Cambridge O Level

Cambridge Assessment International Education
Cambridge Ordinary Level

CANDIDATE NAME	

CENTRE NUMBER						CANDIDATE NUMBER				

* 7 2 4 7 0 7 6 9 6 4 *

ENVIRONMENTAL MANAGEMENT **5014/12**

Paper 1 Theory **May/June 2019**

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 in the spaces at the top of this page.
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.

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 **17** printed pages and **3** blank pages.

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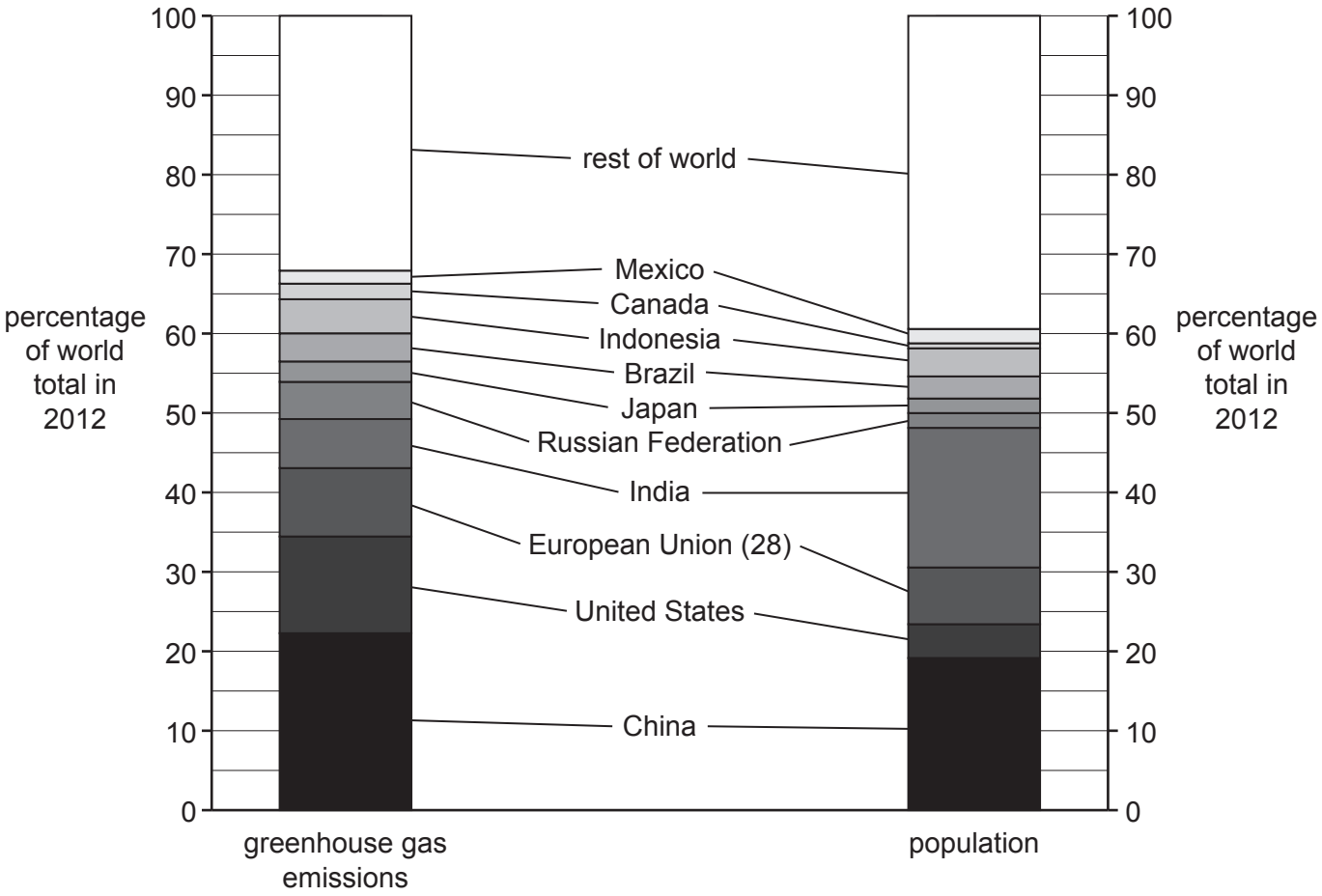
Section A

1 The divided bar chart shows percentage of greenhouse gas emissions and percentage population in 2012.



(a) State the percentage of greenhouse gas emissions from the rest of the world in 2012.

