Cambridge IGCSE

Cambridge Assessment International Education
Cambridge International General Certificate of Secondary Education

CANDIDATE NAME

CENTRE NUMBER

CANDIDATE NUMBER

0545938046

ENVIRONMENTAL MANAGEMENT **0680/13**

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.

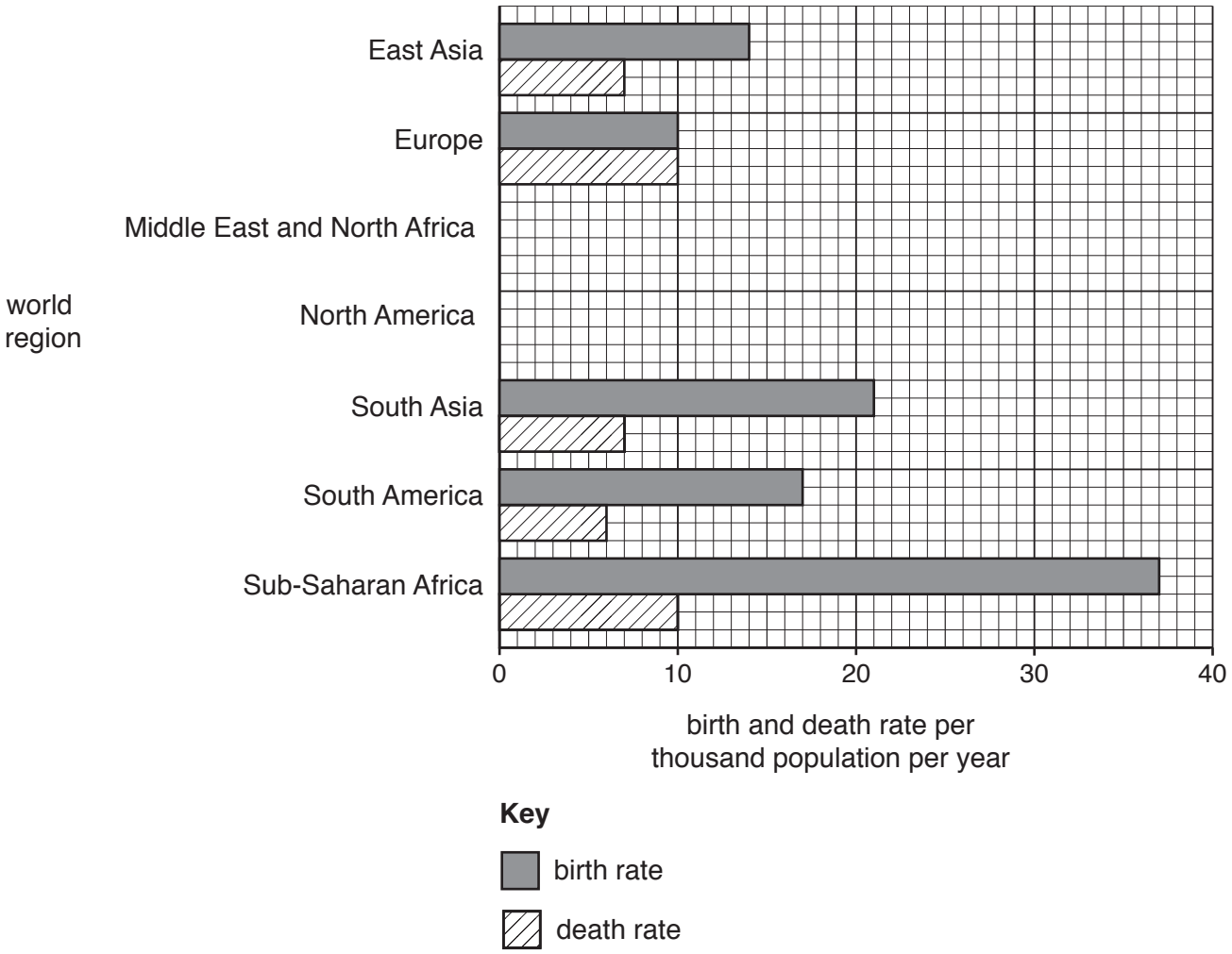
This document consists of **16** printed pages and **4** blank pages.

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Section A

1 The bar chart shows birth and death rates for seven world regions.



(a) Complete the bar chart using the data in the table.

world region	birth rate per thousand population per year	death rate per thousand population per year
Middle East and North Africa	23	5
North America	12	8

[2]

(b) Calculate the difference between the birth rate and death rate for South Asia.

..... per thousand population per year [1]

(c) State the world region with the biggest difference between the birth rate and death rate.

