



Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

CANDIDATE
NAME

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ENVIRONMENTAL MANAGEMENT

0680/12

Paper 1

October/November 2015

1 hour 30 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.

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 **13** printed pages and **3** blank pages.

2

- 1 (a) (i)** State **three** physical factors and **three** living factors of an ecosystem.

physical factors

.....

.....

living factors

.....

.....

[3]

- (ii)** Nomadic pastoralists, hunter-gatherers and settled farmers use their natural environment in different ways. Explain the differences between these three ways of life.

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.....[3]

- (b) (i)** Deforestation is a major problem for some ecosystems. State **two** causes of deforestation.

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.....[2]

- (ii)** Describe ways in which the demand for timber products could be reduced.

.....

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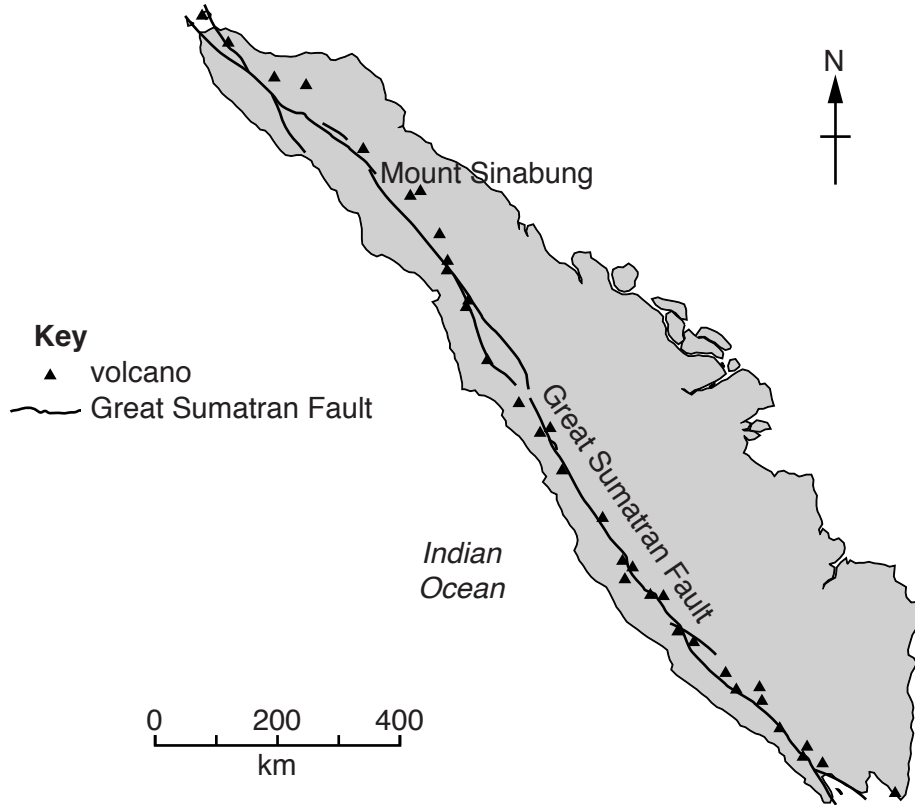
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.....[2]

3

- 2 (a) Look at the following newspaper report.

Mount Sinabung, on the island of Sumatra in Indonesia erupted at 03.00 on Sunday, 15 September 2013. More than 6000 people were evacuated and buildings and cars were covered in ash. People suffered breathing difficulties after inhaling volcanic ash. The evacuees were sheltered in eight locations, where officials gave them food. Mount Sinabung lies on the Great Sumatran Fault.



- (i) Using information from the newspaper report and your own knowledge, explain why there is a line of volcanoes near the west coast of Sumatra.

.....

[2]

- (ii) Suggest **two** reasons why no one died during this eruption.

.....

[2]

4

- (b) Look at the data below, which show the deaths due to volcanic eruptions in different parts of the world from 1650 to the present day. Total deaths have been calculated at 240 000.

country or region	percentage of all deaths caused by volcanic eruptions since 1650
Indonesia	67.0
Caribbean	12.9
Japan	8.1
Iceland	3.9
Central America	2.3
Mediterranean	1.7
Philippines	1.6
Papua New Guinea	1.5
others	1.0

- (i) Calculate the number of people who have died as a result of volcanic eruptions in Indonesia since 1650.

Space for working.

.....people [1]

- (ii) Suggest reasons why more people died in Indonesia as a result of volcanic eruptions than in the rest of the world.

.....

.....

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.....[3]

5

(iii) Explain reasons why, even though there is a risk, people live close to volcanoes.

