

CANDIDATE
NAME

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CENTRE
NUMBER

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CANDIDATE
NUMBER

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ENVIRONMENTAL MANAGEMENT

0680/22

Paper 2

February/March 2015

1 hour 45 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 **both** questions.

Electronic calculators may be used.

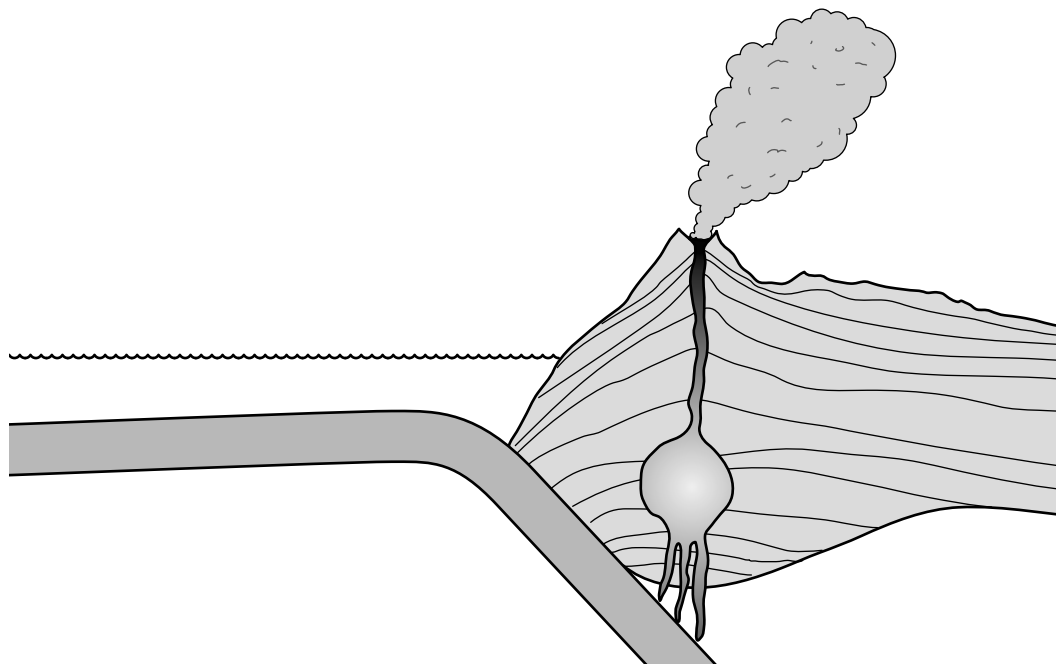
You may lose marks if you do not show your working or if you do not use appropriate units.

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 **14** printed pages and **2** blank pages.

1 (a) Look at the cross section of a plate boundary.



(i) Add labels **A**, **B**, **C** and **D** to the diagram of a cross section of a plate boundary to match the features listed below.

- A** trench
- B** mantle
- C** continental crust
- D** magma

[4]

(ii) On the cross section, draw arrows to show the direction of movement of the two plates.

[1]

(iii) State the name of the type of plate boundary shown in the diagram.

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(iv) Explain why volcanic eruptions occur along this type of plate boundary.

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- (v) Some people live in areas where volcanic eruptions occur because there is work mining various metal ores. Suggest **other** reasons why people might live near volcanoes.

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- (b) Look at the table, which shows details of copper mining, processing and use. Copper and other metal ores are often found in areas of igneous rock.

region	copper / thousand tonnes		
	mined within region*	processed within region (including recycled copper)	used within region
Africa	1449	1057	251
North and South America	9384	5067	2837
Asia	3134	9732	12 130
Europe	1691	3796	4201
Oceania	1042	460	112
world total	16 700	20 112	19 531

*This is the amount of copper within the mined ore.

- (i) In which region was the greatest amount of copper mined?

.....[1]

- (ii) In which region was the greatest amount of copper used?

.....[1]

- (iii) Calculate how much more copper was processed than was mined worldwide.

Space for working.

..... thousand tonnes [1]

(iv) Copper ores often contain only one percent copper. Suggest **one** reason why some of the processing of the copper ore is done at the mine.