..... [1]

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(d) Suggest reasons why the birth rate is high in Sub-Saharan Africa.

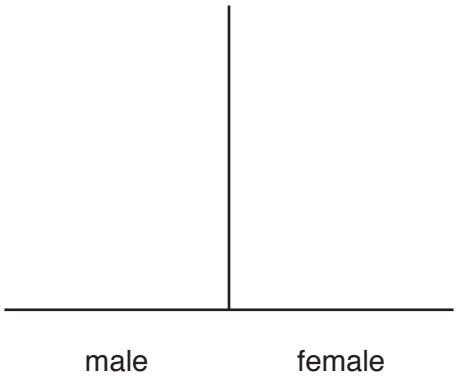
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..... [2]

(e) Sketch a population pyramid for a more economically developed country (MEDC) on the diagram.



[2]

[Total: 8]

2 The photograph shows an opencast mine, used to extract copper ore, in Zambia.



(a) Describe how the copper ore has been mined.

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..... [3]

(b) Describe the environmental impacts of this mine.

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..... [3]

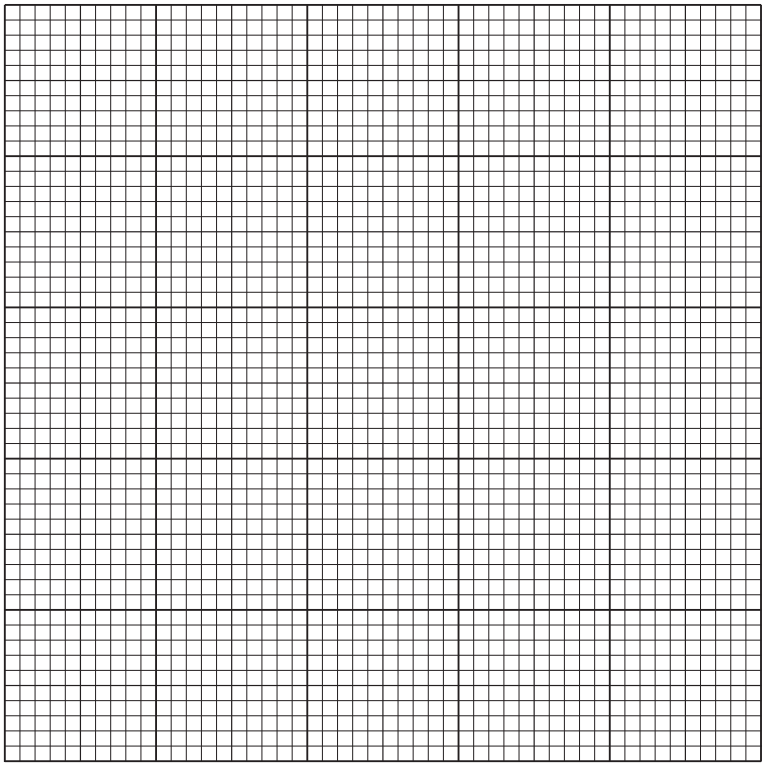
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3 The table shows an estimate of the mass of plastic in some of the world's oceans.

ocean	mass of plastic/ thousand tonnes
North Pacific	960
South Pacific	210
North Atlantic	560
South Atlantic	130
Indian Ocean	590

(a) Draw a bar chart to show the information in the table.



[4]

(b) Suggest **two** reasons why there are large amounts of plastic waste in the world's oceans.

1 .....

.....

2 .....

.....

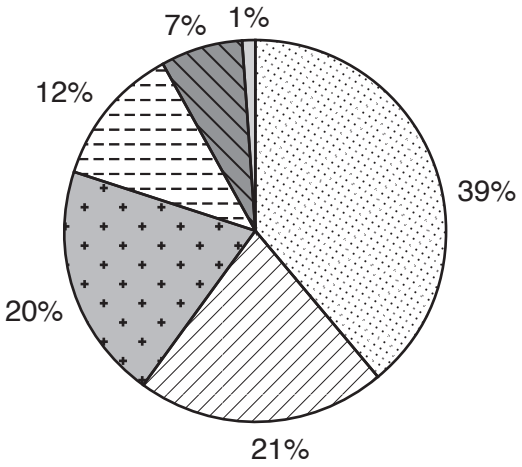
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Section B

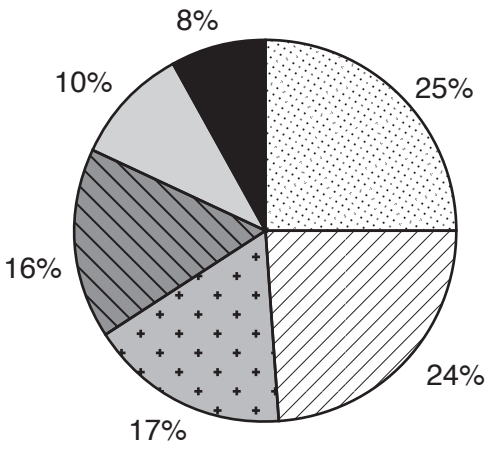
4 **(a)** The pie charts show the energy resources used to generate electricity in Europe in 1984 and in 2014. The data are plotted as a proportion of the total electricity generated.

