UNIVERSITY OF CAMBRIDGE INTERNATIONAL EX
International General Certificate of Secondary Educati

CANDIDATE
NAME

CENTRE
NUMBER

CAN
NUMBER

1182112539

GEOGRAPHY **0460/41**

Paper 4 Alternative to Coursework **October/November 2013**

1 hour 30 minutes

Candidates answer on the Question Paper.

Additional Materials: Calculator
Ruler
Protractor

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name in the spaces provided.
Write in dark blue or black pen.
You may use a soft pencil for any diagrams, graphs or rough working.
Do not use staples, paper clips, highlighters, glue or correction fluid.
DO **NOT** WRITE ON ANY BARCODES.

Answer **all** questions.

The Insert contains Figs 1, 2, and 3, Table 2 and Photographs A, B, C and D for Question 1, and Figs 5, 6 and 8 for Question 2.
The Insert is **not** required by the Examiner.
Sketch maps and diagrams should be drawn whenever they serve to illustrate an answer.

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.

For Examiner's Use	
Q1	
Q2	
Total	

This document consists of **14** printed pages, **2** blank pages and **1** Insert.

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UNIVERSITY of CAMBRIDGE
International Examinations

1 A class of students from a school in France were studying ho students had made simple rain gauges and also had some traditi

(a) (i) The two different rain gauges are shown in Figs 1 an differences between these rain gauges.

1 .....

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2 .....

.....[2]

(ii) Describe how the students would use the simple rain gauges they had made. These are shown in Fig. 1.

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.....[3]

The students used their homemade rain gauges to measure rainfall in their local area. They tested the following hypotheses:

Hypothesis 1: *Less rainfall reaches the ground as the density of vegetation cover increases.*

Hypothesis 2: *Less rainfall reaches the ground in summer than in winter.*

(b) The students chose three different locations near their school to measure the amount of rainfall which reached the ground. There is some information about each location in a factfile, Fig. 3 and Photographs A, B, C and D (Insert). To collect rainfall data the students placed a rain gauge at six different sites for each location.

(i) Suggest why they decided to use six rain gauges at each location.

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.....[2]

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The students decided to measure daily rainfall for the next tw
winter.

Table 1, below, shows their recording sheet for the six sites i
(Bare ground is an area without vegetation).

Table 1

Rainfall (mm) measured on bare grou

	Days when measuring was done in wi													
Site	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**
1	14	15	0	20	11	16	15	21	0	14	0	0	16	17
2	16	18	0	21	13	13	14	22	0	12	0	0	17	16
3	16	16	0	18	13	14	17	19	0	14	0	0	15	16
4	17	15	0	19	14	16	14	18	0	11	0	0	16	20
5	15	16	0	17	12	17	16	19	0	13	0	0	17	19
6	18	19	0	22	14	16	17	21	0	14	0	0	19	19
Average		**16.5**	**0**	**19.5**	**12.8**	**15.3**	**15.5**	**20**	**0**	**13**	**0**	**0**	**16.7**	**17.8**

(ii) Calculate the average rainfall which reached the ground on day 1.
Show your working. Insert your answer into Table 1.

[2]

(iii) Put in rank order the three days with the highest average rainfall shown in Table 1.

1 .....

2 .....

3 ..... [1]

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(iv) The average results calculated for each location are sho
these results to plot the following figures on Fig. 4 below.

- the average rainfall reaching the ground in the de
on day 13
- the average rainfall reaching the ground in the co
on day 4.