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.....[1]

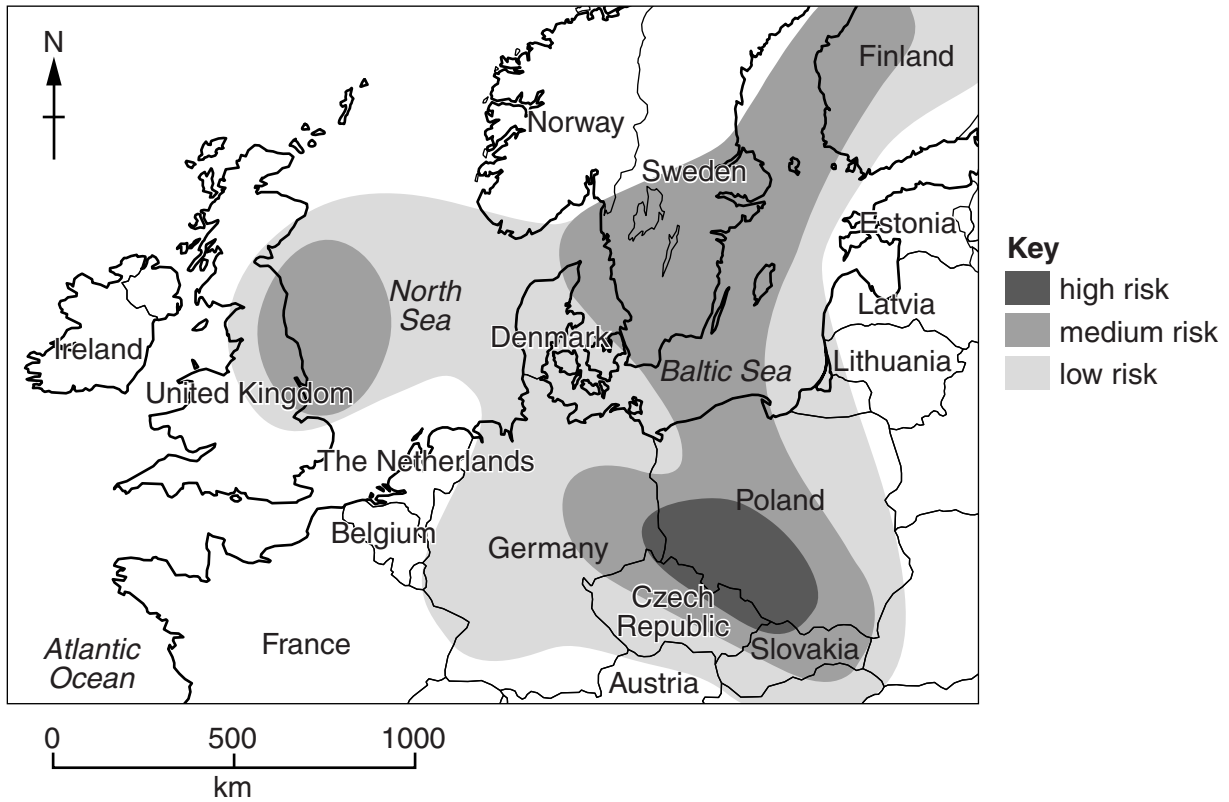
(v) Recycling of copper is the reason why more copper is processed worldwide than mined each year. Describe the benefits of recycling copper.

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(c) The processing of copper ores releases large amounts of sulfur dioxide. Describe how releasing sulfur dioxide into the atmosphere can cause acid rain.

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(d) Look at the map, which shows the risk of acid rain in part of Europe.



(i) Describe the distribution of acid rain risk in the part of Europe shown on the map.

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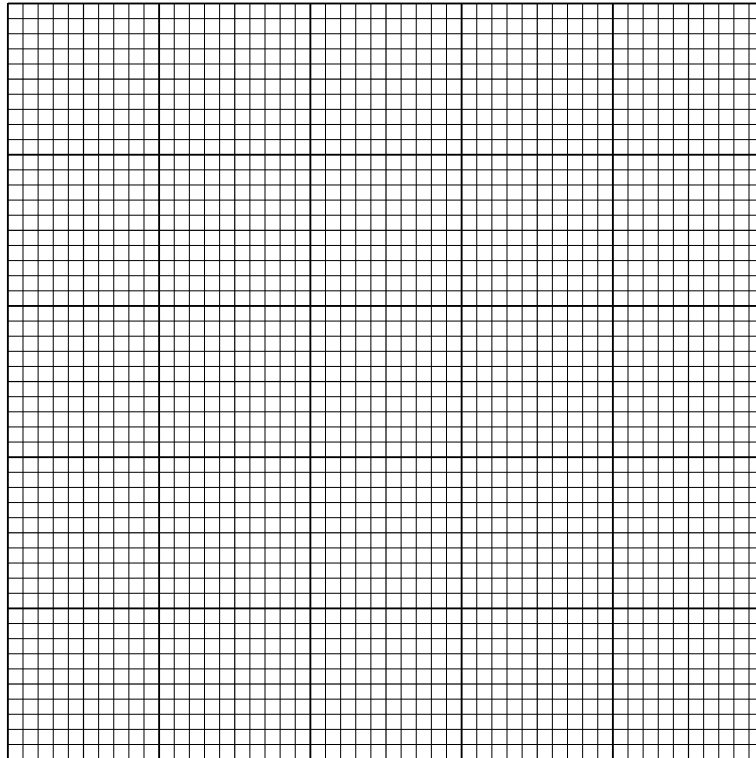
(ii) Suggest why some parts of Europe have a high risk of acid rain.

