Cambridge
O Level

Cambridge International Examinations
Cambridge Ordinary Level

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER				

7823313063

ENVIRONMENTAL MANAGEMENT **5014/11**

Paper 1 **October/November 2017**

2 hours 15 minutes

Candidates answer on the Question Paper.

No Additional Materials are required.

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.

Answer **all** questions.

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

Write your answers in the spaces provided on the Question Paper.
All questions in Section A carry 10 marks.
Both questions in Section B carry 40 marks.

At the end of the examination, fasten all your work securely together.
The number of marks is given in brackets [ ] at the end of each question or part question.

This document consists of **24** printed pages.

CAMBRIDGE International Examinations

Section A

Answer **all** the questions.

1 **(a)** The photograph shows a volcano in Guatemala and the table gives information about volcanoes.

volcano type	nature of eruption	shape of the volcano
fissure cone	lava flows from a crack or fissure; small amounts of gas escape frequently	very low, with gently sloping sides
shield volcano	lava flows from a vent; gases escape frequently	high, with gently sloping sides; 5° to 10° slopes
stratovolcano	ash, shattered rock and lava are ejected in a violent eruption; large amounts of gases are released in occasional explosions	high, with steeply sloping sides; 10° to 30° slopes

(i) Use the information to name the type of volcano in the photograph.

.....[1]

(ii) Use the information to state the dangers an eruption from this type of volcano could cause for the people who live in the town.

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.....[2]

(iii) Suggest what could be done to try to prevent loss of life in this town if an eruption occurred.

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.....[1]

(iv) Suggest reasons why people live close to volcanoes.

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.....[3]

(b) Explain why volcanoes form at destructive (convergent) plate boundaries.

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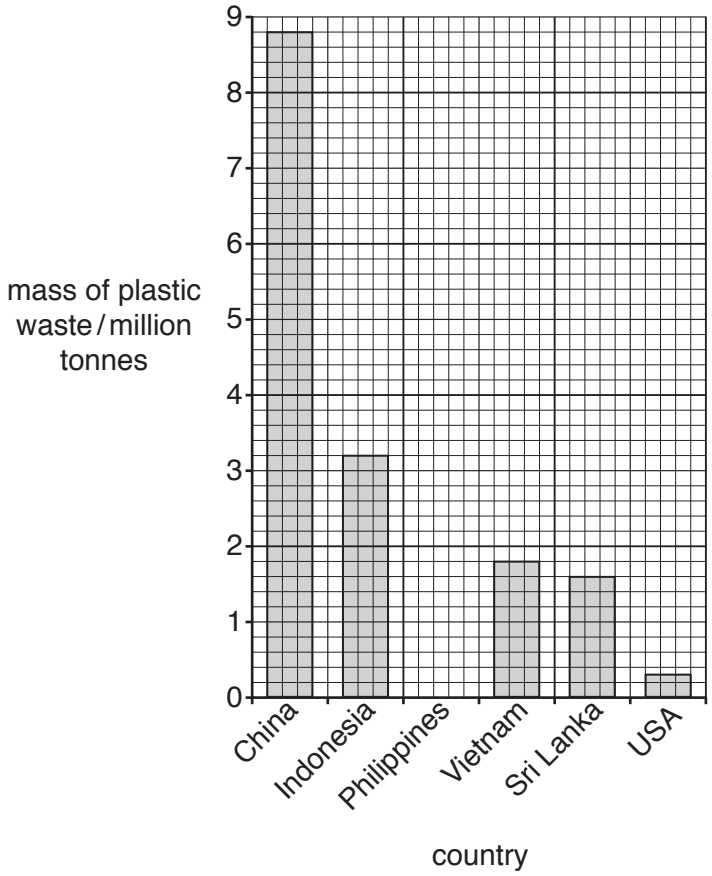
[Turn over

2 **(a)** The bar graph shows the mass of plastic waste that entered oceans in 2010 from six countries.



(i) Complete the bar graph to show that 1.8 million tonnes of plastic waste entered the ocean from the Philippines in 2010. [1]

(ii) State the mass of plastic waste that entered the ocean from Indonesia.

..... million tonnes [1]

(iii) Compare the mass of plastic waste that entered the oceans from the coast-lines of China and the USA in 2010.

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.....[1]

(b) Suggest why the amount of plastic waste entering the oceans varies from country to country.

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(c) Describe the problems caused by plastic waste in the oceans.

