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4290281146

ENVIRONMENTAL MANAGEMENT **0680/11**

Paper 1 Theory **October/November 2024**

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 [ ].

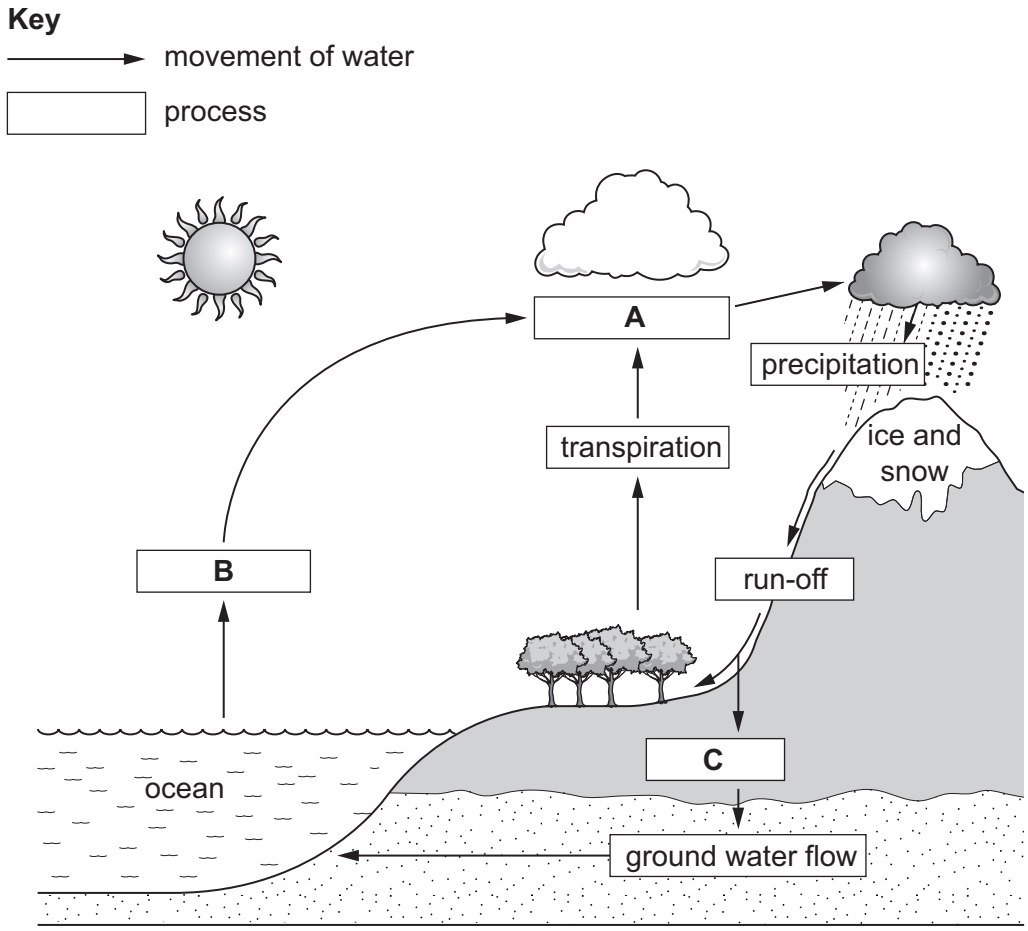
This document has **20** pages. Any blank pages are indicated.

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[Turn over

Section A

1 **(a)** The diagram shows part of the water cycle.



State the names of processes **A**, **B** and **C**.

A .....

B .....

C .....

[3]

(b) Desalination is a process used to produce fresh water.

(i) Name and describe **one** method of desalination.

name of method .....

description .....

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[3]

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(ii) Rivers, lakes and streams are natural sources of fresh water.

