

Cambridge International Examinations

| Cambridge International AS Level | Cambridge International Examinations Cambridge International Advanced Subsidiary Level | www.PapaCambridge.com | | |
|--|--|-----------------------|---|--|
| CANDIDATE | | 1,5 | m | |
| NAME | | | | |
| CENTRE NUMBER | CANDIDATE NUMBER | | | |
| ENVIRONME | NTAL MANAGEMENT | 8291/21 | | |
| Paper 2 Hydr | osphere and Biosphere | May/June 2015 | | |

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 an HB pencil for any diagrams or graphs.

Do not use staples, paper clips, glue or correction fluid.

DO NOT WRITE IN ANY BARCODES.

Electronic calculators may be used.

You may lose marks if you do not show your working or if you do not use appropriate units.

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,

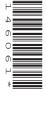
- fasten all separate answer paper securely to the question paper; 1.
- 2. enter the question number from Section B in the grid opposite.

| | Examiner's Use |
|-----------|-------------------|
| Section A | |
| 1 | |
| 2 | |
| Section B | |
| | |
| Total | |

For

1 hour 30 minutes

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



Section A

Answer all questions in this section.

1 (a) Fig. 1.1 shows three different types of aquifers.

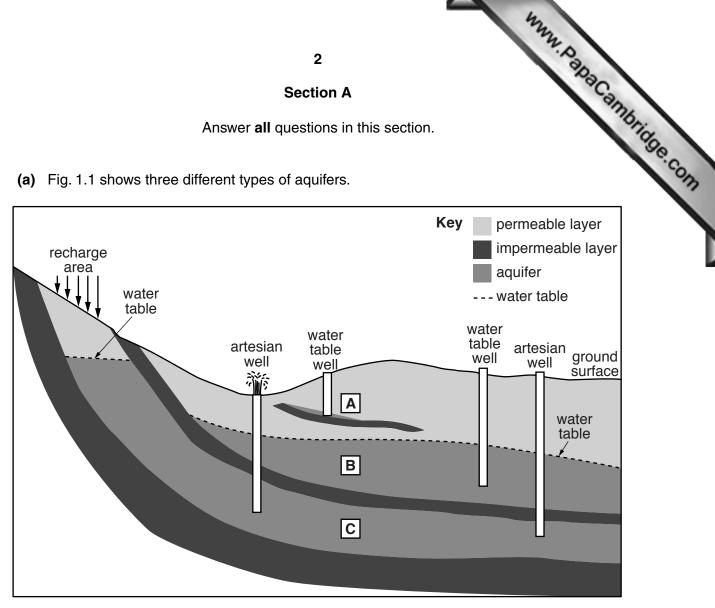


Fig. 1.1

Identify the type of aquifer at positions A, B and C in Fig. 1.1. Choose from the list below.

| | unconfined | confined | perched | |
|---|------------|----------|---------|-----|
| A | | | | |
| В | | | | |
| С | | | | [2] |

www.PapaCambridge.com With reference to Fig. 1.1, describe the characteristic features of each of different types of aquifers. perched unconfined [6] (iii) Outline the benefits of extracting water from the aquifers located at A and C in Fig. 1.1.

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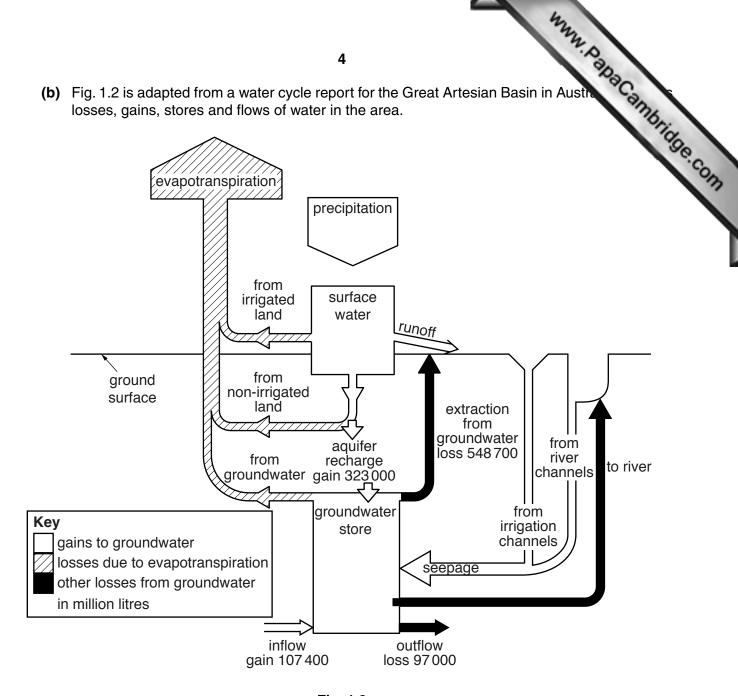


Fig. 1.2

| i) | With reference to Fig. 1.2, explain what is meant by the term <i>aquifer recharge</i> . |
|----|---|
| | |
| | |
| | |
| | [2] |

| (ii) | With reference to the information in Fig. 1.2, describe how natural processes activity are causing an overall loss of 215300 million litres from the groundwate your answer refer to losses, extraction and natural recharge. |
|------|---|
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| | |
| | [8] |

[Total: 20]

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(a) Fig. 2.1 shows a food web for some of the organisms living on part of the Galapa 2 Fig. 2.2 shows the locations of some native species on the islands.