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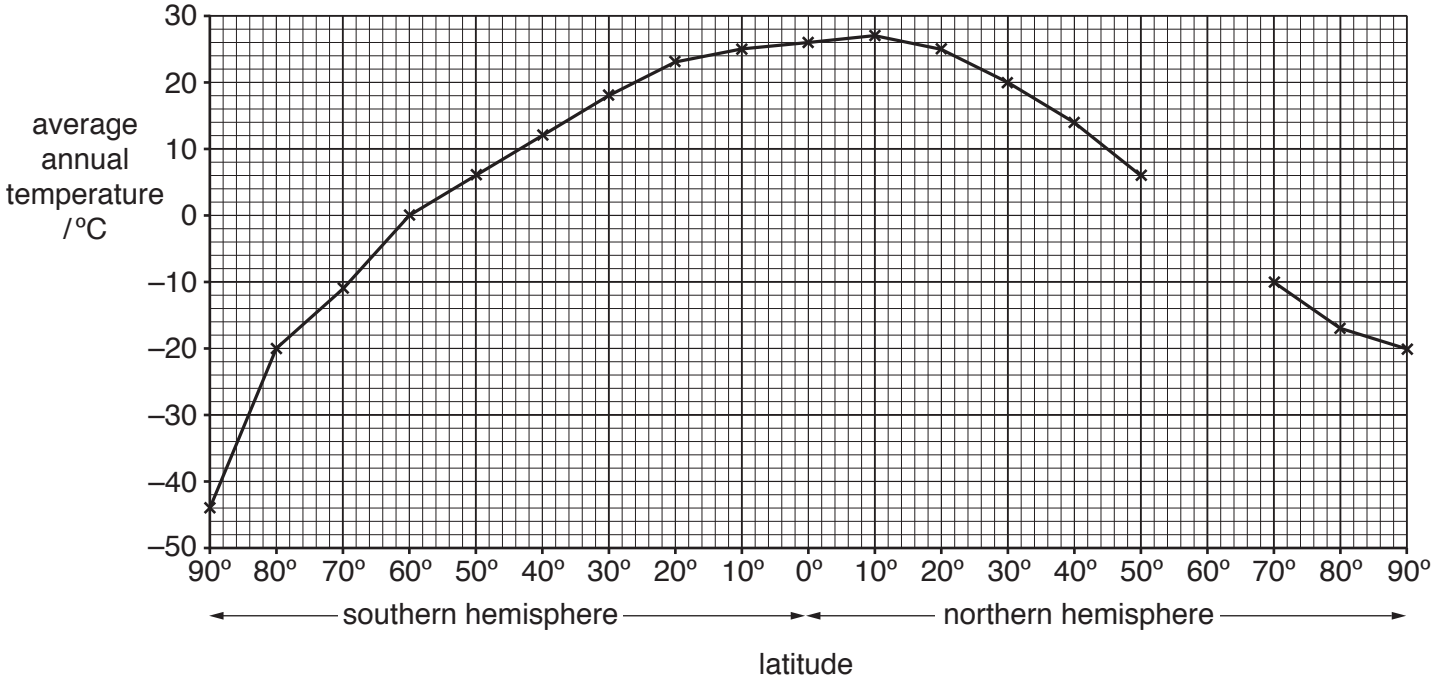
.....[4]

3 **(a)** The graph shows average annual temperatures at different latitudes.



(i) Use the information in the table to complete the graph.

latitude	60° N
temperature	–1°C

[1]

(ii) Describe the change in average annual temperature between the Equator (0°) and 70° N.

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.....[2]

(iii) Explain the difference in the average annual temperature at the Equator (0°) and at 70° N.

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.....[2]

(b) (i) Explain how human activities could increase the global atmospheric temperature.

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(ii) Suggest why some countries may **not** agree to reduce activities that increase the global atmospheric temperature.