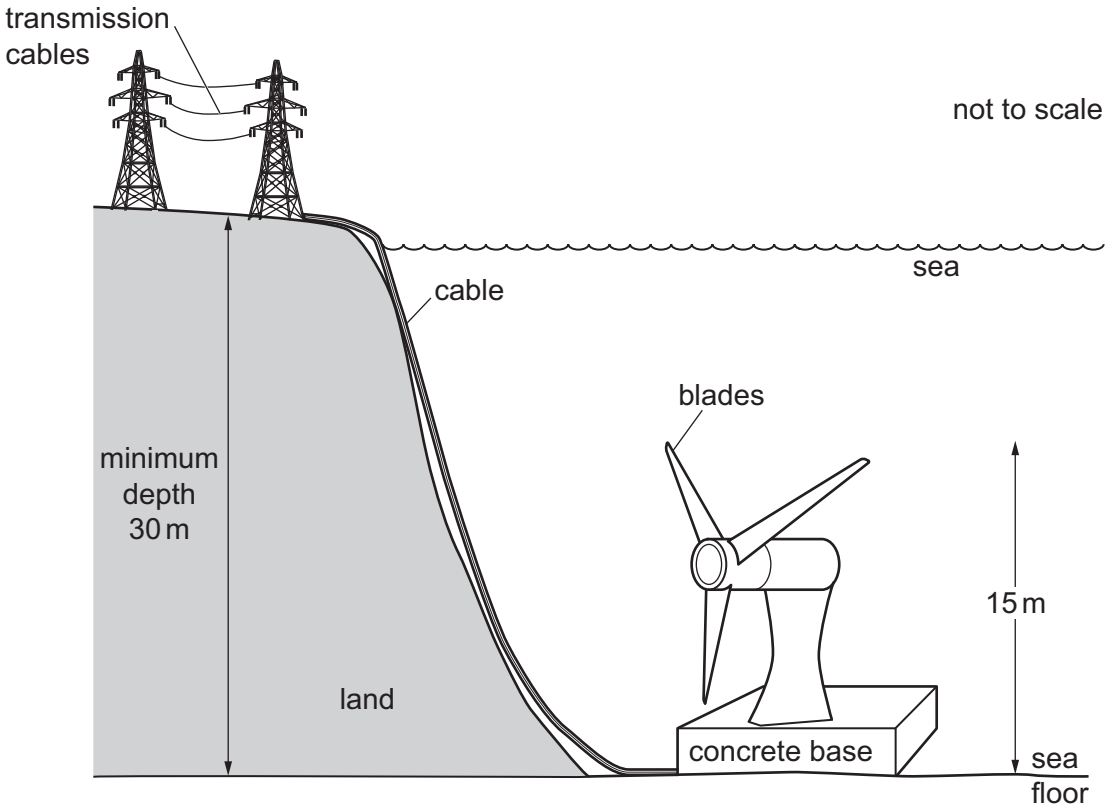
State **one** other natural source of fresh water.

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[Total: 7]

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2 **(a)** The diagram shows equipment used to generate electricity from tidal power.



(i) Describe how tidal power is used to generate electricity.

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..... [3]

(ii) Describe the limitations of using tidal power.

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(b) Tidal power is a renewable resource.

The photograph shows equipment used to generate electricity using another renewable resource.



State the renewable resource the equipment uses.

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3 Poor agricultural practices can cause soil erosion.

(a) Contour ploughing is a strategy used to reduce soil erosion.

Describe the process of contour ploughing on a slope.

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..... [2]

(b) Planting trees reduces soil erosion by decreasing surface run-off.

Explain how trees decrease surface run-off.

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..... [2]

[Total: 4]

4 Approximately half of the world's population are at risk of getting malaria.

Tick (✓) the correct box for each statement about malaria.

	true	false
Malaria is caused by bacteria.	☐	☐
Malaria is transmitted by drinking contaminated water.	☐	☐
Mosquitoes that carry malaria are a vector.	☐	☐

[2]

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Section B

5 **(a)** The pie chart shows data on fish populations for 104 species caught by one European country in 2021.