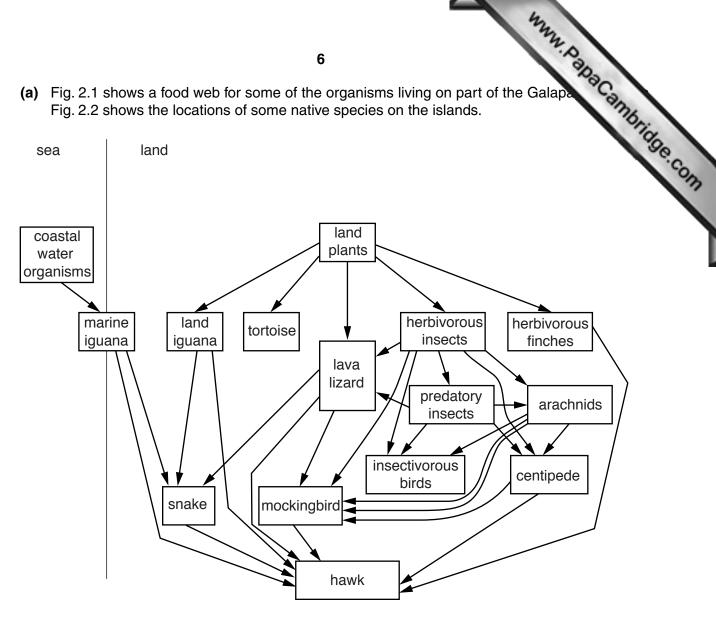


Fig. 2.1

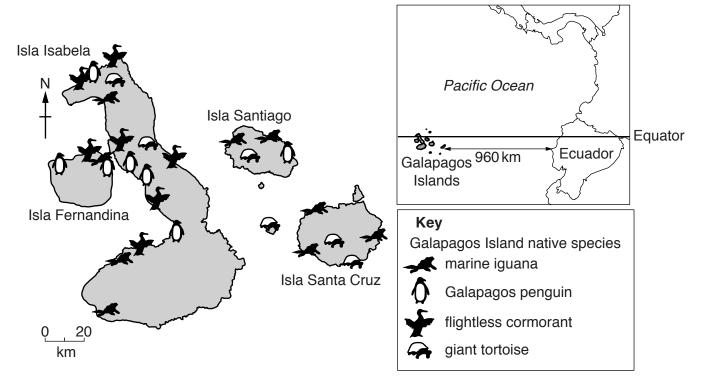


Fig. 2.2

www.PapaCambridge.com (i) With reference to Fig. 2.1, complete the four-stage food chain. land plants

| | | | ı | | | 그 [2] |
|---------|-----------------------------|-----------------|------------|---------------------------------------|--------------------------|-------|
| (ii) | | | | explain how the t Galapagos Island | itat and <i>niche</i> ca | an be |
| | habitat | | | | | |
| | | | | | | |
| | niche | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | [4] |
| (iii) | reference to | | 2.2, expla | d with a 64km ration the need to co | | |
| | ••••• | | | | | ••••• |
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| | | | | | | ••••• |
| | | | | | | ••••• |
| | | | | | | |
| | | | | | | [4] |
| (b) (i) | Suggest one Islands. | way in which to | urism car | pose a threat to | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | [2] |

Fig. 2.3 shows the Galapagos Island of Santa Cruz. Describe how the strate Fig. 2.3 can protect the island's most vulnerable species.