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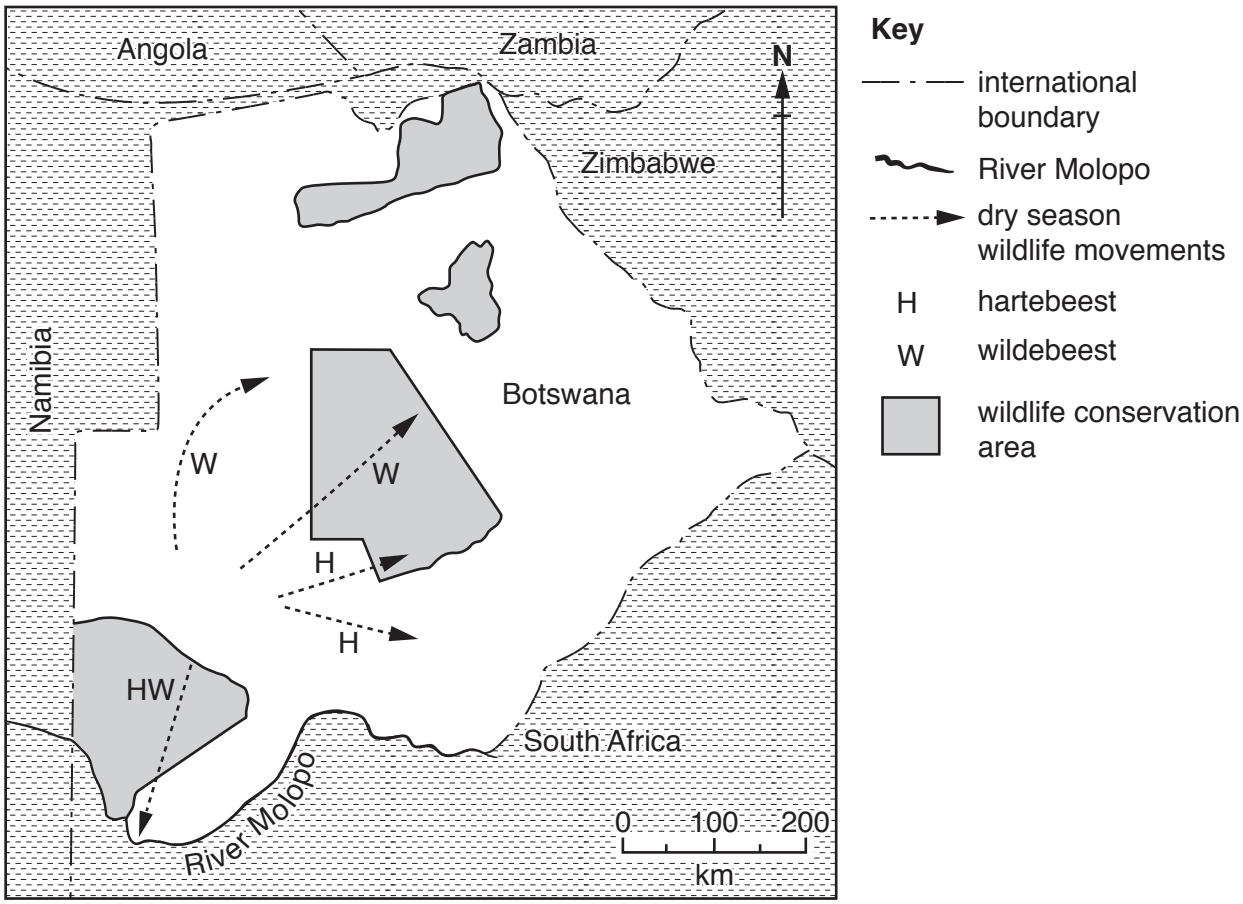
[Turn over

4 The map shows wildlife conservation areas in Botswana and the dry season migrations of some animals.



(a) (i) State one way in which migrations of hartebeest differ from those of wildebeest.

.....

.....[1]

(ii) Circle the distance that the hartebeest and wildebeest migrate in the dry season to the River Molopo.

140 km 170 km 200 km 230 km [1]

(iii) Use the map to suggest why some animals move to the southern border of Botswana in the dry season.

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.....[1]

(b) The table shows strategies for setting up conservation areas in Botswana and Namibia.

	country	
	Botswana	**Namibia**
strategy	move local people away from their homes to another area	make local people responsible for the well-being of wildlife on their land and allow them to use the wildlife sustainably

(i) The Botswana government is moving San people away from the lands where they have lived for thousands of years. Many of the San are hunter-gatherers.

Explain why some people think that this forced movement will:

- destroy the way of life of the San people
- make them dependent on others for their needs
- lead them to have health problems.

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.....[4]

(ii) Suggest why the strategy used by the Namibian government could benefit both the people and the wildlife that share the same land.

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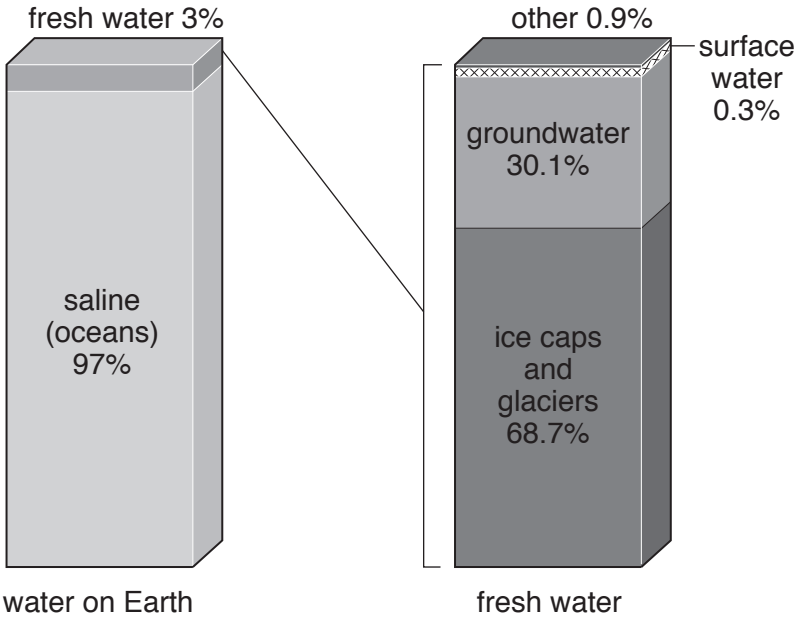
Section B

Answer **both** questions.