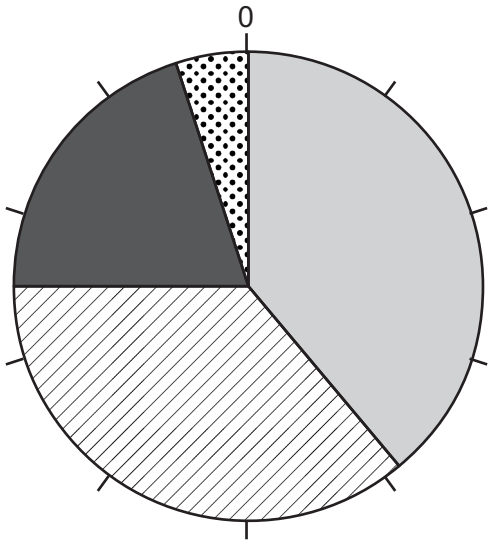
Key

limited data available

sustainable population

overfished population

no data



A student writes this conclusion from the data.

'The majority of fish populations are sustainable.'

State whether this is a valid conclusion from the data.

Give **two** reasons for your answer.

1.....

.....

2.....

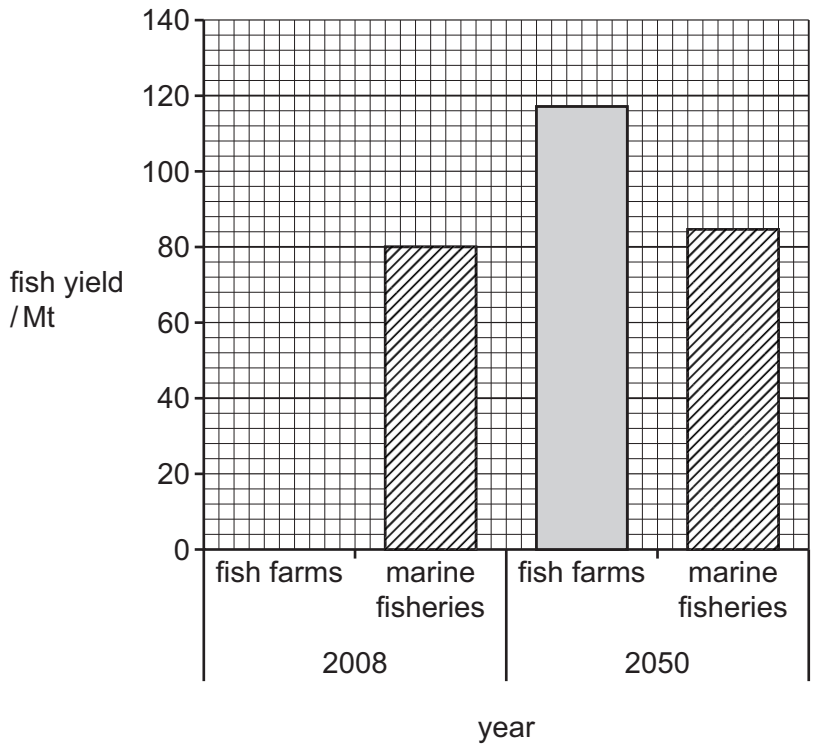
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(b) One strategy to reduce overfishing is farming of marine species.

The bar chart shows data about fish yield in megatonnes (Mt) from fish farms and marine fisheries in 2008 and predicted for 2050.



(i) Complete the bar chart to show that the fish yield in 2008 from fish farms was 62 Mt. [2]

(ii) Calculate the predicted percentage increase in fish yield from fish farms between 2008 and 2050.

..... [2]

(iii) State **three** strategies to reduce overfishing, other than fish farming.

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(c) **(i)** Suggest how climate change could reduce yields from some marine fisheries. Give reasons for your answer.

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..... [4]

(ii) Suggest **one** way an increase in extreme weather conditions could reduce the yield of fish farms.

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..... [1]

(d) The El Niño Southern Oscillation (ENSO) affects fish yields.

Describe how ENSO reduces fish yields along the Pacific coast of South America.