1984



Total electricity generation = 2413×10^{12} Wh

2014



Total electricity generation = 3568×10^{12} Wh

Key

energy resource

other
hydro-electric
wind
oil
gas
nuclear
coal

(i) Calculate the increase in total electricity generation in Europe from 1984 to 2014.

..... Wh [1]

(ii) Suggest **two** reasons why demand for electricity in Europe has increased since 1984.

1 .....

.....

2 .....

.....

[2]

(iii) State which energy resource was used:

in 1984, but **not** in 2014 .....

in 2014, but **not** in 1984. .....

[2]

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(iv) The actual electricity generated from gas in 1984 was 180×10^{12} Wh and in 2014 it was 571×10^{12} Wh.

Calculate the percentage increase for the electricity generated from gas between 1984 and 2014.

..... % [2]

(v) Suggest reasons why the use of renewable energy resources for generating electricity in Europe has increased from 1984 to 2014.

.....

.....

.....

.....

.....

..... [3]

(vi) The pie charts group several energy resources together as 'other'.

State **two** of these 'other' energy resources used to generate electricity.

1 .....

2 .....

[2]

(vii) Describe how electricity is produced in a hydro-electric power station.

.....

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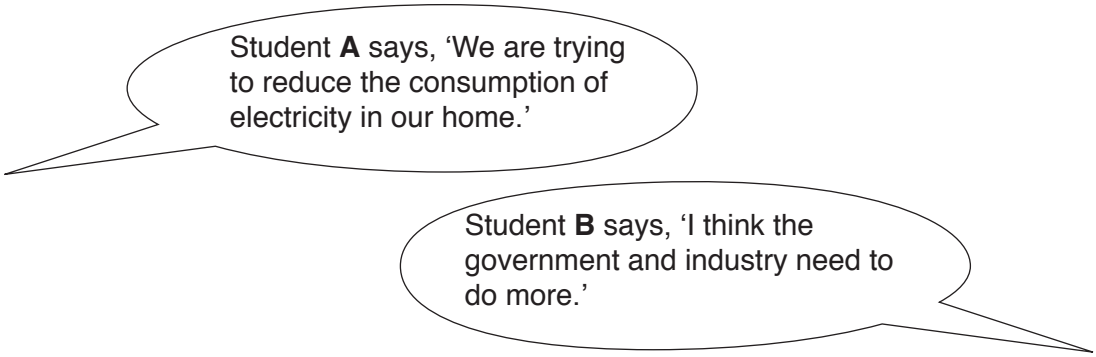
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..... [3]

(b) Some students are discussing ways of reducing electricity consumption.



Do you think student **A**'s idea is an effective way of reducing electricity consumption for a country?

Give reasons for your answer.

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..... [5]

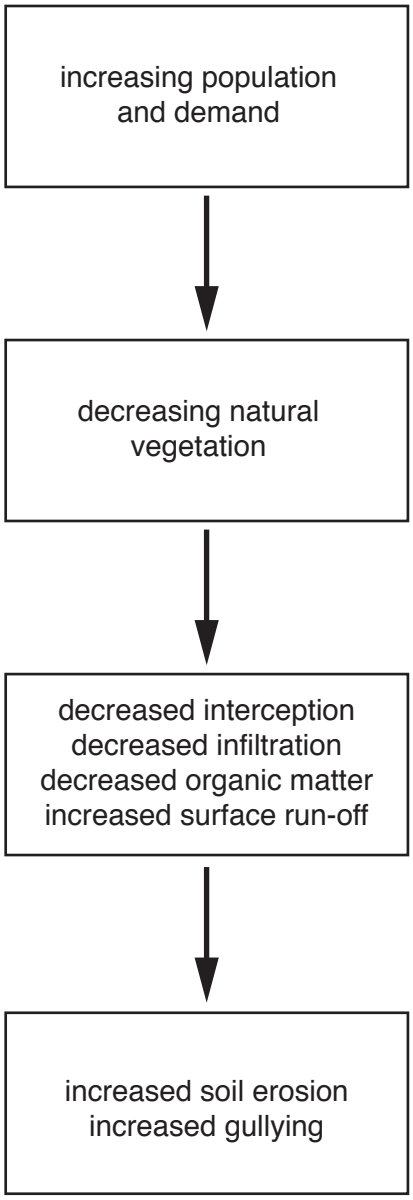
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[Turn over

5 **(a)** The diagram shows some steps leading to soil erosion.