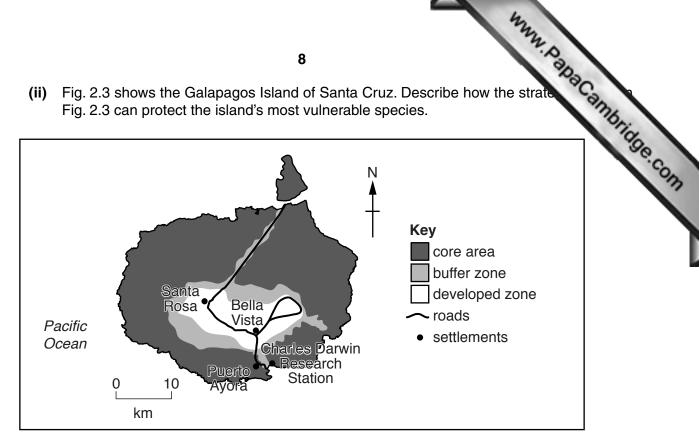
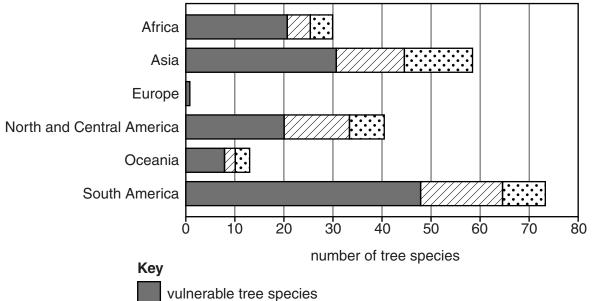


Fig. 2.3

| [8] |
|-----|

Answer one question from this section.

www.PapaCambridge.com 3 (a) Fig. 3.1 shows the number of threatened tree species in three categories for different regions.



vulnerable tree species endangered tree species critically endangered tree species

Fig. 3.1

Briefly describe the regional differences in the data shown in Fig. 3.1.

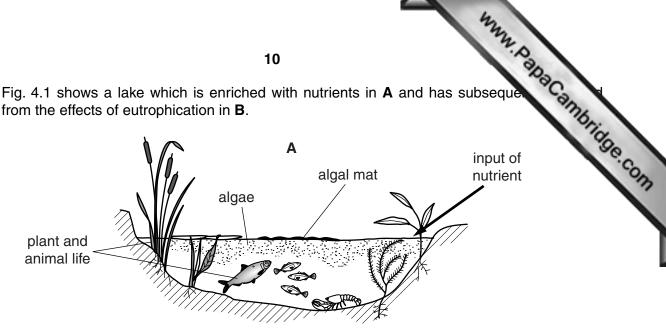
[10]

(b) Using an example of a biome you have studied, describe the threat to both the extent and ecological quality of its forest ecosystems. Evaluate the measures that can be used to sustain the biodiversity of these forest ecosystems. [30]

[Total: 40]

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(a) Fig. 4.1 shows a lake which is enriched with nutrients in A and has subseque from the effects of eutrophication in **B**.



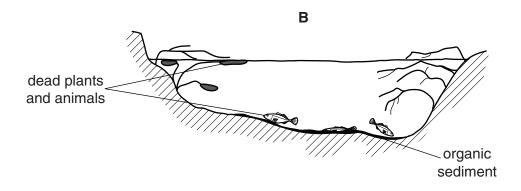


Fig. 4.1

With reference to Fig. 4.1, describe the process of eutrophication and its effects.

(b) Describe the sources of nutrient enrichment of rivers and lakes. For a river with which you are familiar, evaluate the measures that have been used to prevent or reduce pollution. [30]

[Total: 40]

[10]

(a) Fig. 5.1 shows the net primary productivity (NPP) of ecosystems and agricultural 5

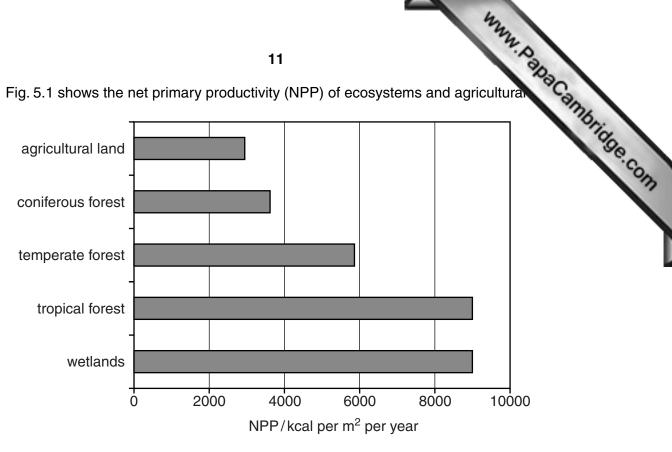


Fig. 5.1

With reference to the data in Fig. 5.1, outline three factors that affect the variations in primary productivity of ecosystems and agricultural land. [10]

(b) Fig. 5.2 shows the hectares of productive land and sea needed to resource the lifestyle of one person.

| country | productive land and sea/ha |
|--------------------------|-------------------------------|
| United States of America | 9.6 |
| Brazil | 2.1 |
| China | 1.6 |
| India | 0.8 |

Fig. 5.2

Using examples of countries at different levels of economic development, assess the extent to which the sustainable use of resources can help to resolve issues arising from the increasing demands of populations. [30]

[Total: 40]

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