5 **(a)** The diagram shows the distribution of water on Earth.



(i) State the percentage of fresh water available on Earth.

.....% [1]

(ii) Explain what is meant by the term *groundwater*.

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.....[1]

(iii) Suggest a reason why the water stored in ice caps and glaciers is not directly available for human use.

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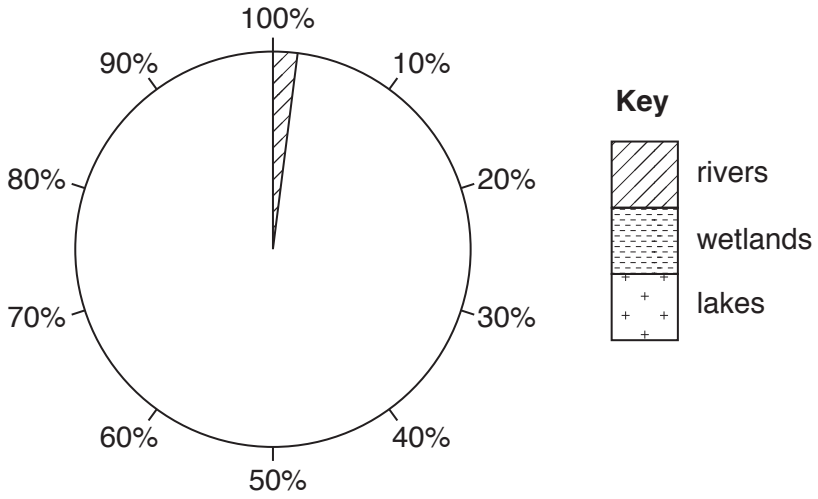
.....[1]

(iv) The table shows the sources of fresh surface water on Earth.

Complete the pie graph using the key to show this information.

source of fresh surface water	percentage
rivers	2
wetlands	11
lakes	87



[3]

(v) Water in rivers and lakes is often polluted.

Describe how human activity can cause rivers and lakes to become polluted.

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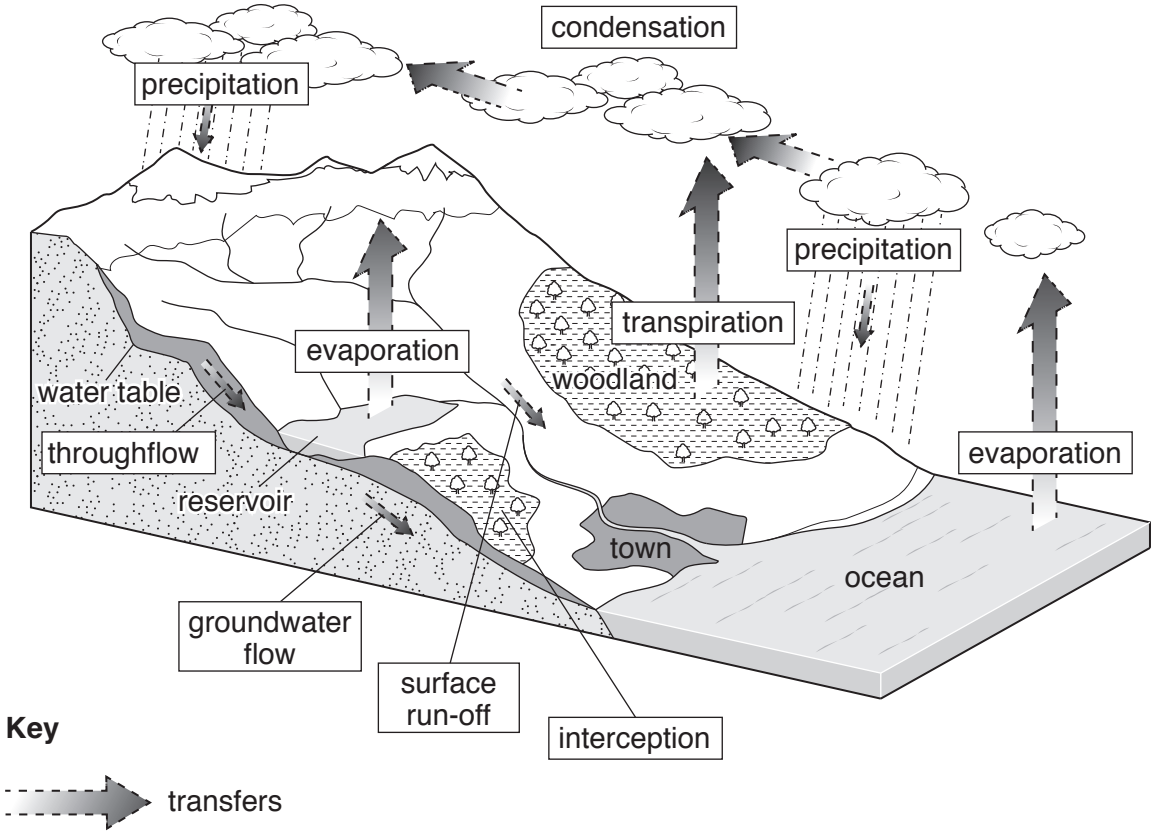
(b) The diagram shows the water cycle.