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- (iii) The table shows global sulfur dioxide (SO₂) emissions released into the atmosphere from 1980 to 2010.

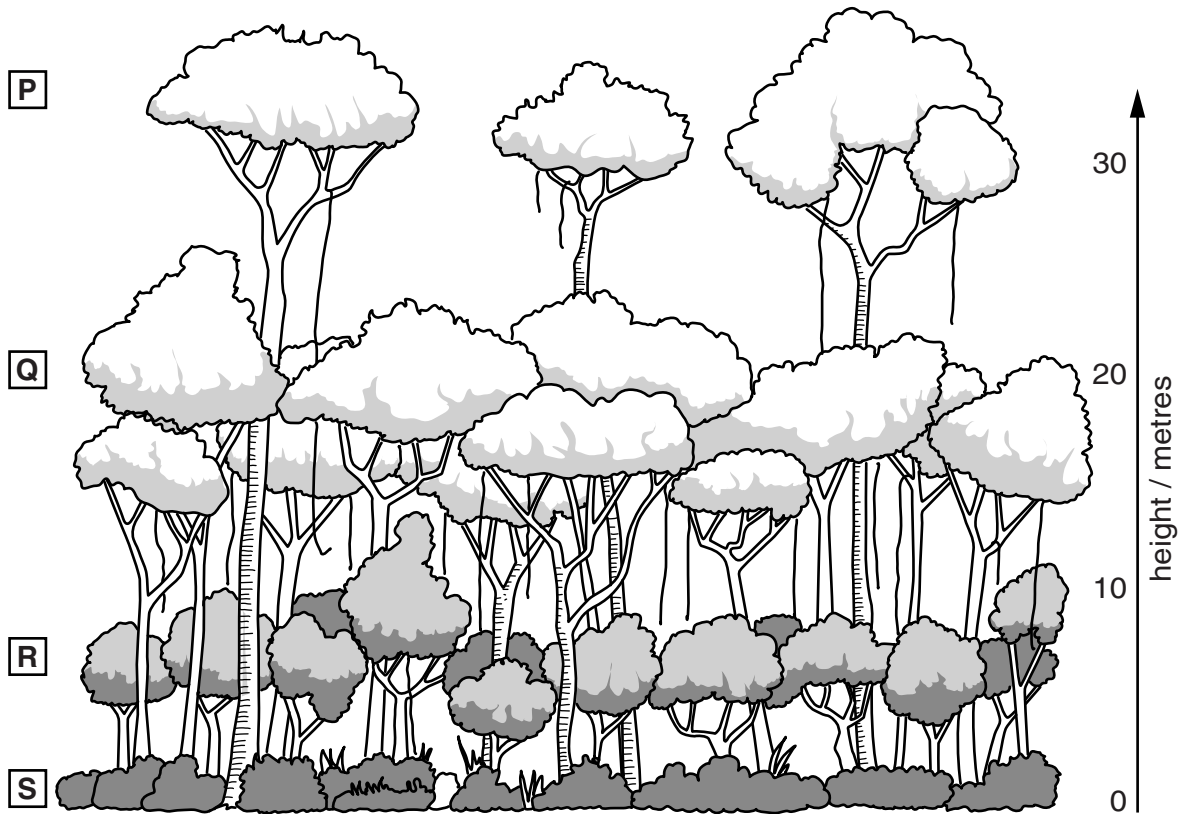
year	sulfur dioxide / million tonnes
1980	17.7
1985	16.0
1990	15.9
1995	11.8
2000	11.0
2005	9.7
2010	7.5

Draw a line graph on the grid below to show sulfur dioxide emissions from 1980 to 2010.



