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6607449030

ENVIRONMENTAL MANAGEMENT **0680/13**

Paper 1 Theory **October/November 2023**

1 hour 45 minutes

You must answer on the question paper.

No additional materials are needed.

INSTRUCTIONS

- Answer **all** questions.
- Use a black or dark blue pen. You may use an HB pencil for any diagrams or graphs.
- Write your name, centre number and candidate number in the boxes at the top of the page.
- Write your answer to each question in the space provided.
- Do **not** use an erasable pen or correction fluid.
- Do **not** write on any bar codes.
- You may use a calculator.
- You should show all your working and use appropriate units.

INFORMATION

- The total mark for this paper is 80.
- The number of marks for each question or part question is shown in brackets [ ].

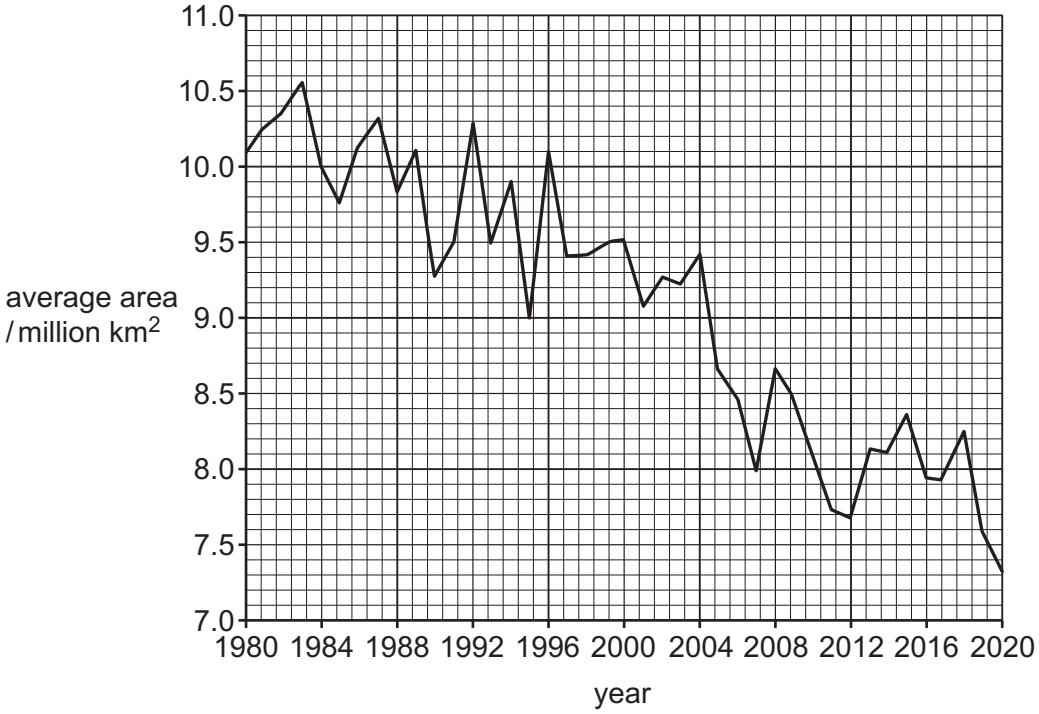
This document has **20** pages. Any blank pages are indicated.

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Section A

1 One impact of climate change is the melting of Arctic Sea ice.

The graph shows the average area of Arctic Sea ice each year from 1980 to 2020.



(a) (i) State the trend in the average area of Arctic Sea ice from 1980 to 2020.

.....

..... [1]

(ii) State the average area of Arctic Sea ice in 1996.

..... million km^2 [1]

(b) Describe the impacts of melting sea ice.