(i) State the meaning of the terms *interception*, *infiltration* and *surface run-off*.

interception .....

.....

infiltration .....

.....

surface run-off .....

.....

[3]

(ii) The diagram says natural vegetation is decreasing.

Explain why natural vegetation is decreasing.

.....

.....

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.....

.....

..... [3]

(iii) The diagram says soil erosion has increased.

Explain why soil erosion has increased.

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..... [4]

(iv) ‘Contour ploughing is the best way to reduce soil erosion.’

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

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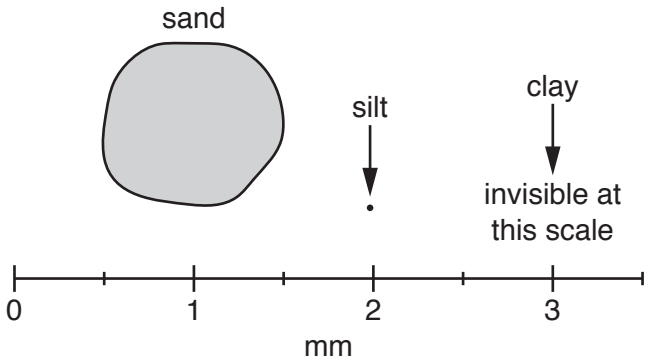
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..... [6]

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(b) The diagram shows the relative size of some mineral particles found in soil.



(i) Determine the diameter of the sand particle shown in the diagram.

..... mm [1]

(ii) State **two** other components of soil, apart from the mineral particles shown in the diagram.

1 .....

2 .....

[2]

(iii) Describe **four** differences between a sandy soil and a clay soil, other than particle size.

1 .....

.....

2 .....

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3 .....

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4 .....

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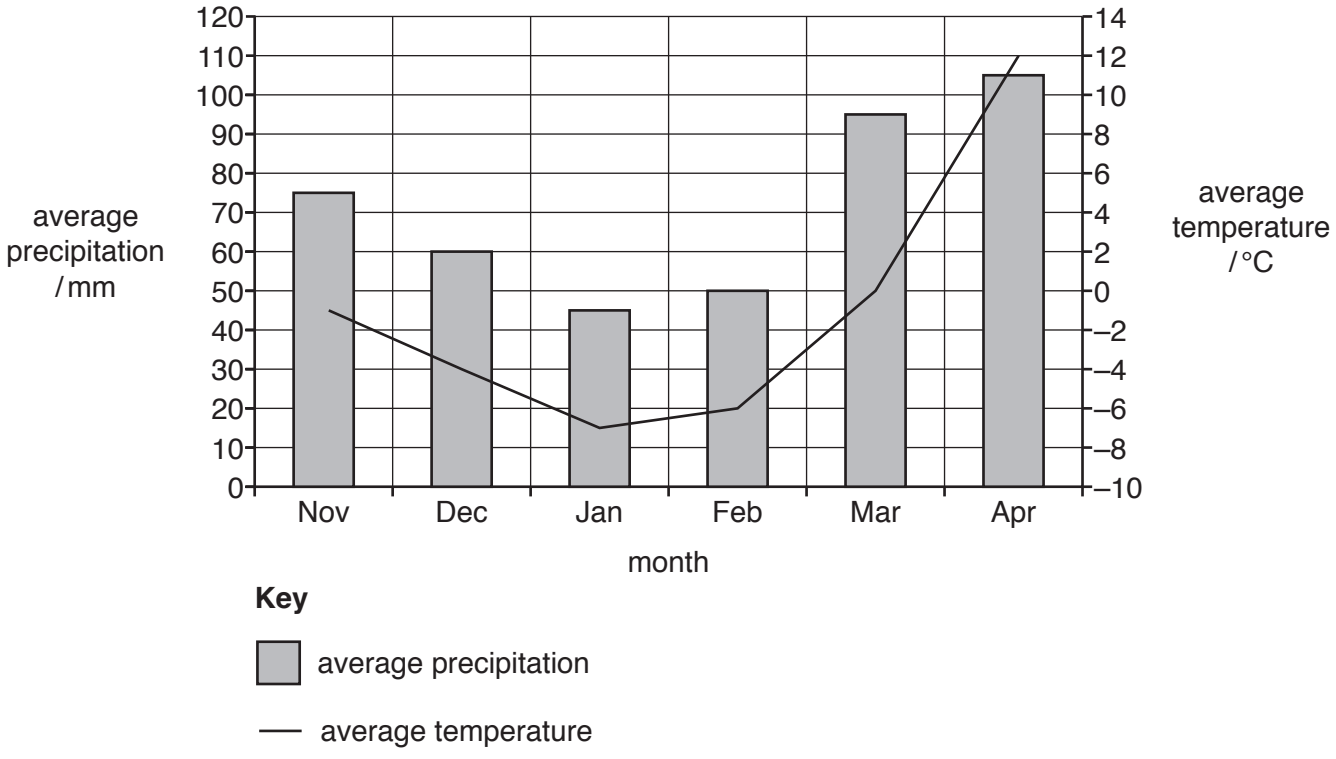
[4]