[4]

2 (a) Look at the diagram of a tropical rainforest.



(i) Match the letters **P**, **Q**, **R** and **S** shown on the diagram to the names of the layers of the tropical rainforest.

name	letter
canopy
emergent
ground layer
understory

[3]

(ii) Explain why some trees grow so tall in tropical rainforests.

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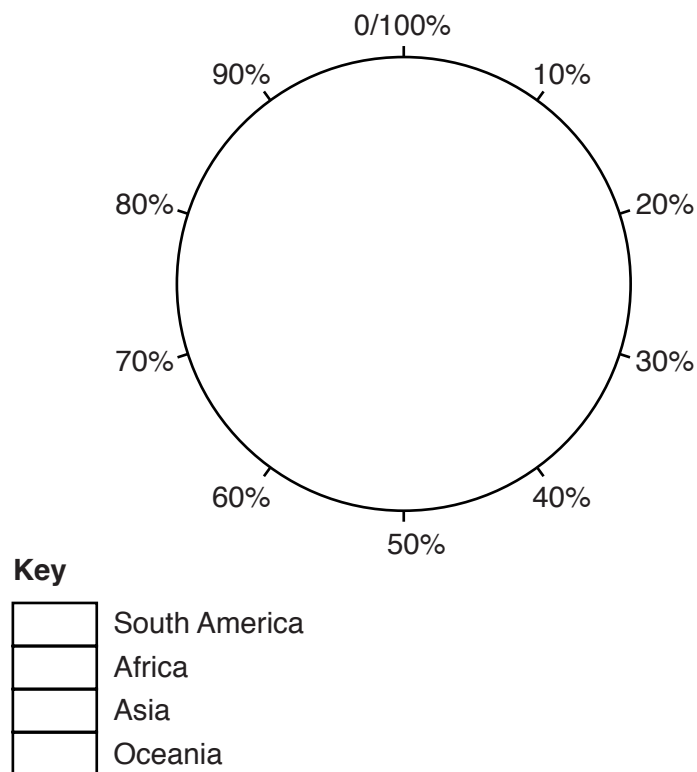
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(b) Look at the table below, which shows the percentage amount of tropical rainforest by continent.

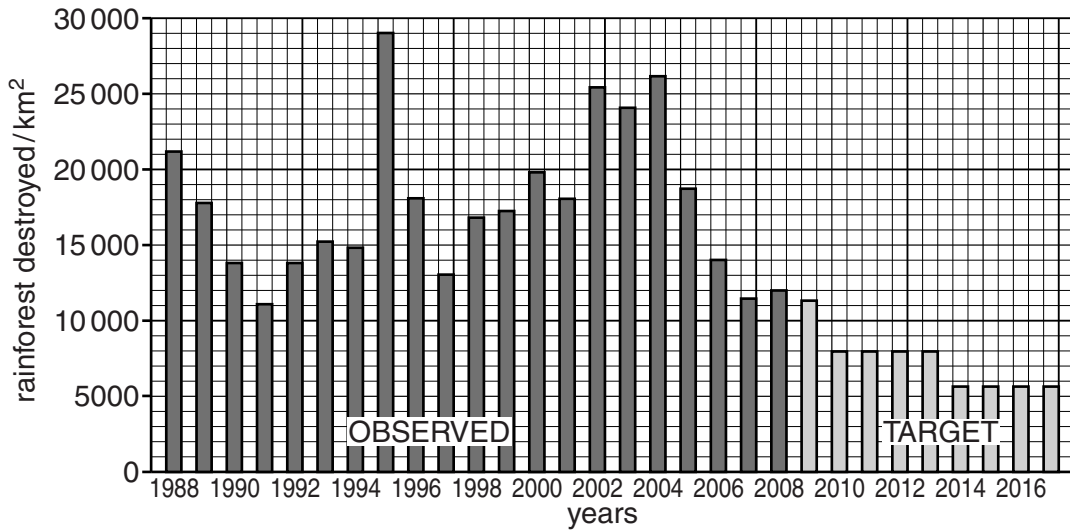
continent	world tropical rainforest / %
South America	45
Africa	30
Asia	16
Oceania	9

Draw a pie graph in the circle below to show the percentage of tropical rainforest in each continent and complete the key.