(i) State **two** transfers of water shown on the diagram.

1 .....

2 .....

[2]

(ii) State the water storage scheme, shown on the diagram, that is the result of human activity.

.....[1]

(iii) State the name of the alternative source of energy that could be provided by this water storage scheme.

.....[1]

(iv) Complete the table of definitions using terms from the diagram.

definition of water cycle term	term from diagram
water is stopped from reaching the ground by trees and plants	
water is heated by the Sun and turns into water vapour	
water returning to the ground as rain, ice, sleet or snow	

[3]

(v) Suggest reasons why river flooding might occur if:

the woodland shown in the diagram was removed

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the area of the town was increased.

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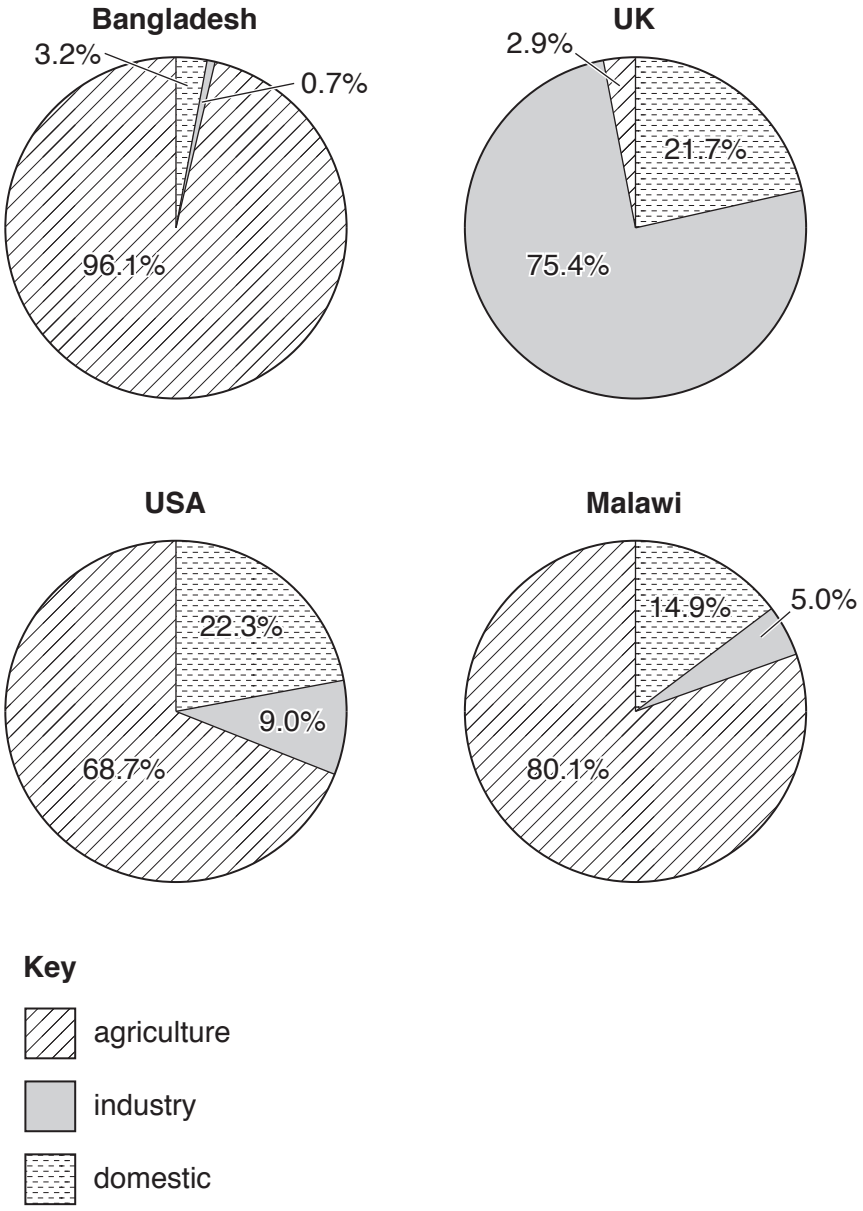
[5]

(c) The pie graphs show the use of water in four countries.



