give **three** different reasons why the Galapagos Islands are a designated conservation site. [10]



**Population and Tourist Growth In Galapagos**



Abundant wildlife above and below the waves draws ecotourists to Ecuador's Galapagos. Get up close on a stroll or in a boat. Snorkel and dive with denizens of the deep, from sea lions to sea turtles at Santiago's Cousin's Rock.  
(extract from a tourist brochure)

**Fig. 4.1**

- (b) With reference to a named area of ecological importance that is under threat from human activity, assess the measures that are being used to enable its conservation. [30]

[Total: 40]

- 5 (a) Fig. 5.1 shows natural processes which influence the height of the water table. This could also be affected by human activity.

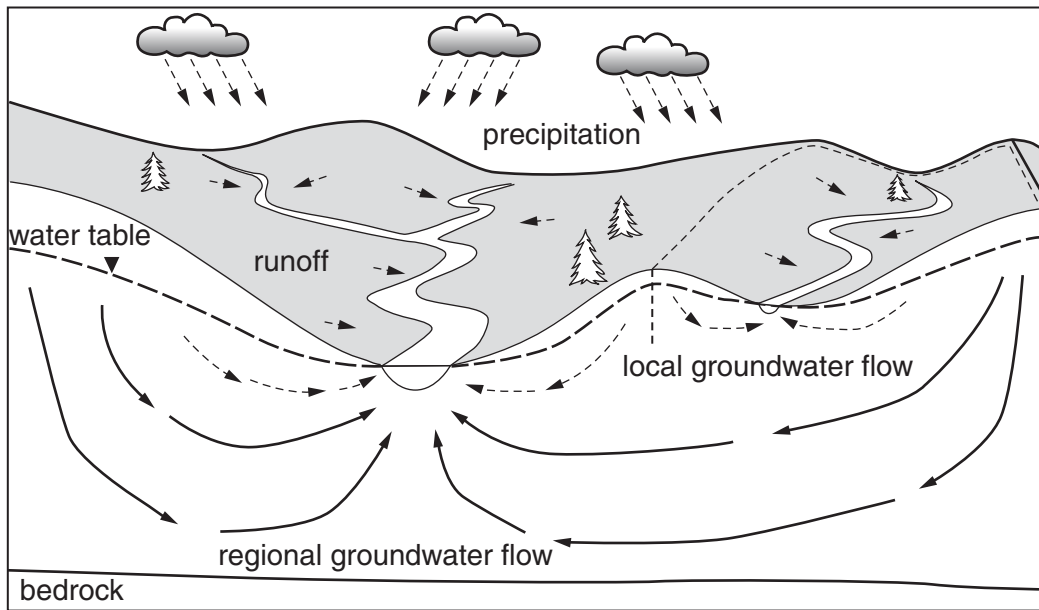


Fig. 5.1

Briefly describe the conditions that would cause changes to the height of the water table. [10]

- (b) With reference to examples you have studied, describe **three** common causes and characteristics of groundwater pollution. Assess the extent to which it is possible to manage groundwater pollution in order to supply clean water suitable for human consumption. [30]

[Total: 40]

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*Copyright Acknowledgements:*

Question 2b Figure 2.2 © [info.u4health.org/pr/M14/M14figs.shtml](http://info.u4health.org/pr/M14/M14figs.shtml); 1996.

Question 4a Figure 4.1 © Isthmus of Bartolome and Pinnacle Rock; Nancy Nehring; iStock Photo 1351643. Photo; iStock photo.

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