.....% [1]

(b) Identify the country that produced the most greenhouse gas emissions in 2012 **and** state the percentage of greenhouse gas emissions it produced.

country .....

percentage of greenhouse gas emissions .....

[1]

(c) State the name of **two** greenhouse gases.

1 .....

2 .....

[2]

(d) India contains nearly 19% of the world's population, but contributes only 6% of the world's greenhouse gases.

Suggest reasons why.

.....

.....

.....

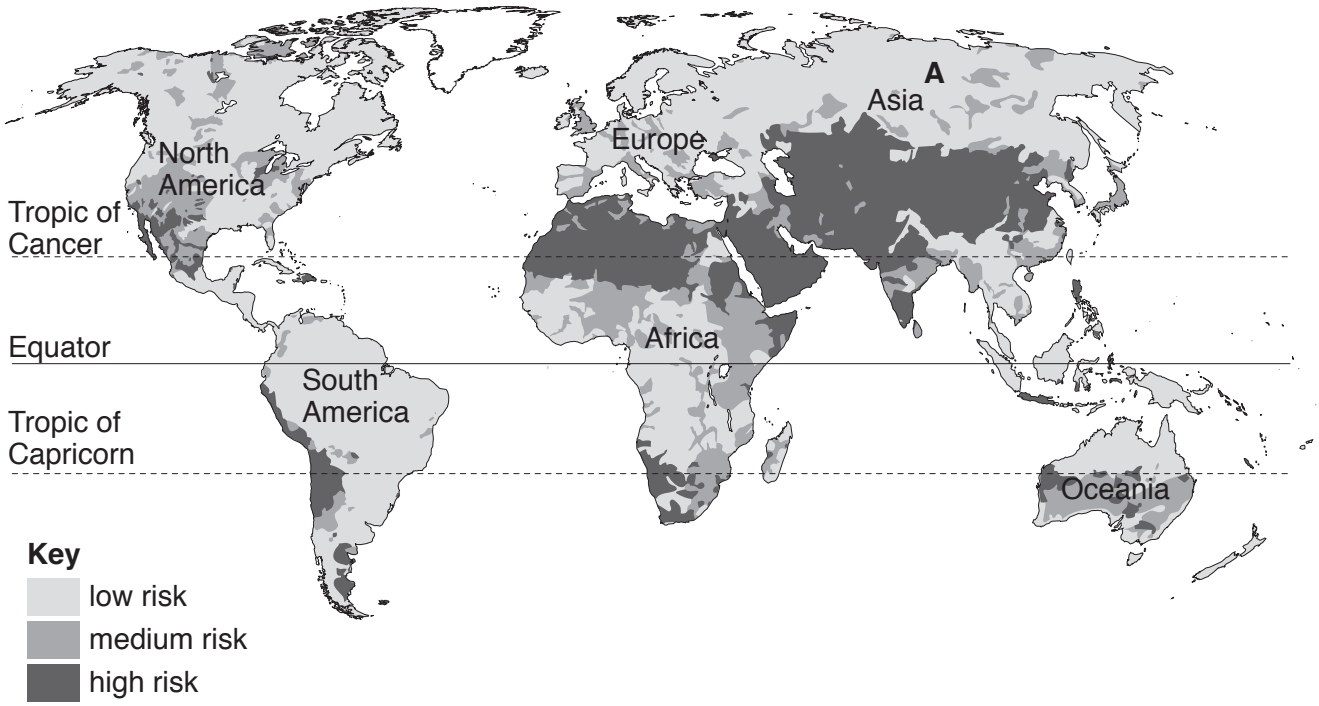
.....

.....

..... [3]

[Total: 7]

2 The map shows areas with a low, medium or high risk to water supplies. The risks to water supplies include low annual rainfall, risk of drought, pollution of supplies and overuse of water.



(a) Describe the location of the areas with a high risk to water supplies in South America.

.....

.....

.....

..... [2]

(b) Suggest reasons why there is a low risk to water supplies at location **A**.

.....

.....

.....

..... [2]

(c) Explain why there is overuse of water in some parts of the world.

.....

.....

.....