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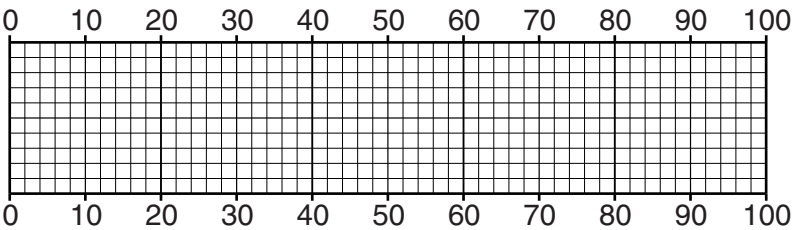
.....[2]

6

3 (a) The table below shows what happens to solar energy reaching the planet Earth.

solar energy that is:	percentage	key to divided bar graph
absorbed by the Earth's surface	50	A
absorbed by gases in the atmosphere	18	B
reflected by clouds	21	C
reflected by dust	5	D
reflected by the Earth's surface	6	E

(i) Draw and label a divided bar graph to show these data in the grid below.



[3]

(ii) Calculate the percentage of solar energy reaching the planet Earth that is reflected.
Space for working.

..... % [1]

7

- (b) (i) The heat from the Sun causes winds. Describe how wind speed **and** direction can be measured.

.....

.....

.....

.....[2]

- (ii) Measurements of wind speed and direction help decide where to locate wind turbines to generate electricity. Suggest **four** reasons why a country might increase the use of wind power to generate electricity.

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.....[4]

8

- 4 (a) (i) Complete the following passage about the atmosphere.

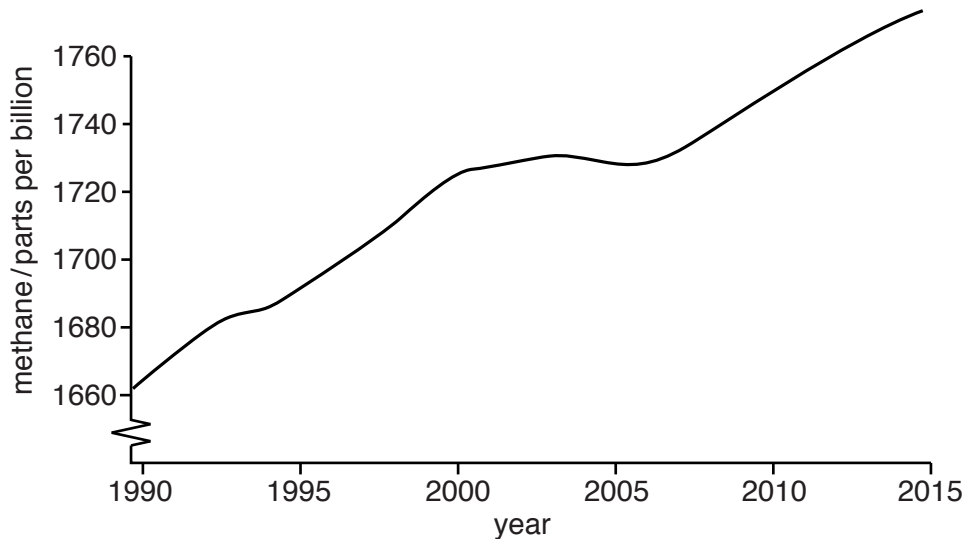
The Earth's atmosphere contains a gas, called , which is used by plants to make food in a process called Another gas, called , is released by this process. [2]

- (ii) Methane is a gas in the atmosphere. Explain how methane is a threat to the environment.

.....

 [2]

- (iii) Look at the graph below which shows methane levels at a monitoring station in Antarctica.



Describe the pattern shown by the graph.

.....

Suggest reasons for the pattern you have described.

.....

[3]

9

(b) (i) State the name of **one** gas that causes acid rain.

.....[1]

(ii) Explain why acid rain is an international problem.

.....

.....

.....

.....[2]

10

5 (a) The world's oceans are polluted by:

raw sewage

toxic metals

oil

plastics

- (i) From the list above state the name of the pollutant that can be controlled using skimmers, detergent sprays and floating booms.

.....[1]

- (ii) From the list above, state the name of the pollutant which causes an increase in nutrients leading to eutrophication. Describe the stages leading to eutrophication.

pollutant

description

.....

.....