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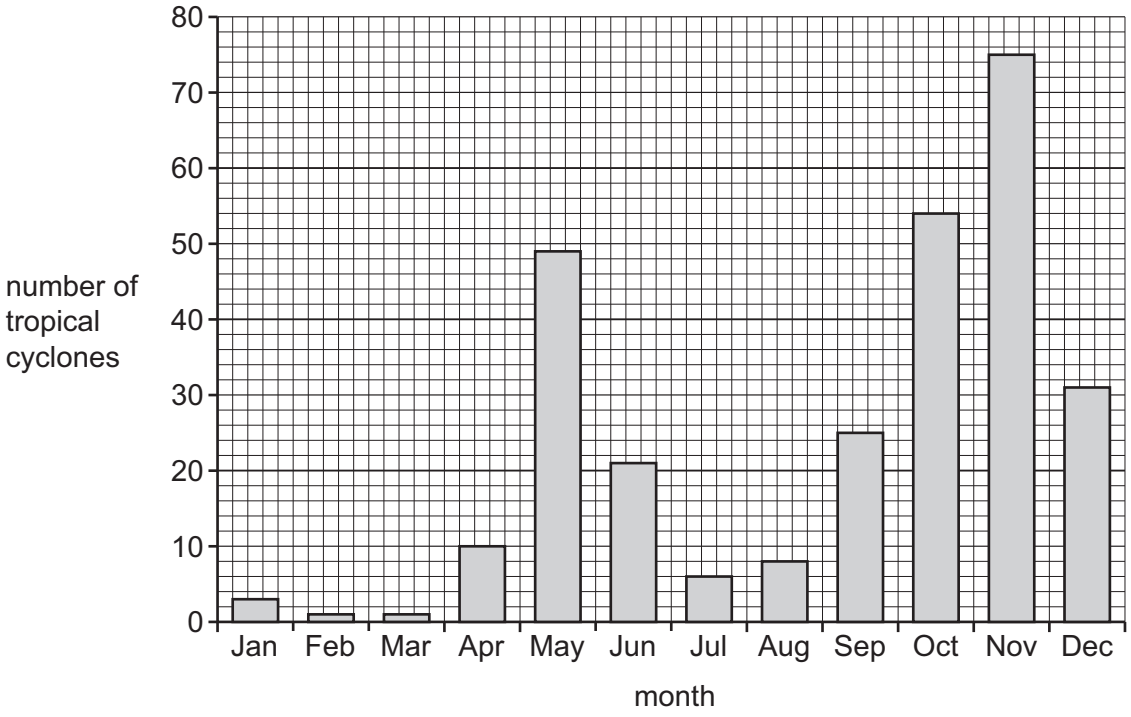
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6 **(a)** The bar chart shows the number of tropical cyclones over the North Indian Ocean for a 60-year period.



(i) State the month with the most tropical cyclones.

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(ii) The table shows some of the data from the bar chart.
Complete the table using a tally.

month	number of tropical cyclones
Jan	III
Feb	I
Mar	I
Apr	
May	
Jun	
Jul	𝍸 I
Aug	𝍸 III
Sep	𝍸 𝍸 𝍸 𝍸 𝍸
Oct	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 IIII
Nov	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸
Dec	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 I

[2]

(b) Complete the sentences about tropical cyclones.

Tropical cyclones form north and south of the Equator between ..... ° and ..... °.

The ocean surface temperature must be at least ..... °C.

This temperature must extend to a depth of at least ..... m.