..... [2]

(d) State **two** strategies farmers can use to prepare for the impacts of drought.

1 .....

.....

2 .....

.....
[2]

[Total: 8]

3 The photograph shows soil erosion on an arable farm in the wet season.

(a) State **one** piece of evidence in the photograph that the soil has been eroded.

.....

..... [1]

(b) Suggest **two** reasons why soil erosion has occurred in the area shown on the photograph.

1 .....

.....

2 .....

.....
[2]

(c) Describe what could be done to reduce soil erosion in the area shown on the photograph.

.....

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..... [2]

[Total: 5]

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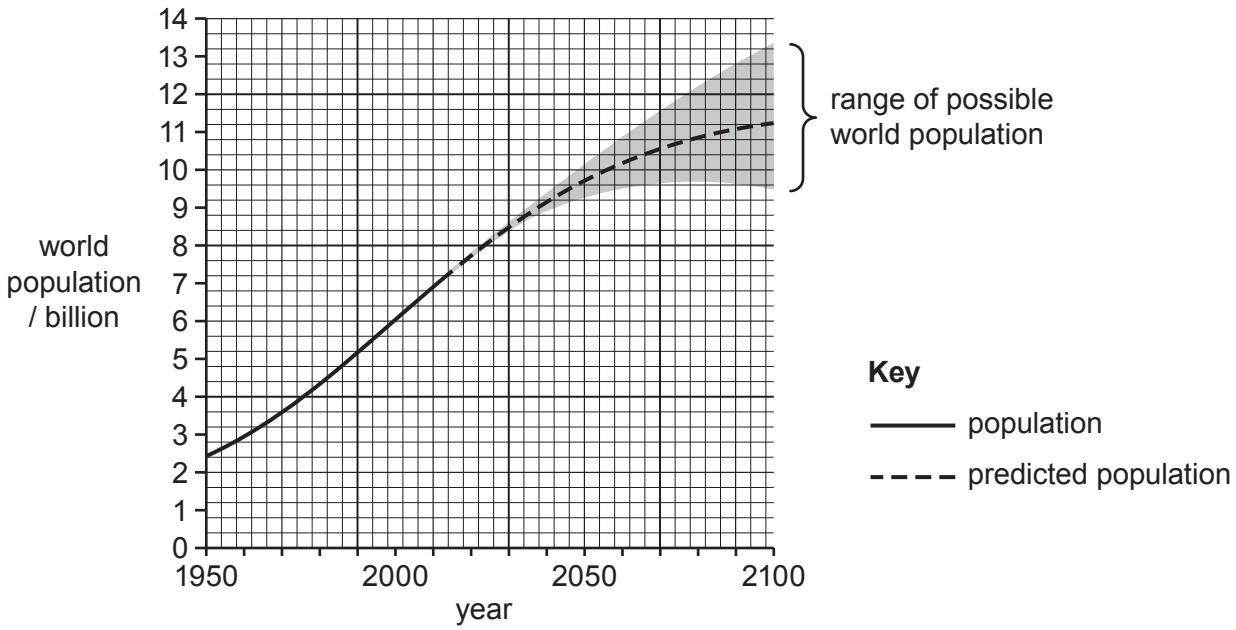
Section B

4 **(a)** The graph shows the world population from 1950 to 2015 and the predicted world population from 2016 to 2100.



(i) Calculate the increase in world population from 1950 to 2015.

..... [1]

(ii) Describe how the predicted rate of population growth changes after 2050.

.....

..... [1]

(iii) Explain why there is a range of possible world population figures between 2050 and 2100.

.....

.....

.....

..... [2]

(b) The table shows the populations of the continents in 2015 and their predicted populations in 2100.

continent	population in 2015 / million	predicted population in 2100 / million
Africa	1186	4387
Asia	4393	4889
Europe	738	664
Oceania	39	71
North America	358	500
South America	634	721

(i) Place the continents in rank order of their predicted populations in 2100, starting with the largest.

largest .....

.....

.....

.....

.....

smallest .....

[2]

(ii) State which continent is predicted to have a smaller population in 2100 than in 2015.

..... [1]

(iii) Calculate the predicted percentage increase in population for Oceania from 2015 to 2100.

.....% [2]

(iv) Explain the reasons for rapid population growth in some parts of the world.

.....

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..... [4]

(v) Migration affects population size.