[3]

(c) Look at the graph, which shows the rate of deforestation of the Amazon rainforest in Brazil and the target to reduce the rate of deforestation. This target was set by the government of Brazil in 2008.



(i) In which year was deforestation greatest and how much forest was destroyed?

year

amount of forest destroyed km² [2]

(ii) Describe the trend in deforestation from 2002 to 2008.

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(iii) State the target for deforestation for 2017.

target for deforestation km² [1]

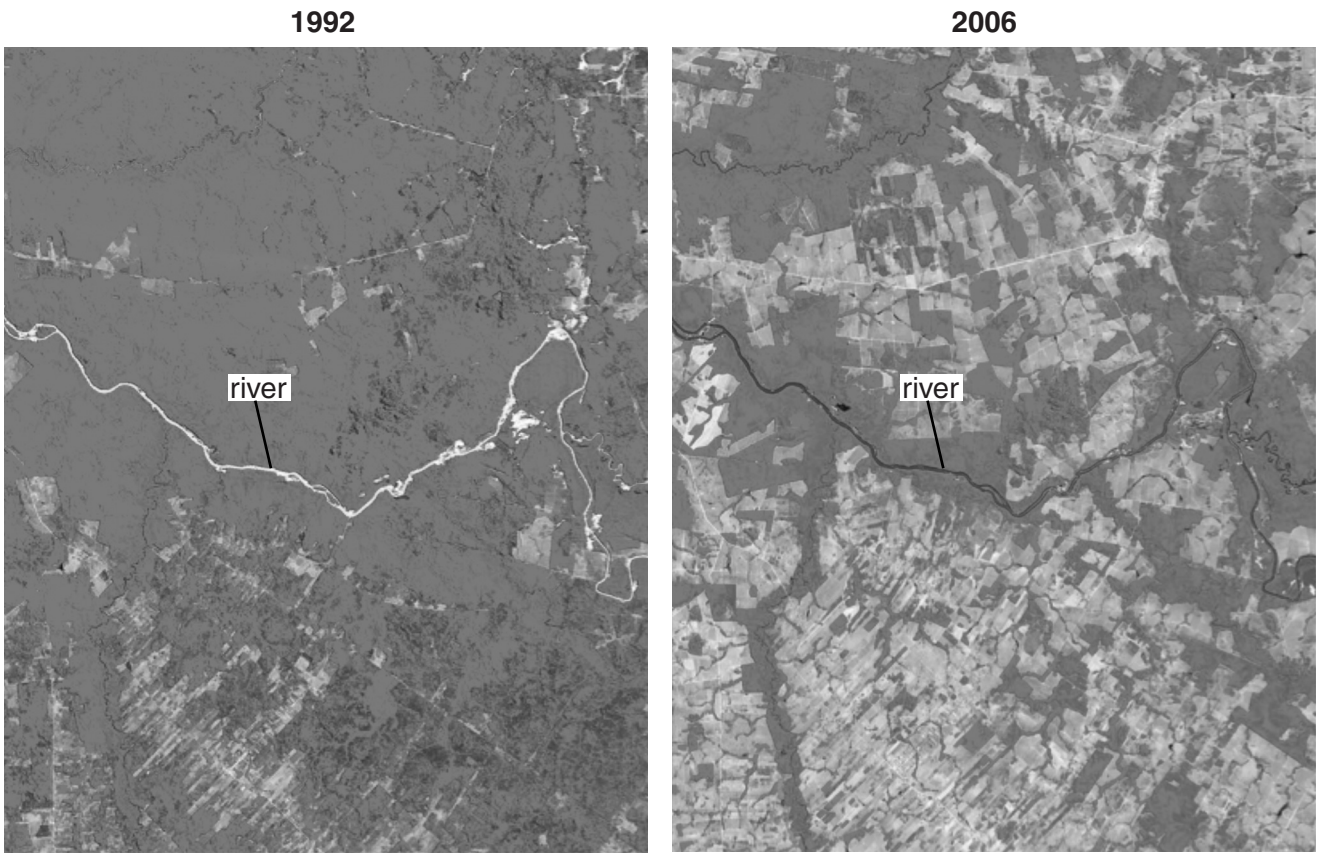
(iv) Suggest reasons why the government of Brazil set targets to reduce deforestation of the Amazon rainforest.