(i) State the name of the country that uses the greatest percentage of their water for agriculture.

.....[1]

(ii) State the name of the country that uses the smallest percentage of their water for industry.

.....[1]

(iii) Domestic use is water used in the home.

Calculate the difference in the percentage of water used for domestic use in the UK compared with Bangladesh.

.....% [1]

(iv) Suggest reasons why the UK, which is a developed country, uses a greater percentage of their water in the home than Bangladesh which is a developing country.

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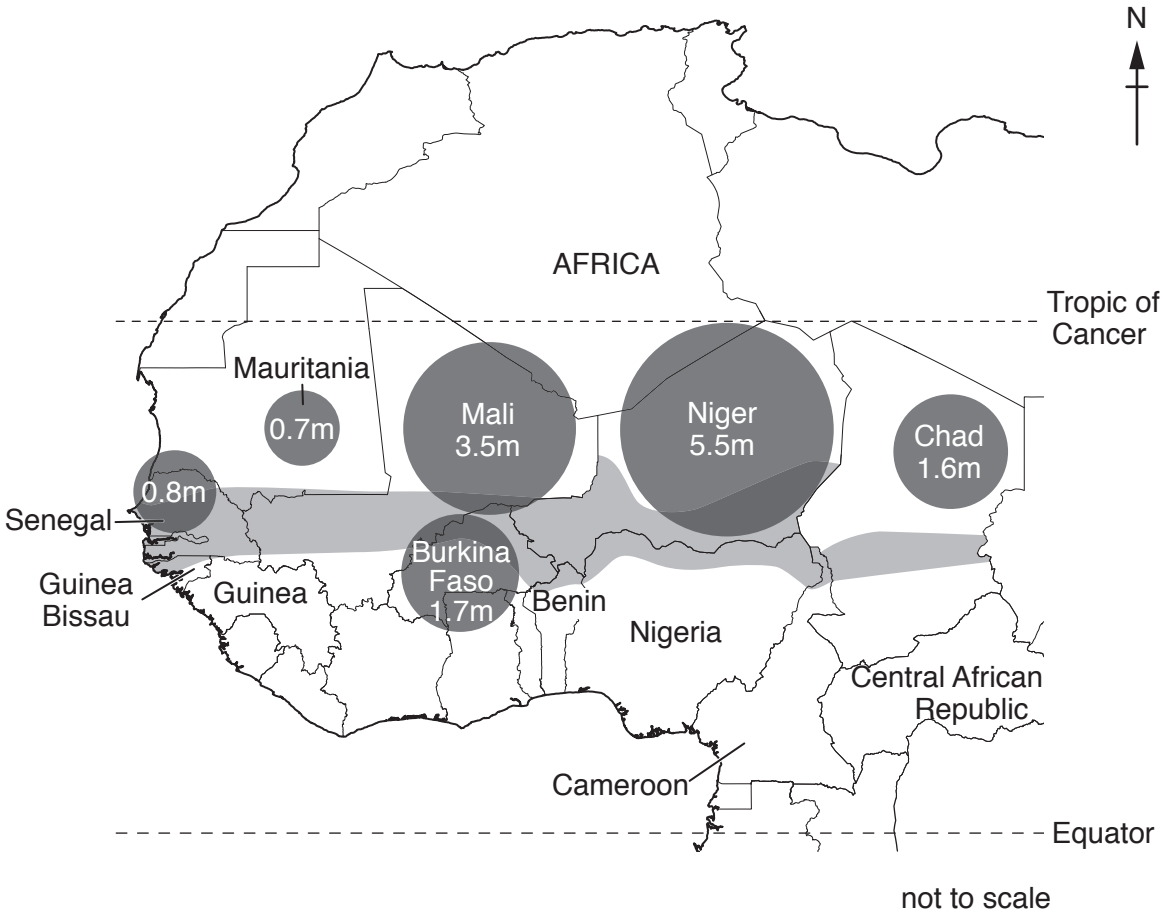
.....[3]

[Turn over

(d) The map shows countries affected by drought in the Sahel region of Africa. It also shows the number of people at risk of food shortage.



Key

Sahel area at risk of drought

number of people at risk of food shortage

m = millions of people

international boundary

(i) State the name of a country with part of its land at risk of drought, which shares a border with Cameroon.

.....[1]

(ii) Describe the distribution of the area affected by drought.

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.....[2]

(iii) The circles on the map show the number of people in each country that are at risk of food shortage.

Write the names of these countries into the table in rank order. Two have been completed for you.

rank order	name of country
1	
2	
3	
4	
5	Senegal
6	Mauritania

[2]

(e) Suggest reasons why people in some areas suffer more from the effects of drought than people in other areas.