State **two** factors that cause migration.

1 .....

2 .....
[2]

(vi) 'Education is the best strategy for managing human population size.'

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

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..... [6]

[Total: 21]

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5 **(a)** Describe the formation of coal.

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..... [3]

(b) Describe the advantages and disadvantages of coal as an energy resource.

advantages .....

.....

.....

.....

disadvantages .....

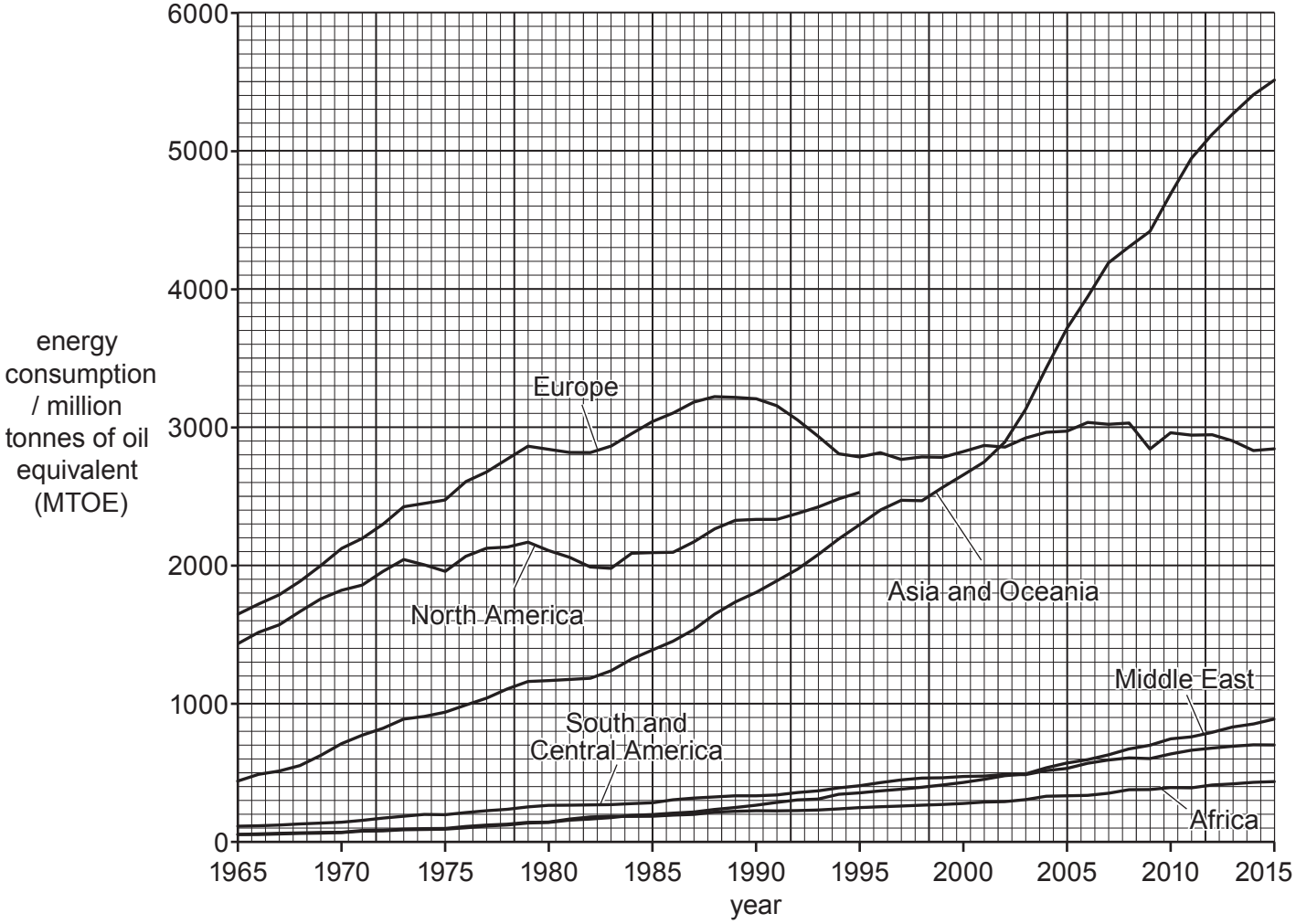
.....

.....

.....