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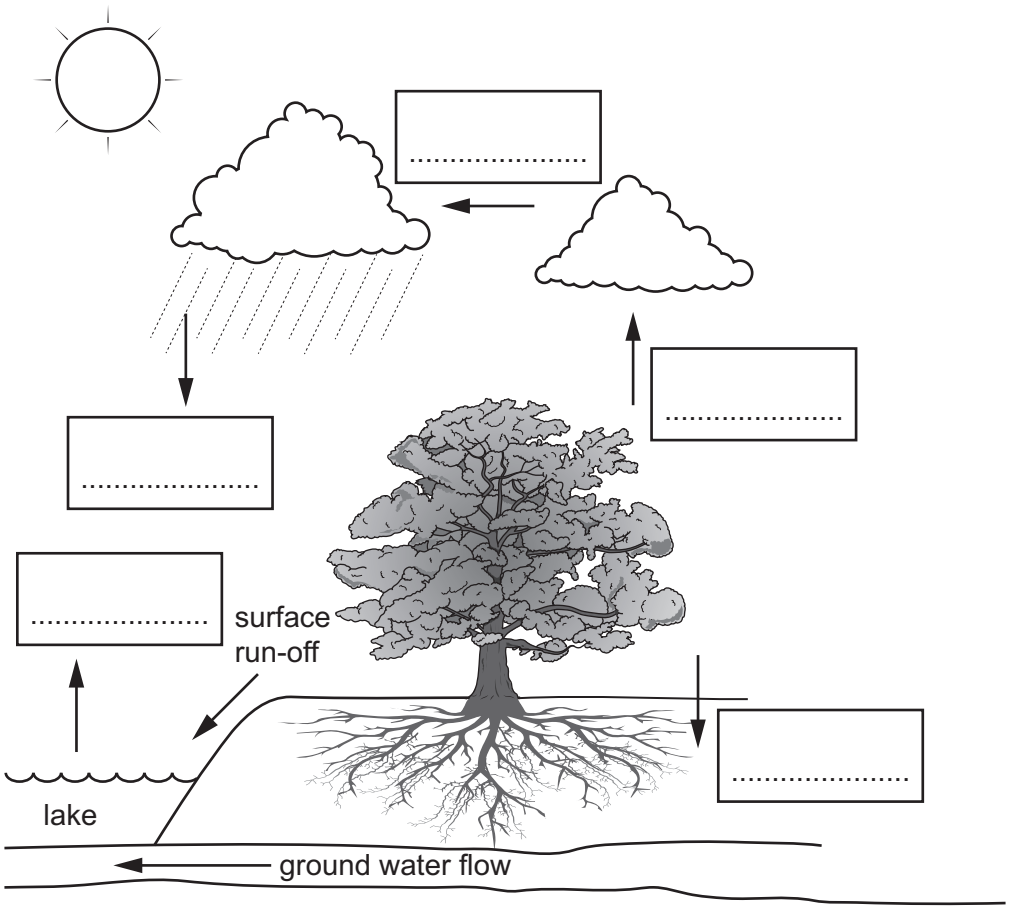
..... [3]

[Total: 5]

2 Trees have an important role in the water cycle.

(a) Complete the diagram using words from the box to identify each process in the water cycle.

condensation	**evaporation**	**infiltration**	**precipitation**	**transpiration**



[3]

(b) Describe how trees reduce soil erosion.

.....

.....

.....

..... [2]

[Total: 5]

3 The photograph shows an area affected by drought.



(a) Describe the effects of drought on the area shown in the photograph.

.....

.....

.....

..... [2]

(b) State **three** impacts of drought on local people.

1 .....