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.....[6]

[Turn over

6 **(a)** The table shows a classification of some farming types.

	crops	grazing	subsistence	commercial
rice farming	✓		✓	
dairy farming		✓		✓
shifting cultivation	✓		✓	
cattle ranching		✓		✓
plantations	✓			✓

(i) State **one** type of subsistence farming shown in the table.

.....[1]

(ii) State **one** type of commercial farming shown in the table where animals are grazed.

.....[1]

(iii) Explain the difference between commercial and subsistence farming.

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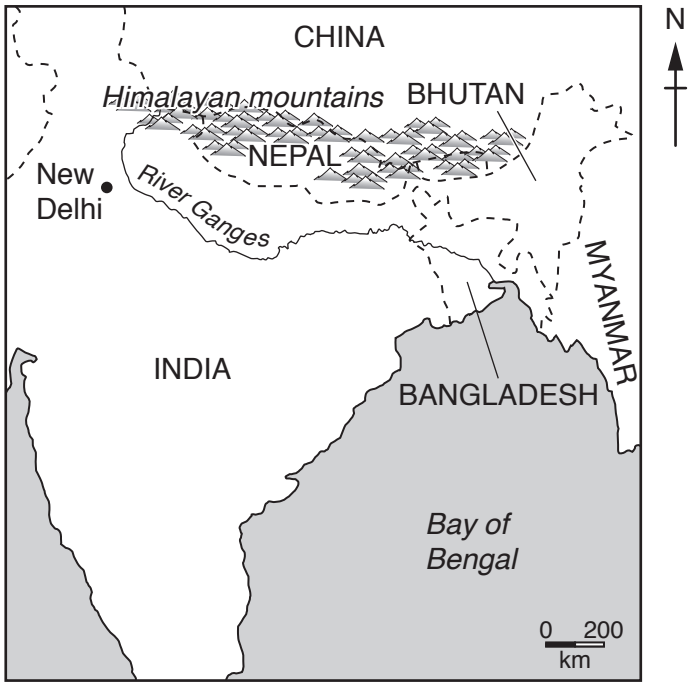
.....[2]

(iv) State **one** other way that can be used to classify farming.

.....[1]

(b) The map shows part of Asia.



Key

River Ganges

international boundary

city

(i) Describe the location of the River Ganges.

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.....[2]

(ii) The table shows some information about a farming system for rice cultivation along the River Ganges.

requirements	farming activities	products
heavy rain high temperatures fertile soil flat land hand tools hand labour water buffalo	ploughing planting seeds transplanting seedlings weeding	rice to feed the family small profits fish for protein manure

Place the following into the correct column in the table.

harvesting seeds [2]

(iii) State **one** piece of evidence that this farming system is:

growing crops .....

.....

subsistence farming. .....

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[2]

(c) (i) A subsistence farmer was given a loan to increase the yield from their farm.

Choose **two** of the following and explain how each would help the farmer to increase yields.

- irrigation
- pesticides
- high-yielding varieties of seeds

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.....[4]

(ii) Fertilisers can also be used to increase yields.

Explain why it is important not to overuse fertilisers.

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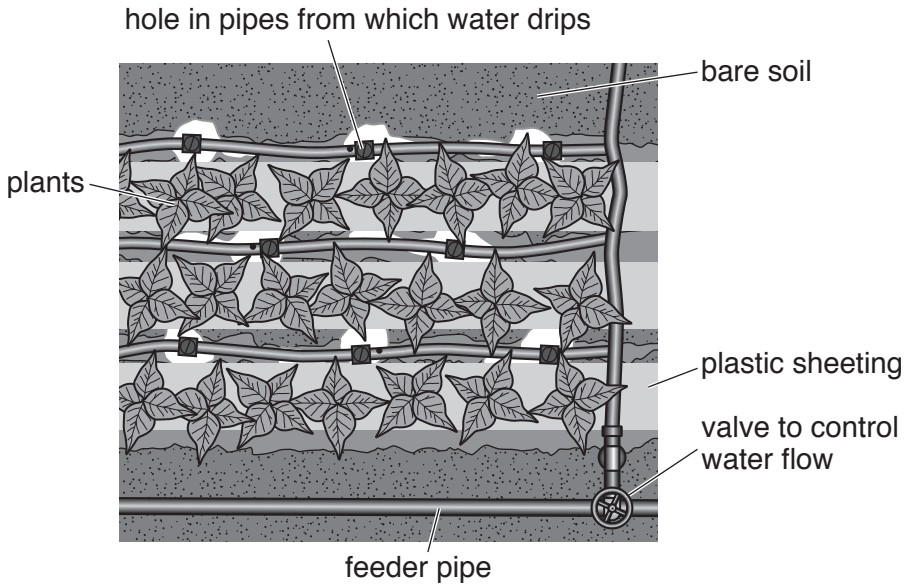
(d) (i) The diagram shows trickle drip irrigation, as seen from above.