[4]

(c) The graph shows energy consumption by world region from 1965 to 2015.



The table shows energy consumption for North America from 2000 to 2015.

year	2000	2005	2010	2015
energy consumption for North America / MTOE	2700	2850	2700	2800

(i) Complete the graph for North America. [2]

(ii) State which world region has had the largest increase in energy consumption from 1965 to 2015.

..... [1]

(iii) State which region had the highest energy consumption in 1965.

..... [1]

(iv) Describe the changes in energy consumption in Europe between 1965 and 2015.

.....

.....

.....

.....

.....

..... [3]

(v) Suggest reasons for the changes in energy consumption in Europe **and** in Asia and Oceania, from 2000 to 2015.

Europe .....

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Asia and Oceania .....

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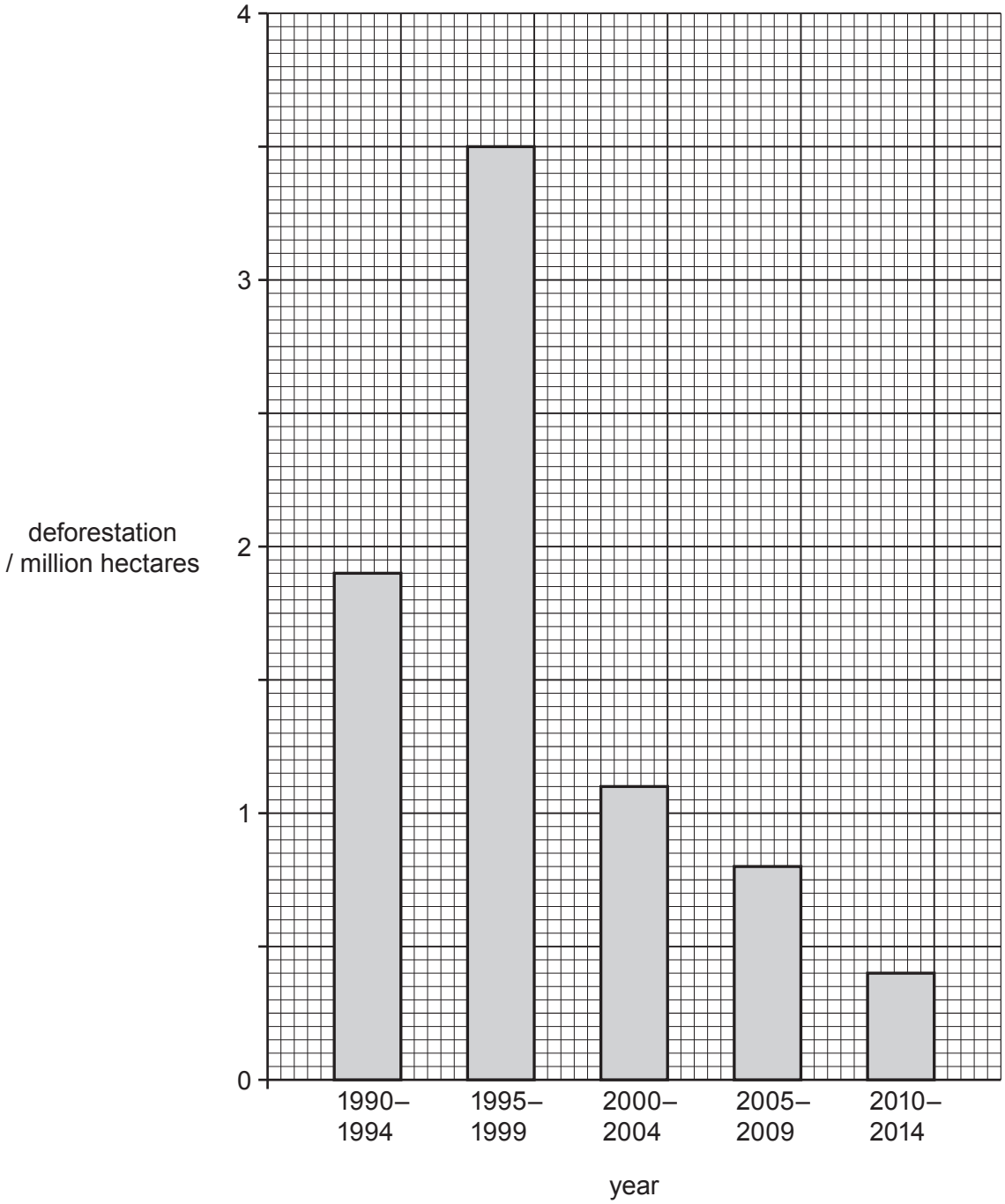
[5]

[Total: 19]

6 The bar chart shows deforestation rates in Indonesia between 1990 and 2014.



(a) Describe the changes in deforestation rates in Indonesia shown on the bar chart.