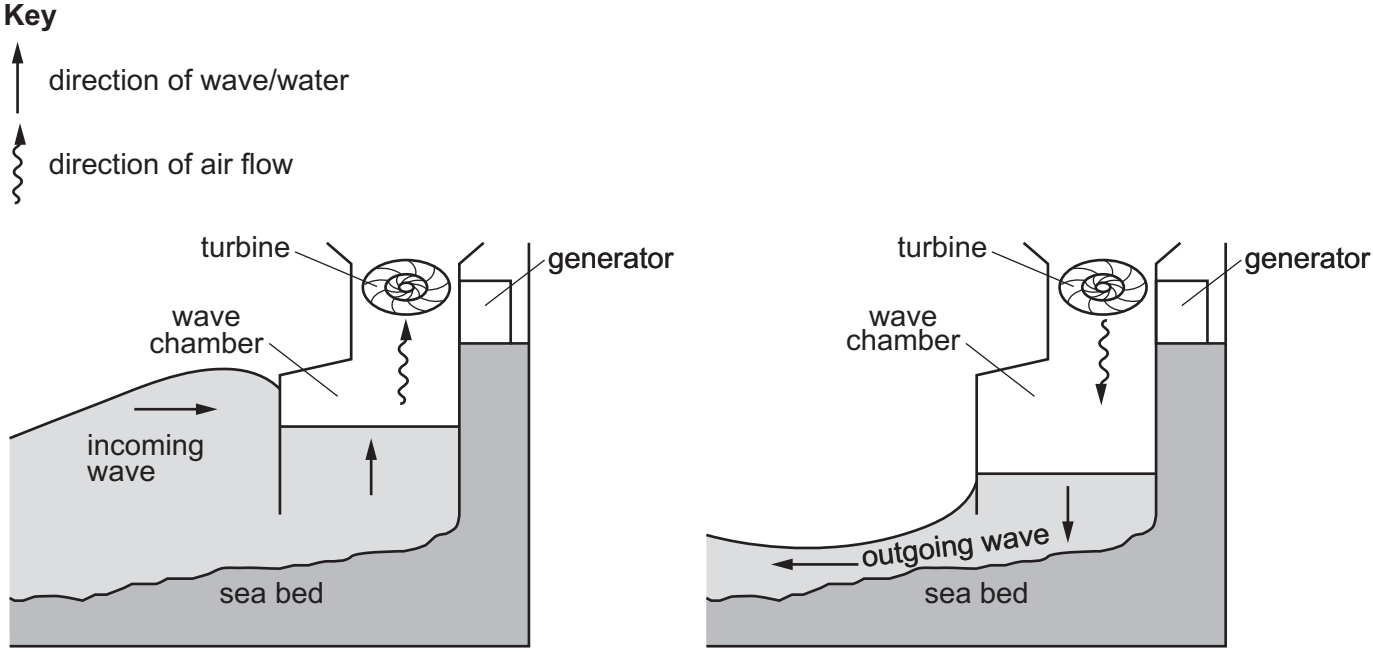
2 .....

3 .....

[3]

[Total: 5]

4 The diagrams show how wave power is used to generate electricity.



(a) Use the diagrams to describe how wave power is used to generate electricity.

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..... [3]

(b) Describe **one** benefit and **one** limitation of this method of generating electricity.

benefit .....

.....

limitation .....

.....

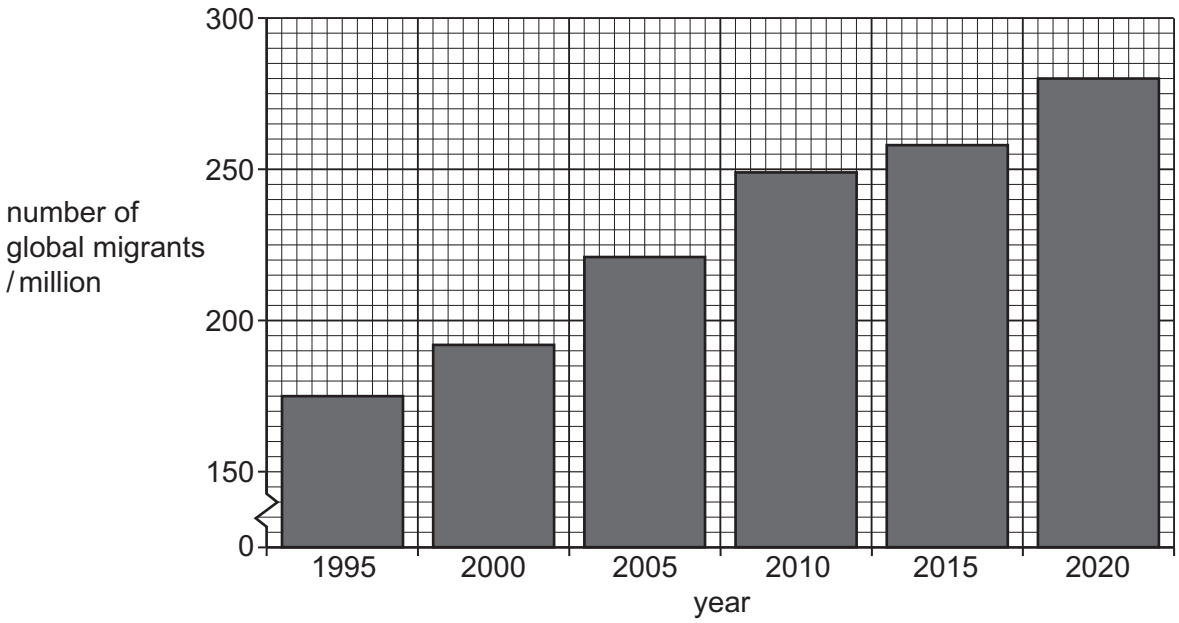
[2]