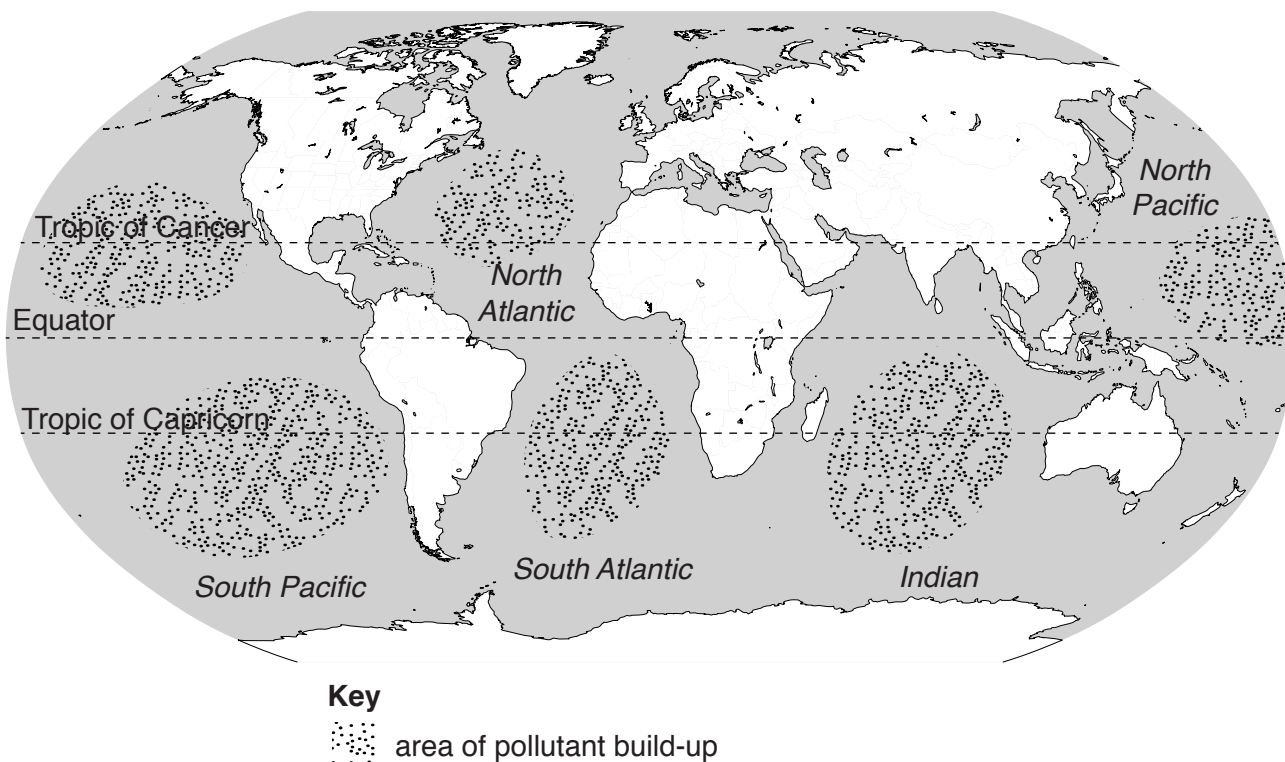
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[3]

- (iii) Look at the map below, which shows areas where one of these pollutants has built up.



11

From the list in part **(a)**, state the name of the pollutant and explain why it is found in these areas.

pollutant

reason

.....

.....

.....

.....

.....

[3]

- (b) (i)** Put a ring around the **two** diseases that can be spread by contact with water contaminated by raw sewage.

bilharzia

typhoid

malaria

cholera

[1]

- (ii)** Describe how raw sewage can be managed to prevent the spread of diseases.

.....

.....

.....

.....[2]

12

- 6 (a) (i)** Crops need water from the soil to grow. State **two** other substances needed for growth that crops obtain from the soil.

.....
.....[2]

- (ii)** A book states that,

"In the past it was not possible to grow the same crop on the same piece of land year after year. However, the same crop can now be grown year after year on tropical plantations."

Explain how agricultural techniques led to this change.

.....
.....
.....
.....
.....
.....[3]

13

- (b) Many farmers in developing countries grow cash crops such as bananas.

The table below gives information about the cost of a bunch of bananas which sells for 4 US\$ in a shop in a developed country.

money received by:	US\$
farm owner	0.42
farm worker	0.06
storage and shipping	1.40
ripening and distribution	0.80
shop	1.32
total cost of a bunch of bananas	4.00

- (i) Calculate the percentage of the total cost of a bunch of bananas which goes to the farm owner.

Space for working.

..... % [2]

- (ii) A fairtrade agreement was introduced in 1993, which ensures that farmers are always paid a higher price than without the agreement for their bananas. Suggest how a fairtrade agreement benefits farmers and the local community in the banana growing area.

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.....[3]

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