



Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

CANDIDATE
NAME

CENTRE
NUMBER

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ENVIRONMENTAL MANAGEMENT

0680/22

Paper 2

May/June 2017

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) Name the types of rock formed by each of the following:

heat and/or pressure deep in the Earth's crust

magma or lava cooling and solidifying

the deposition of rock fragments, usually beneath the sea.

[3]

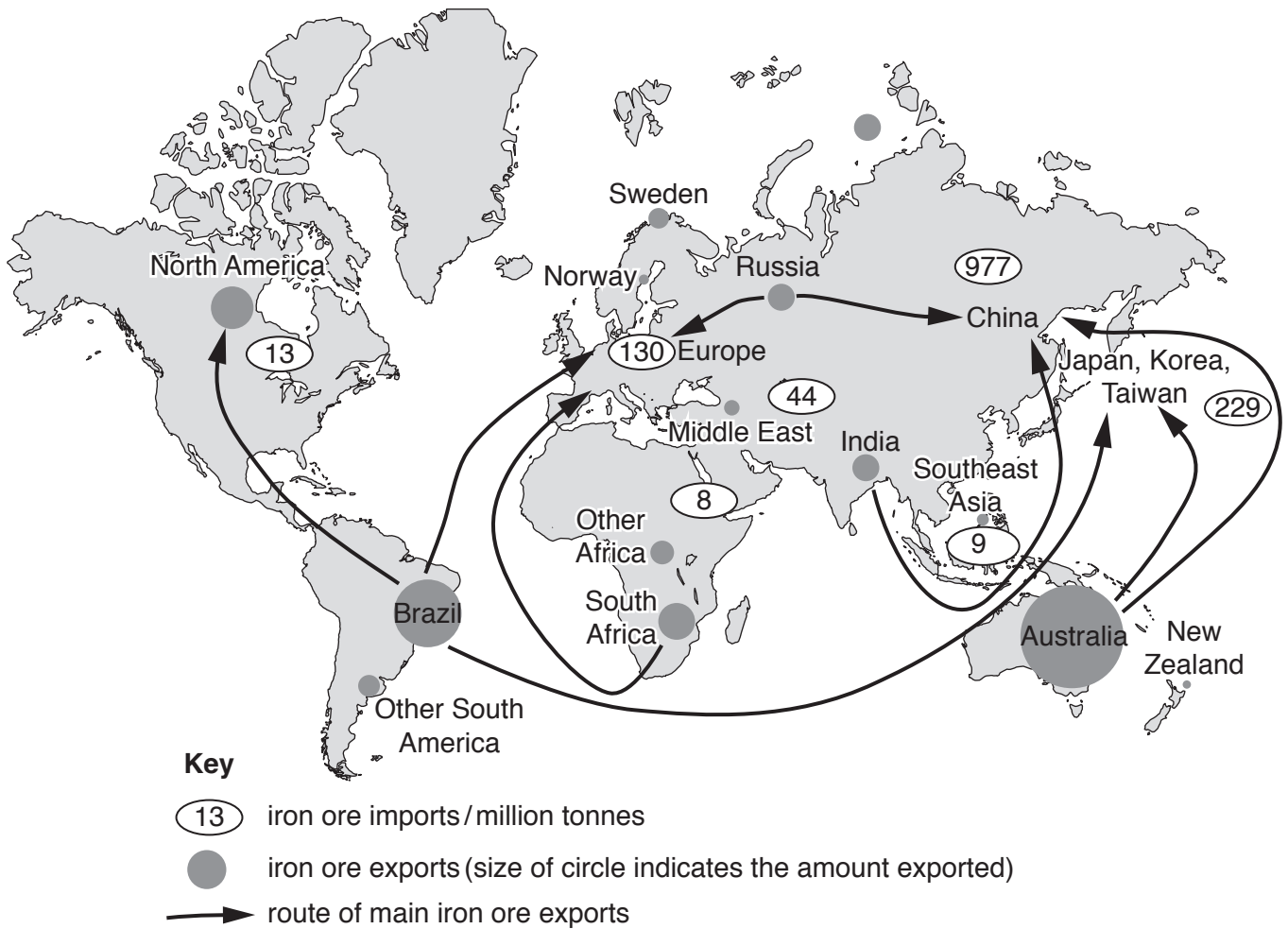
(b) (i) Describe how a mineral, such as iron ore, is extracted from an open-pit (opencast) mine.