[Total: 5]

Section B

5 People migrate for many reasons.

(a) The bar chart shows the number of global migrants from 1995 to 2020.



(i) Calculate the percentage increase in the number of global migrants from 1995 to 2020.

Give your answer to **one** decimal place.

..... % [3]

(ii) A student estimates that the number of global migrants in 2025 will be 300 million.

Suggest **three** reasons why the actual number of global migrants in 2025 may be different to the number estimated by the student.

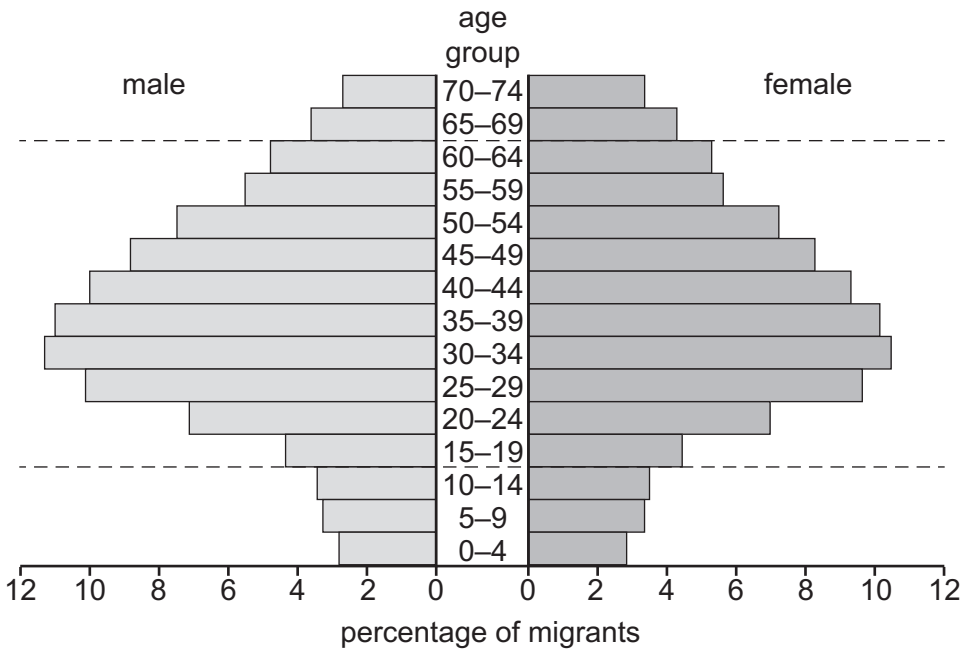
1 .....

2 .....

3 .....

[3]

(b) The diagram shows a population pyramid for a group of migrants.



Describe the structure of the population pyramid for this group of migrants.

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..... [3]

[Total: 9]

6 **(a)** State the names of **two** igneous rocks.

1 .....

2 .....
[2]

(b) Some rocks are extracted from open-cast mines.

(i) Describe the impacts an open-cast mine can have on the surrounding environment.

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..... [3]

(ii) Describe strategies for the sustainable use of rocks.