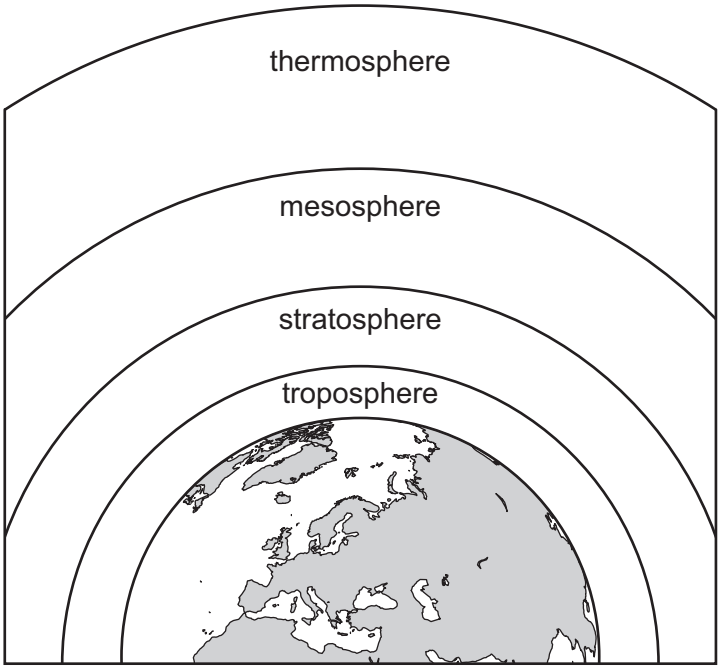
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7 Ozone depletion occurs in the atmosphere.

(a) The diagram shows the structure of the atmosphere.



Label the diagram with an **X** to show where ozone depletion occurs. [1]

(b) Explain why ozone depletion is a concern.

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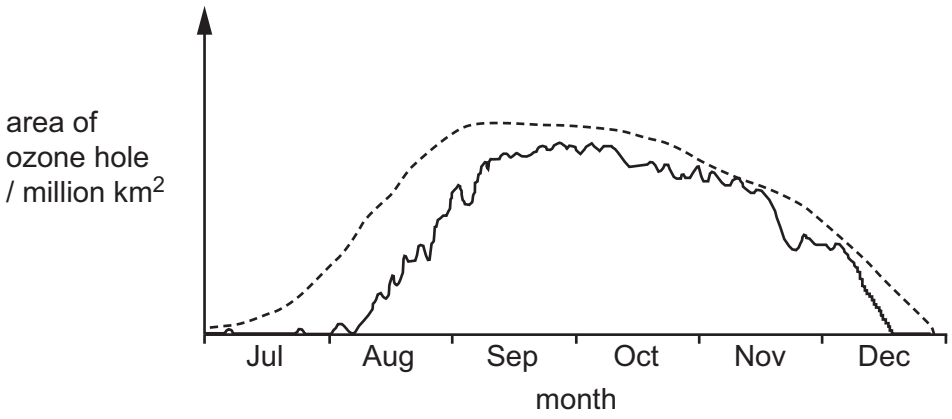
(c) Ozone depletion over Antarctica is known as an ozone hole.

The graph shows the area of the ozone hole over Antarctica for July to December 2021 and the highest values measured since 1979.

Key

—— July to December 2021

- - - - - highest value measured since 1979



Discuss whether strategies to reduce the area of the ozone hole have been successful.

Refer to the strategies and use the graph to support your answer.

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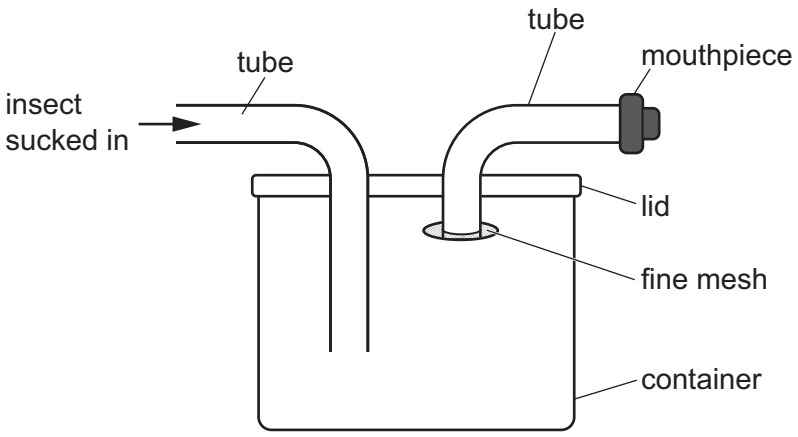
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8 **(a)** Pooters are used to collect insects by sucking them into a container.