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.....[3]

(ii) Describe how the land can be restored after open-pit mining.

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(c) The map shows recent iron ore exports, transport routes and imports for one year.



Using the map:

(i) name the country which exported the most iron ore.

..... [1]

(ii) name the country which imported the most iron ore and state how much it imported.

name

quantity imported million tonnes [2]

(iii) Suggest why Japan, Korea and Taiwan imported such large quantities of iron ore.

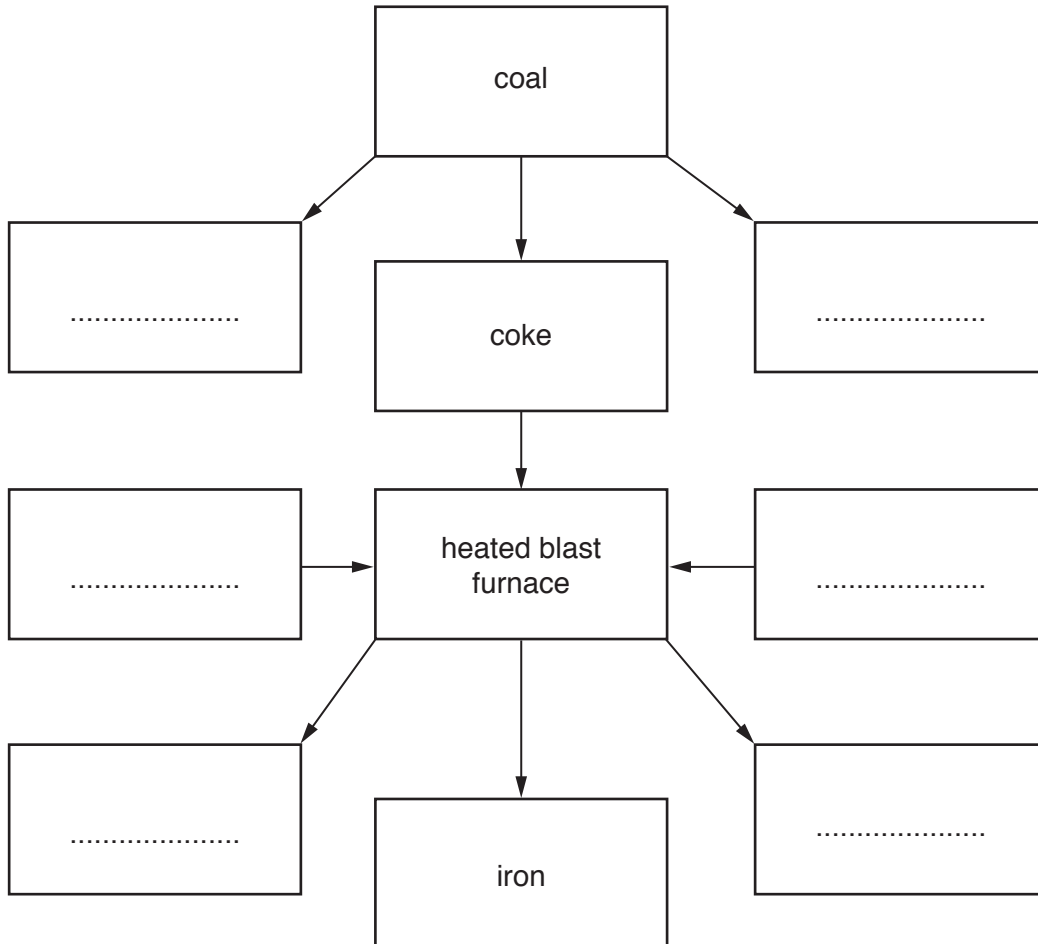
.....

 [2]

(e) The information describes a method for producing iron from iron ore.