.....

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..... [3]

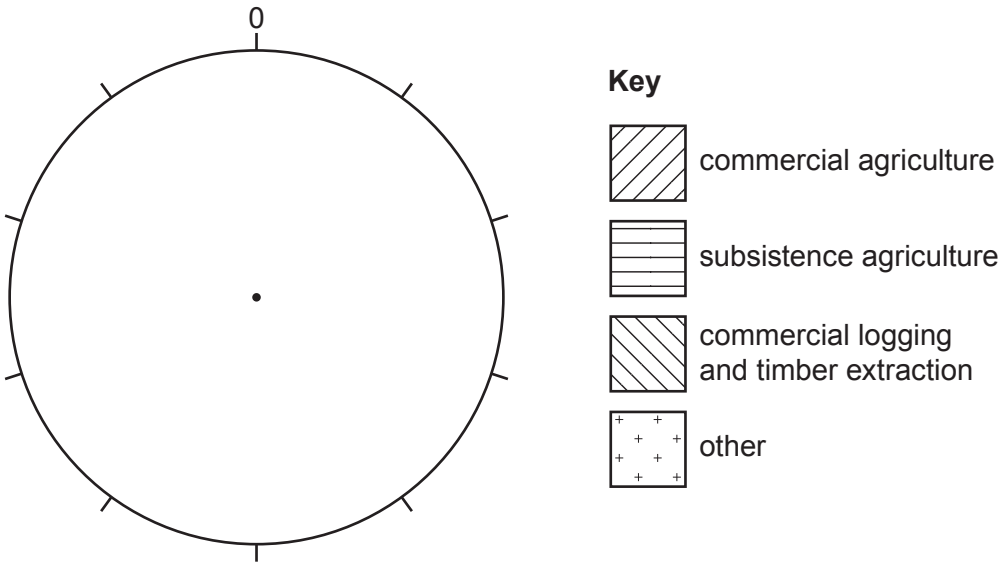
(b) The table shows the reasons for deforestation in Indonesia.

reason for deforestation	percentage of forest cleared
commercial agriculture	42
subsistence agriculture	34
commercial logging and timber extraction	19
other	5

(i) Complete the pie chart to show the reasons for deforestation in Indonesia.

Use the key provided.

reasons for deforestation in Indonesia



[3]

(ii) Define the terms *commercial agriculture* and *subsistence agriculture*.

commercial agriculture .....

.....

subsistence agriculture .....

.....

[2]

(iii) Suggest **one** reason for deforestation other than agriculture, commercial logging and timber extraction.

.....

..... [1]

(iv) Explain why some people want to stop further deforestation.

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..... [4]

(c) The diagram shows a wetland food chain.

algae → mosquito larvae → small fish → large fish → heron

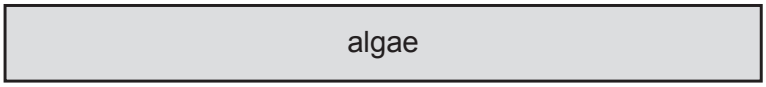
(i) State the producer and tertiary consumer in the food chain.

producer .....

tertiary consumer .....

[1]

(ii) Complete the pyramid of energy for this food chain. The bar for algae has been completed for you.



[2]

(iii) Describe the process of photosynthesis.

.....

.....

.....

..... [2]

(d) The table shows the percentage rate of loss of wetlands between 1900 and 2010 for a country.

period	percentage loss of inland wetlands per year	percentage loss of coastal wetlands per year
1900–1940	0.85	0.39
1941–1974	1.48	1.73
1975–1990	1.63	1.44
1991–2010	0.48	0.85

Compare the percentage rate of loss of inland wetlands with that of coastal wetlands between 1900 and 2010.

.....

.....

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..... [2]

[Total: 20]

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