Suggest how the irrigation system shown in the diagram works.

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.....[3]

(ii) Suggest **two** advantages of this type of irrigation.

1 .....

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2 .....

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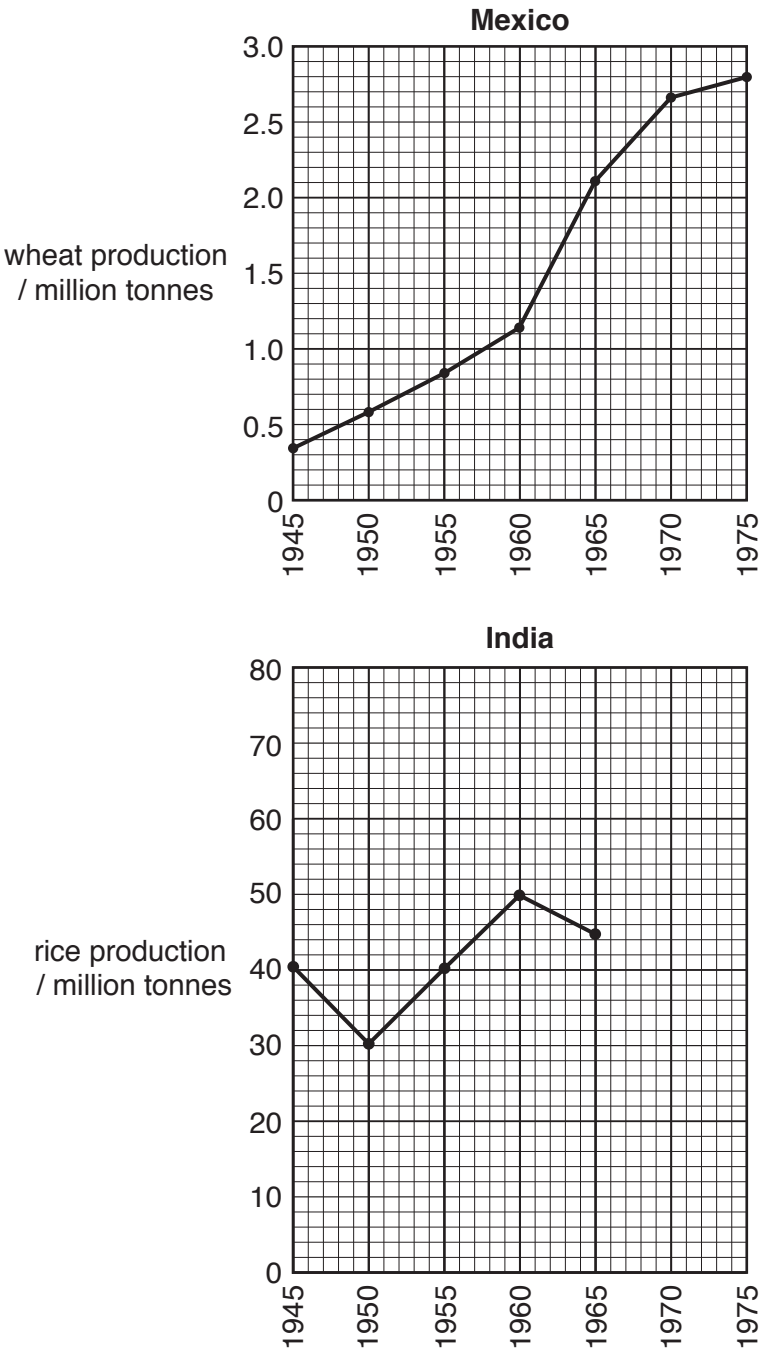
[2]

(e) The graphs show wheat production in Mexico and rice production in India during the green revolution.



(i) Use the information from the graphs to describe the trend in wheat production in Mexico from 1945 to 1975.

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.....[2]

(ii) State the five-year period during which wheat production increased the most in Mexico.

.....[1]

(iii) Complete the line graph for India by plotting the following information.

year	rice production / million tonnes
1970	65
1975	71

[2]

(iv) Calculate the increase in rice production in India between 1945 and 1975. Give the unit.

.....[1]

(v) Suggest reasons why some people did not agree with the green revolution even though production increased.

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.....[3]

(f) Many people in rural areas of developing countries use fuelwood. For example, 90% of people in countries like Burkina Faso and Nepal rely on fuelwood. It can be a renewable energy source as long as trees are replanted at the same rate as they are cut down. Unfortunately, population growth means that too many trees are being cut down leading to soil erosion and desertification.

(i) State what is meant by a *renewable energy source*.

.....[1]

(ii) State what percentage of people rely on sources other than fuelwood in Burkina Faso and Nepal.

.....[1]

(iii) Suggest why some people are in favour of using biomass as an alternative energy source whilst others are not.

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.....[6]