Firstly, coal is converted to coke, which is almost pure carbon. This process also produces some gases such as sulfur dioxide and nitrogen oxides. Iron ore, coke and limestone are loaded into a blast furnace and heated to a high temperature. The coke and limestone convert iron ore into iron. The waste materials from the blast furnace are carbon dioxide and a solid waste known as slag.

(i) Use the information above to complete the boxes in the flow diagram.

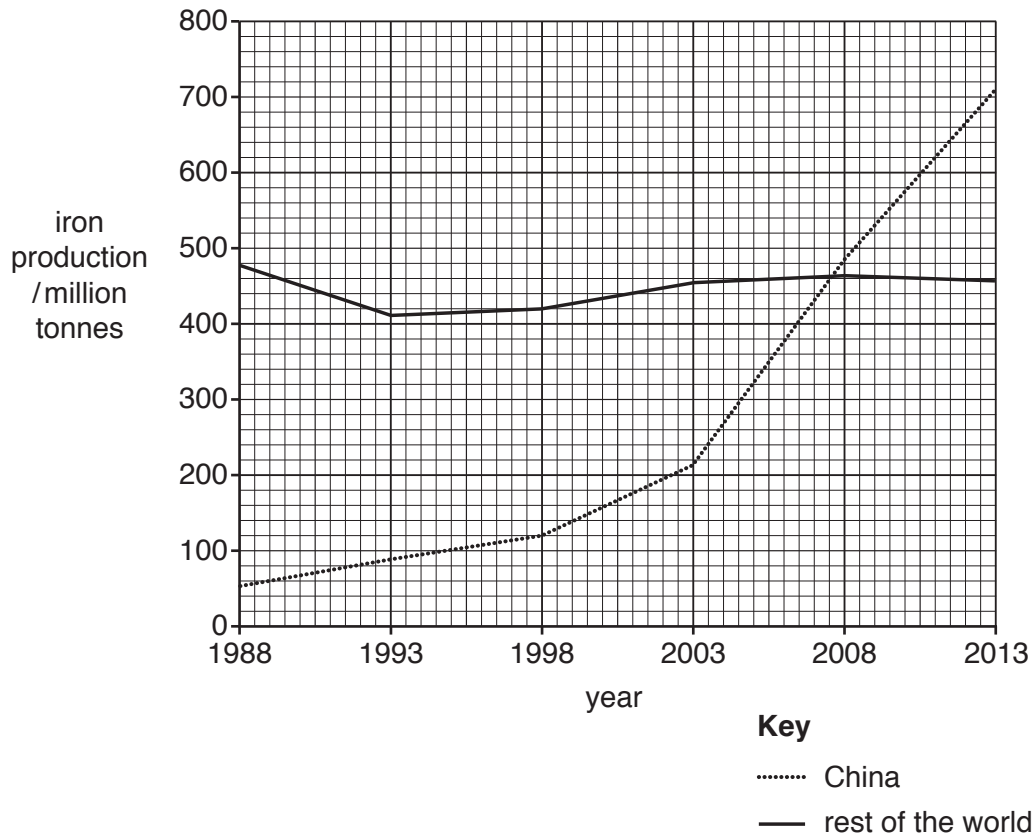


[3]

(ii) Explain how producing iron in a blast furnace contributes to acid rain.

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.....[4]

(f) The graph shows iron production for China and the rest of the world from 1988 to 2013.



(i) Calculate the total world iron production in 1988.

Show your working.

..... million tonnes [2]

(ii) State the year when China and the rest of the world produced equal quantities of iron.

..... [1]

(iii) Compare the quantity of iron produced in China with the quantity produced in the rest of the world from 1988 to 2013.

.....

 [3]

(iv) Suggest how the air quality in China may have changed between 1998 and 2013.

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.....[1]

(v) Can economic development take place without causing air pollution?

Explain your answer.

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.....[6]

2 (a) The table shows climate data for five different climates.

climate	average maximum temperature /°C	average minimum temperature /°C	average annual precipitation /mm	number of months with precipitation
A	34	19	120	5
B	34	24	550	8
C	10	-28	230	12
D	29	27	1850	12
E	18	-12	590	12

(i) Calculate the range of temperature for climate **E**.