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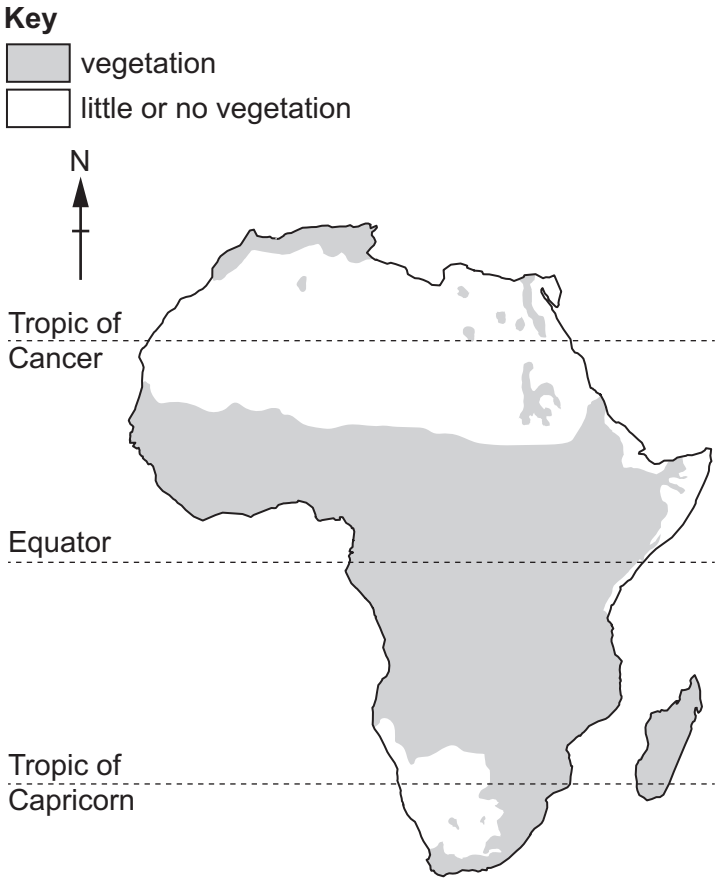
.....

..... [3]

[Total: 8]

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7 The map shows the distribution of vegetation in Africa.



(a) (i) Describe the distribution of vegetation in Africa shown on the map.

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..... [3]

(ii) Explain how the vegetation in Africa could be affected by climate change.

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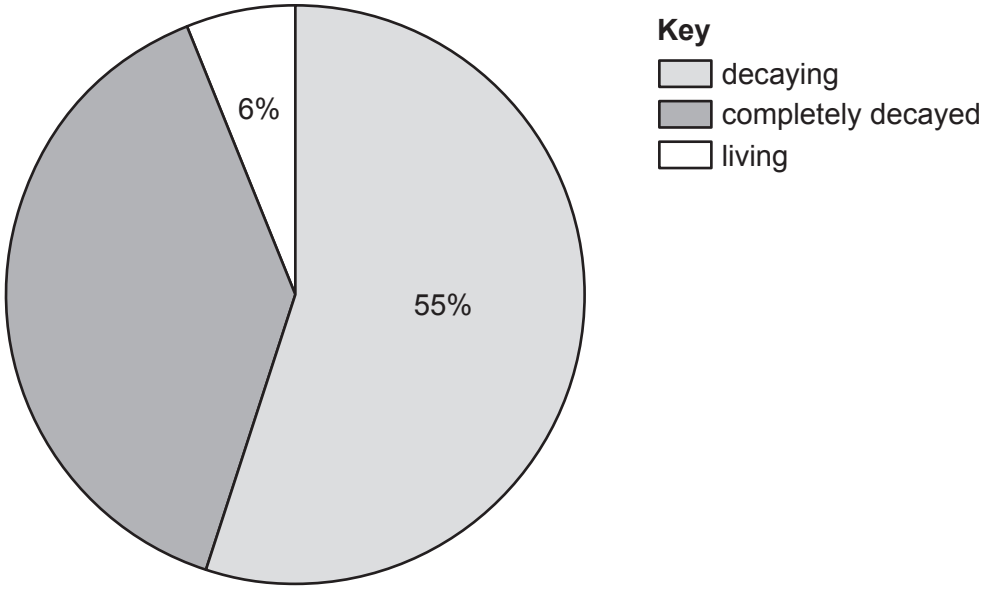
.....