[Total: 23]

6 **(a)** The photograph shows a valley in a highland area.



The graph shows precipitation and temperature data for the valley over a six-month period in winter.



(i) The range of temperature is the difference between the maximum and minimum value.

Calculate the range of temperature for this six-month period.

..... °C [1]

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(ii) Using the photograph and the graph, explain why the valley was flooded in April.

.....

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.....

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..... [4]

(iii) Suggest **three** impacts of the flooding on the people living in the valley.

1 .....

.....

2 .....

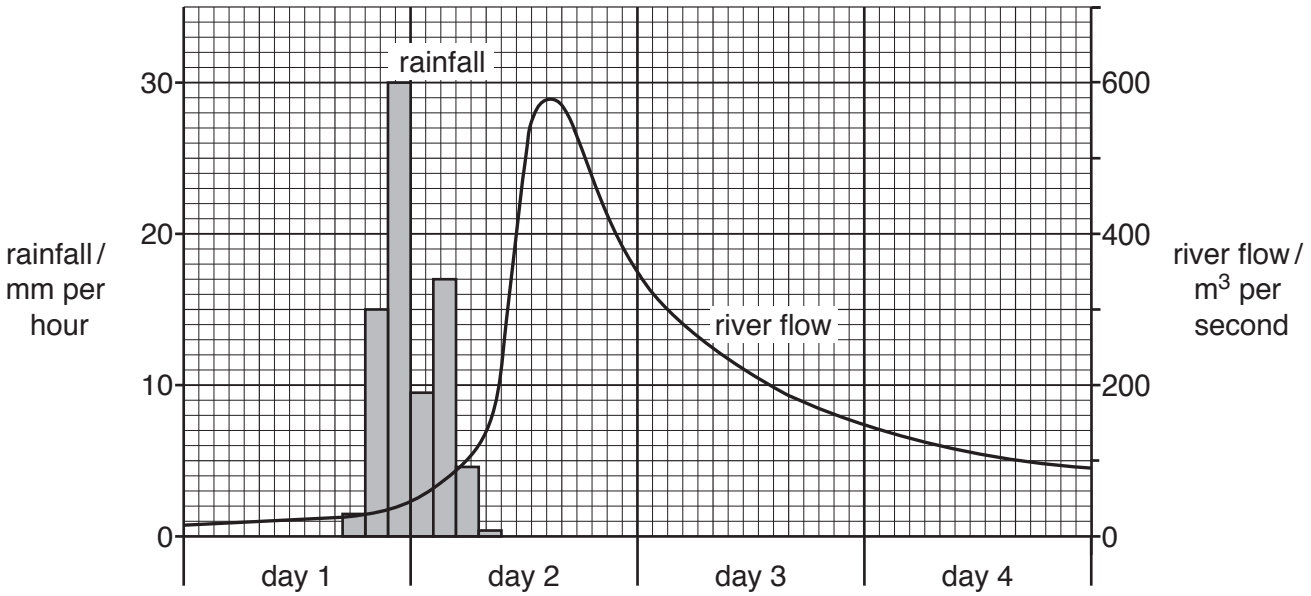
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3 .....

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[3]

(b) The graph shows a storm hydrograph.



(i) State the river flow before the rainfall began.

..... m^3 per second [1]

(ii) Describe the river flow during day 2.

.....

.....

.....

..... [2]

(iii) Explain why the highest river flow occurs several hours after the highest rainfall.

.....

.....

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.....

..... [3]

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(iv) Describe **three** flood management techniques that could be used to reduce the flood risk.

1 .....

.....

2 .....

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3 .....

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[3]

[Total: 17]

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