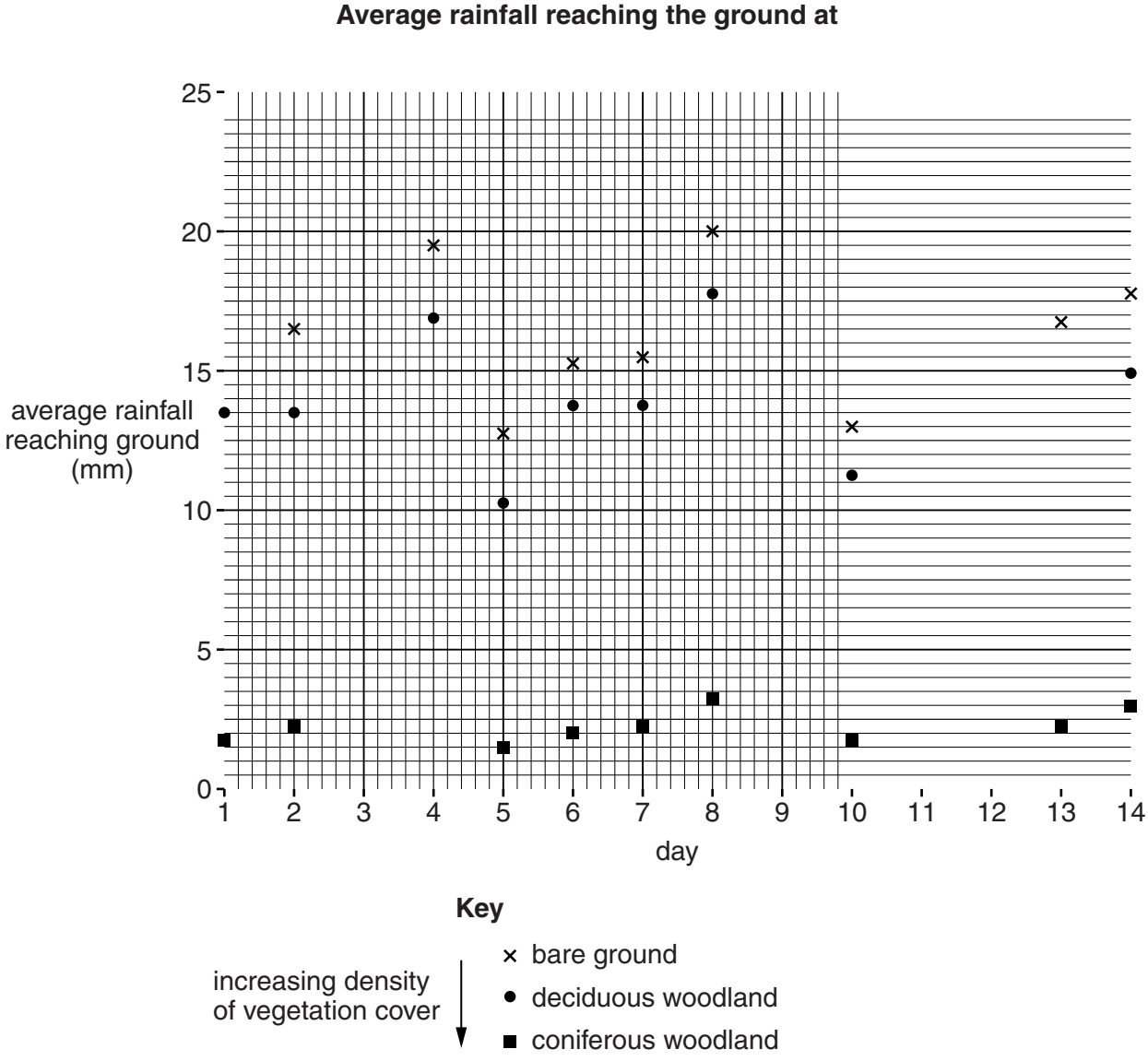


Fig. 4

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(v) Do these results prove that **Hypothesis 1:** *Less rainfall density of vegetation cover increases* is correct? Supp from Fig. 4 and Table 2.

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.....[4]

(vi) Explain why the amount of rainfall which reaches the ground varies between different types of vegetation.

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.....[2]

(c) To investigate **Hypothesis 2:** *Less rainfall reaches the ground in summer than in winter,* the students used secondary rainfall data collected in summer of the previous year to compare with their primary data collected in winter.

(i) Students often get both primary and secondary data to investigate an hypothesis. Complete the table below, which shows ways of getting both types of data, by putting the following methods under the correct heading.

getting information from a newspaper report using a barometer

measuring the speed of river flow researching on the internet [2]

Primary data	Secondary data
doing a wave count	getting information from an atlas map

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The primary data collected in winter and secondary dat
shown in Table 3, below.

Table 3

**Average daily rainfall (mm) reaching the ground at the t
in winter and summer**

Location	Winter	Summ
Bare ground	16.3	16.1
Deciduous woodland	13.9	7.1
Coniferous woodland	2.3	2.3

Note: the students calculated the average for the 10 days when rain fell and ignored the 4 days when there was no rainfall.

(ii) Look at Table 3 which compares the rainfall reaching the ground in each of the three locations in winter and summer. In which location is the difference in rainfall reaching the ground greatest?

Circle your choice below. [1]

bare ground deciduous woodland coniferous woodland

(iii) Do these results prove that **Hypothesis 2:** *Less rainfall reaches the ground in summer than in winter* is correct? Consider both deciduous woodland and coniferous woodland. Use data from Table 3 to support your answer.

Deciduous woodland .....

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Coniferous woodland .....

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.....[4]

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(iv) Suggest why there is a difference in the results betwee coniferous woodland shown in Table 3. Use the factfile in B, C and D (Insert) to help you to answer.

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(d) Describe how the students could use a maximum-minimum thermometer in a Stevenson Screen to investigate temperature change at their school.

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.....[3]

[Total: 30 marks]

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2 Four students decided to do an investigation into tourism in a villa agreed to test the following hypotheses:

Hypothesis 1: *People of different ages have different reason*

Hypothesis 2: *Local residents believe that tourism has a ne*

(a) (i) To begin their investigation the students divided into t questions to include in a questionnaire. The two que Figs 5 and 6 (Insert). Give **three** ways that Questionnai Questionnaire 1 (Fig. 5).