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..... [3]

(b) The pie chart shows the organic matter content of a soil.



(i) Calculate the percentage of completely decayed organic matter.

..... % [1]

(ii) A student states that the quantity of completely decayed organic matter is lower in a soil from an intensive farm than in a soil from a forest.

Suggest reasons to support this statement.

.....

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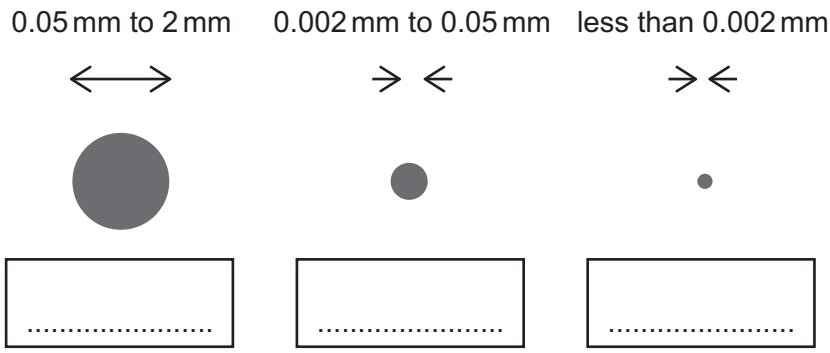
..... [3]

(c) The photograph shows layers in a soil.



Add a label line and the letter **M** to show the layer with the greatest quantity of organic matter. [1]

(d) **(i)** The diagram shows the sizes of the three different types of soil particle.



Complete the diagram with the names of the three types of soil particle. [3]

(ii) Organic matter and mineral particles are solid components of soil.

State **two** components of soil that are **not** solid.

1 .....

2 .....
[2]

[Total: 16]

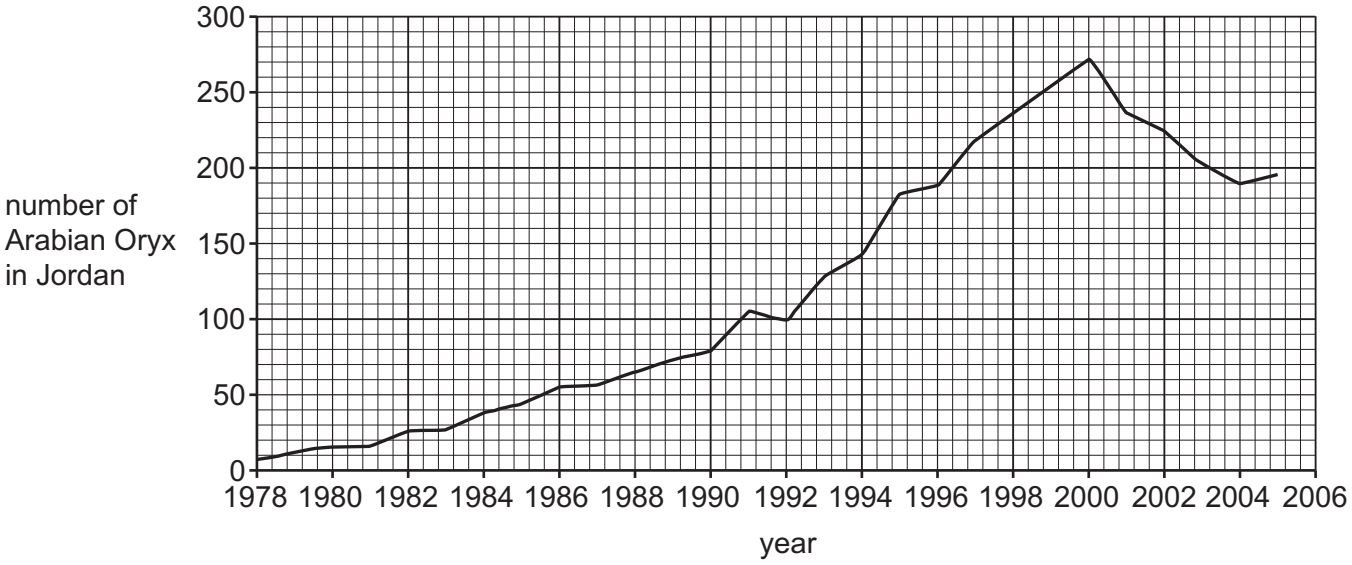
8 The photograph shows an Arabian Oryx, a species of antelope found in Jordan, in the Middle East.