The diagram shows a pooter.



(i) Suggest why there is a fine mesh over the end of one of the tubes.

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..... [1]

(ii) Suggest why the mouthpiece is replaced between each user.

.....

..... [1]

(iii) Suggest why the pooter should be emptied between each insect collection.

.....

..... [1]

(iv) Suggest why water forms on the inside of the container if insects are kept inside the pooter for long periods of time.

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..... [2]

(v) A student wants to use a pooter to investigate the number of mosquitoes in an area of land 5 m by 5 m.

Suggest **one** limitation of using a pooter for this investigation.

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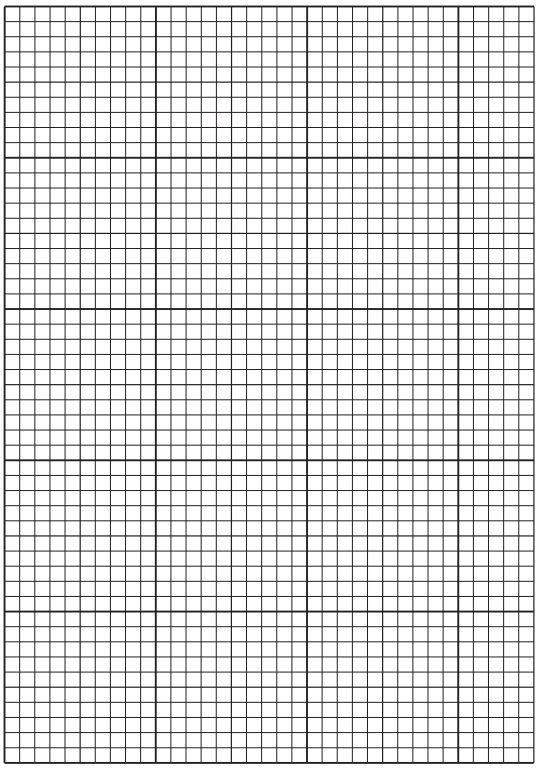
(b) A scientist in India investigates the number of mosquitoes in a house.

The scientist uses a pooter to collect mosquitoes at 10-minute intervals in the house.

The table shows the results.

time / minutes	number of mosquitoes
0	90
10	78
20	60
30	59
40	45
50	25
60	20

(i) Plot the data as a line graph on the grid.



[4]