..... °C [1]

(ii) State which climate, **A**, **B**, **C**, **D** or **E**, has:

the highest average annual precipitation

.....

the lowest average minimum temperature.

.....

[2]

(iii) Complete the table below by writing in the names of each climate. Choose from:

cool temperate interior

desert

equatorial

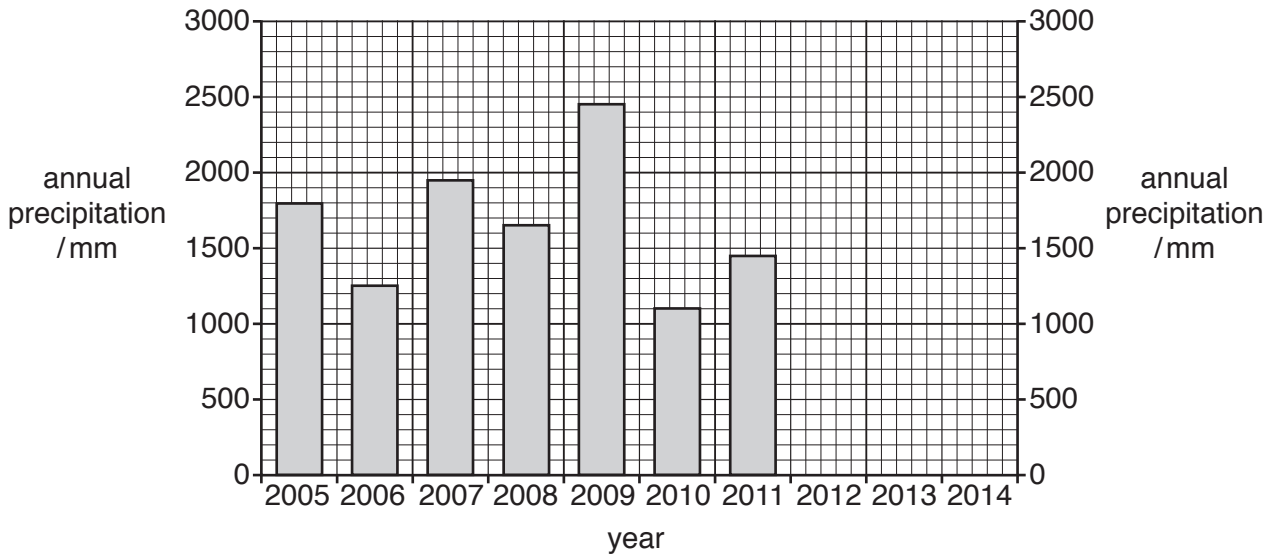
savanna

tundra

climate	average maximum temperature /°C	average minimum temperature /°C	average annual precipitation /mm	number of months with precipitation	name of climate
A	34	19	120	5
B	34	24	550	8
C	10	-28	230	12
D	29	27	1850	12
E	18	-12	590	12

[4]

(b) The bar graph shows annual precipitation for a weather station in a rural area in the tropics.



(i) Complete the bar graph using data in the table.

year	annual precipitation /mm
2012	900
2013	1400
2014	2050

[2]

(ii) The average annual precipitation for the ten years shown was 1600mm.

State how many years had below average precipitation.

..... years [1]

(iii) Suggest **two** problems that people living in this rural area may have faced during the years 2010 to 2013.

.....

 [2]

(iv) Suggest ways of overcoming the problems of irregular rainfall.

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.....[3]

(c) The photograph shows part of a monsoon forest during the dry season.



(i) Describe the vegetation shown in the photograph.

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.....[2]

(ii) Suggest how the area would look during the wet season.

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.....[1]

(iii) State **three** differences between monsoon forest vegetation and tropical rainforest vegetation.