In 1978, the government of Jordan introduced a strategy to conserve the Arabian Oryx.

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The graph shows the number of Arabian Oryx in Jordan from 1978 to 2005.



(a) (i) Suggest **three** risks to the Arabian Oryx species as a result of its population size in 1978.

1 .....

2 .....

3 .....

[3]

(ii) A student concludes that the strategy to conserve the Arabian Oryx species in Jordan was unsuccessful.

Discuss whether the student is correct. Use the graph to support your answer.

.....

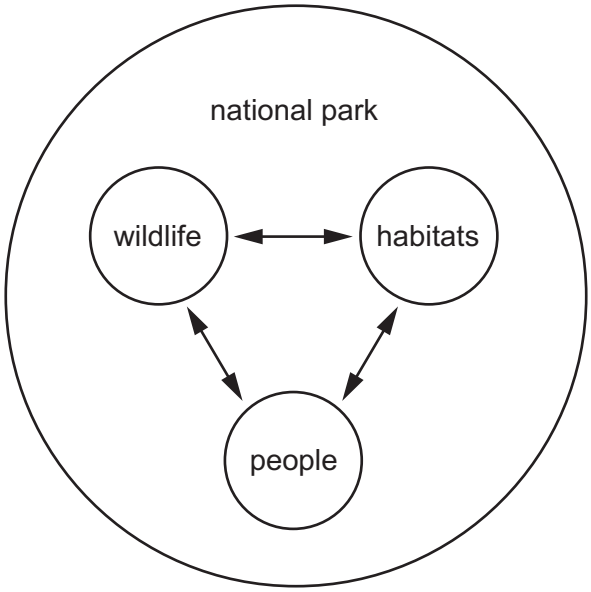
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..... [2]

(b) National parks are one strategy for conserving biodiversity of ecosystems.

The diagram shows interactions in a national park ecosystem.



The effectiveness of national parks as a method for conserving biodiversity depends on the interactions shown in the diagram.

Suggest reasons why.

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..... [5]

[Total: 10]

9 The El Niño Southern Oscillation (ENSO) reduces fish catch along the Pacific coast of South America.

(a) (i) Describe how the effects of El Niño reduce the fish catch along the Pacific coast of South America.

.....

.....

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..... [3]

(ii) Suggest the effects of a reduction in fish catch on the people living along the Pacific coast of South America.

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..... [3]

(b) World fish consumption per person is predicted to rise.

A report about the predicted percentage change in fish consumption per person for four continents is shown.

> South America will have the greatest increase of 18%.
>
> Asia is predicted to rise by 8%. Oceania is also predicted to rise by 8%.
>
> In Africa, fish consumption per person is expected to decrease by 2.8%.

(i) Present the data from the article in a suitable table to show the predicted percentage change in fish consumption per person for the four continents.

[3]

(ii) Suggest **one** sustainable method of meeting the increase in demand for fish.

.....

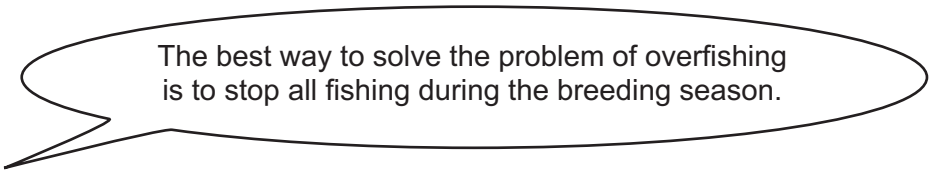
..... [1]

(iii) Suggest **one** reason for the predicted decrease in fish consumption per person in Africa.

.....

..... [1]

(c) A student says:



To what extent do you agree with this statement? Give reasons for your answer.

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..... [6]

[Total: 17]

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