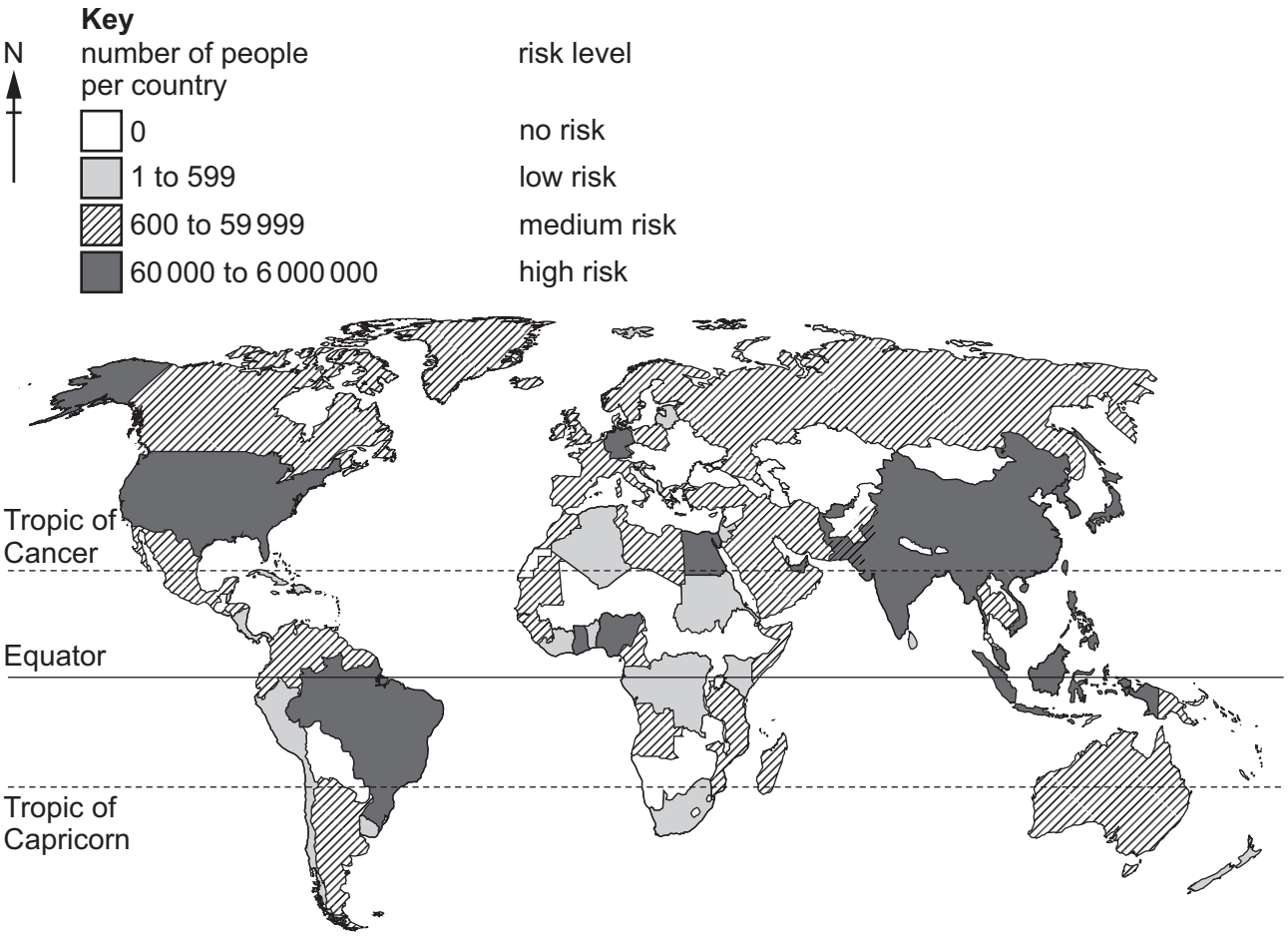
(ii) Calculate the total number of mosquitoes the scientist collected.

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[Total: 11]

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9 **(a)** The map shows the number of people per country predicted to be at risk from coastal flooding by 2030.



(i) Describe the distribution of people predicted to be at **high** risk from coastal flooding by 2030.

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(ii) Suggest why the predicted risk to people from coastal flooding is **low** on the west coast of South America.

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..... [2]

(iii) Flooding can lead to water-related diseases and loss of life.

State **two** other negative impacts of flooding.

1 .....

2 .....

[2]

(b) Explain how underwater earthquakes can cause flooding.

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(c) Flooding can be caused by a rise in sea levels.

Explain how climate change causes sea levels to rise.

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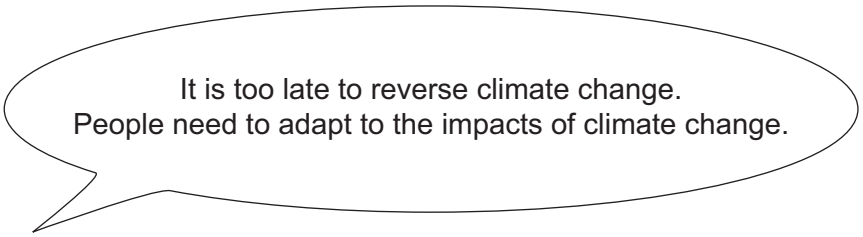
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(d)



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

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[Total: 17]

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