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(v) Suggest reasons why it might be difficult to reduce deforestation of the Amazon rainforest.

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(d) The aerial photographs below show an area of the Amazon rainforest in 1992 and 2006. The dark areas show forest, while lighter areas show where the forest has been cleared.



Describe the changes in the area of the Amazon rainforest shown between 1992 and 2006.

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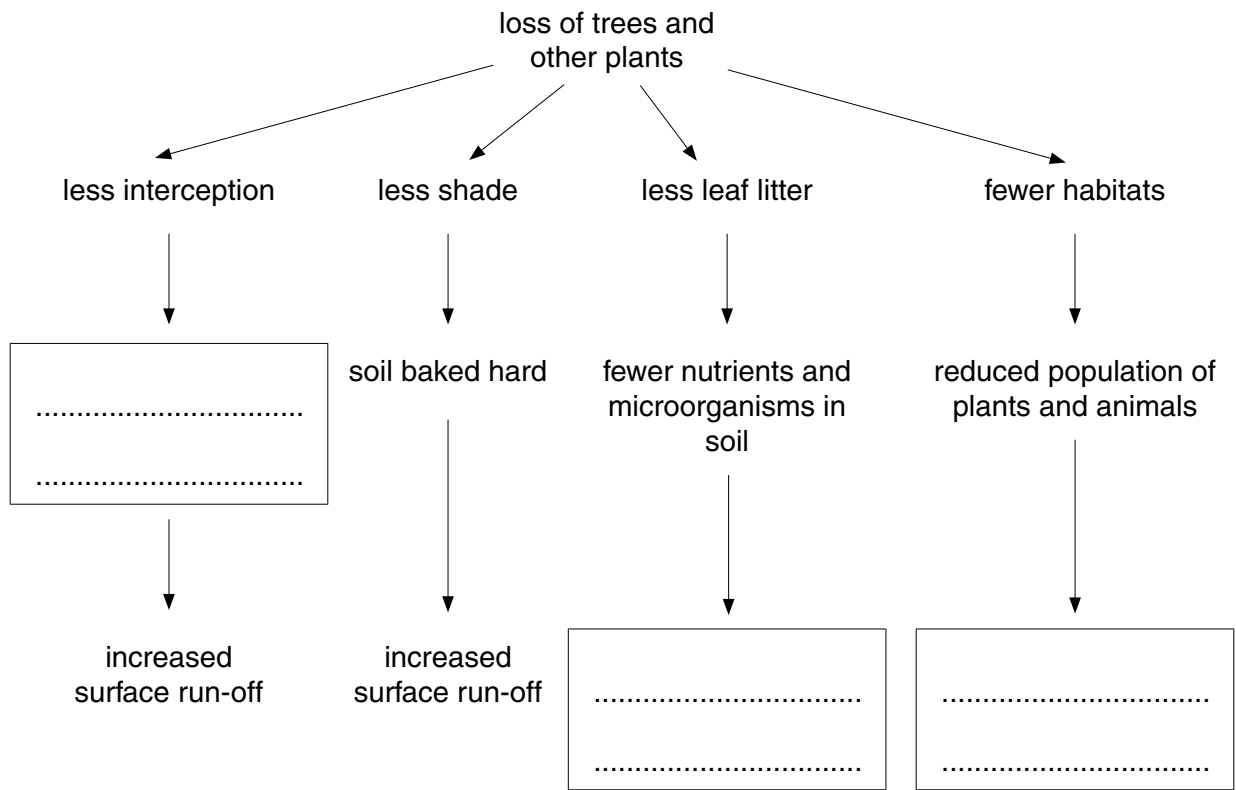
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[3]

(e) Look at the diagram below, which shows some of the effects of deforestation.



(i) Complete the diagram by filling in the missing labels in the three boxes, to explain the effects of deforestation. [3]

(ii) Explain why removal of trees from the rainforest may cause flooding.

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(f) For centuries, tribes in the Amazon rainforest have survived by being hunter-gatherers and by using shifting cultivation. Shifting cultivation involves chopping down a small area of forest and burning the wood, which leaves ash on the ground. Crops are then grown for three or four years. Tribes then clear another small area of forest.

(i) State the meaning of *hunter-gatherer*.

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(ii) Explain why the tribes of the Amazon rainforest need to clear a new piece of land for cultivation every three or four years.

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(g) Suggest reasons why people in many parts of the world are worried about the destruction of tropical rainforests.

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