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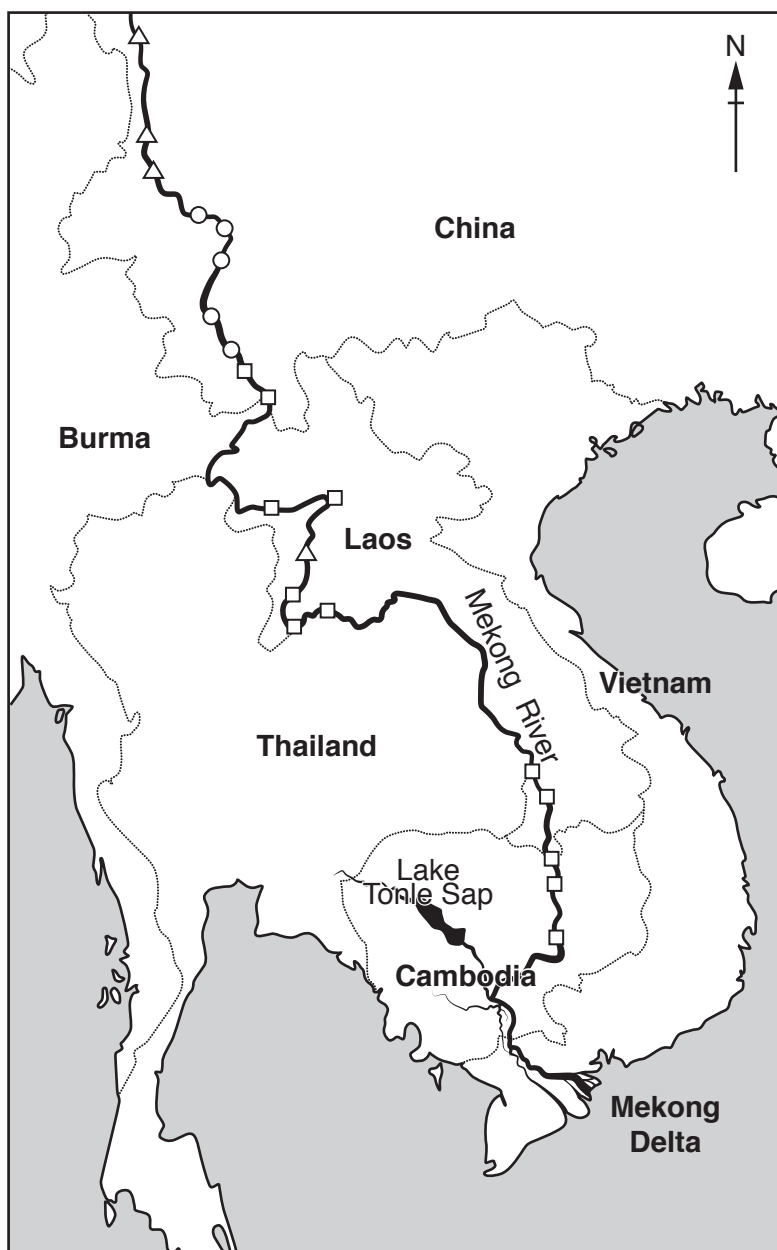
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.....[3]

(d) The fact sheet shows information about the Mekong River in Southeast Asia.



The Mekong River and the livelihoods of the people who live near it are under threat from the building of large numbers of dams for hydro-electric power (HEP). The river is the largest freshwater fishery in the world, with many fish species migrating over 1000km upstream to breed. The area has a monsoon climate and the regular floods provide silt and irrigation water to the fields. Annual floods provide a unique wetland for a large number of plant and animal species.

- | | | | |
|----|-----|------------------------|------------------------|
| 0 | 300 | Key | |
| km | | river | dam completed |
| | | international boundary | dam under construction |
| | | sea | dam proposed |

(i) State the direction of flow of the Mekong River.

.....[1]

(ii) State the number of completed dams and the country in which they are located.

number of completed dams

country

[2]

(iii) Describe the distribution of proposed dams along the Mekong River.

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.....[2]

(iv) Explain how the construction of dams on the Mekong River might affect farmers and fishermen.

farmers

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fishermen

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[5]

(v) Suggest economic reasons why so many hydro-electric dams are being built on this river.

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(e) 'The availability of fresh water will always be a problem for some countries.'

How far do you agree with this statement? Give reasons for your answer.

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