1 .....

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2 .....

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3 .....

.....[3]

(ii) Before using the questionnaire shown in Fig. 6, the four students thought about the best way to make use of it. They decided to ask the opinion of 100 people.

Name and describe a suitable sampling method for the students to select 100 people.

Name of sampling method .....

Description of method .....

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.....[3]

(iii) The students decided to put their questions to visitors returning to their cars before leaving the car park.
Suggest why they made this decision and **one** possible disadvantage of their decision.

Why they made the decision .....

.....

Disadvantage .....

.....

.....[2]

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(b) The results of Question 2 from the questionnaire are shown i

Table 4

Results of Question 2: How far have you travelled to g

Distance (km)	Number of visitors
20 or less	8
21 – 40	16
41 – 60	19
61 – 80	26
more than 80	31

(i) Use the results in Table 4 to complete the pie chart, Fig. 7, below. [2]

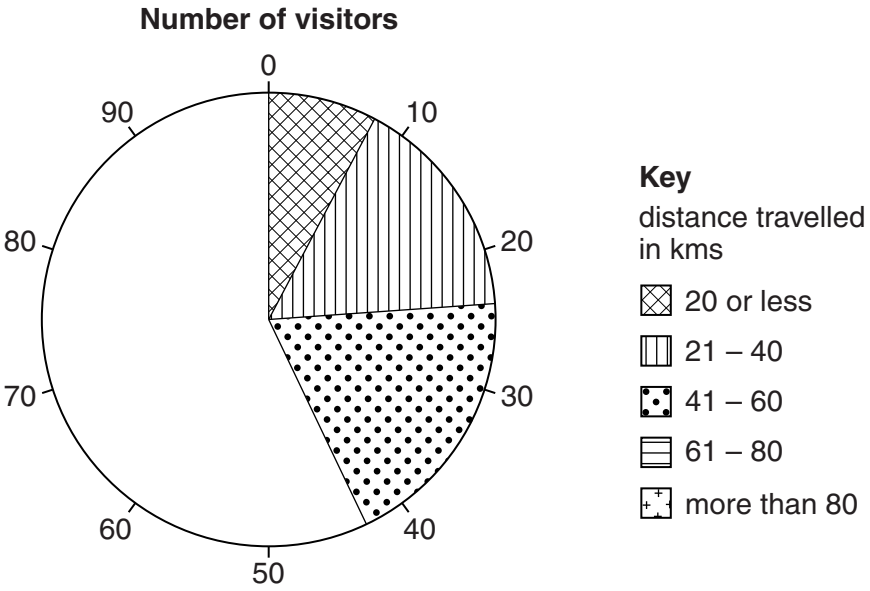


Fig. 7

(ii) Use the results of Question 2 from the questionnaire to identify **two** conclusions that the students could make about the distance travelled by visitors to the area.

1 .....

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2 .....

.....[2]

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(iii) The results of Question 3 are shown in Table 5, below, people interviewed.

Complete Table 5 by:

- recording that 2 people aged 20 – 35 and 1 person friends;
- inserting the total number of people interviewed 36 – 50.

Table 5

Results of Question 3: What is the main reason for your visit to this area today?

	Age group					
Main reason for visit	Under 20	20 – 35	36 – 50	51 – 65	Over 65	Total
Walking less than 5 km	4	4	5	5	3	21
Walking more than 5 km	1	5	6	2		14
Climbing		3	4			7
Having a picnic	2		2			4
Sightseeing			2	5	4	11
Bird watching				2		2
Cycling / mountain biking	5	2	2			9
Horse riding	3	2				5
Driving			2	2	2	6
Running / jogging	2	1	1			4
Shopping			3	1	3	7
Visiting historic monument / building	2			3	2	7
Other: includes visiting friends						3
Total	19	19		20	15	100

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(iv) The students used the information in Table 5 to wor
Hypothesis 1: *People of different ages have different re*
Do you think the hypothesis is correct? Support your con
Table 5.

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.....[4]

(c) To investigate **Hypothesis 2:** *Local residents believe that tourism has a negative impact on the area*, the students interviewed 50 residents to get their opinions about tourism. The questions which they asked in the interview are shown in Fig. 8 (Insert).

(i) Suggest why the students asked *Do you live in the village?* at the beginning of the interview.

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.....[1]

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(ii) The results of Question 2 in the interview are shown in T

Table 6

Results of Question 2: How much of a problem do you t

	Very severe problem	Quite severe problem	Slight problem	
Litter	30	10	10	
Noise	18	18	10	4
Anti-social behaviour / Impoliteness	16	18	10	6
Traffic	20	18	12	0
Parking	16	16	10	8

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Using the results from Table 6 complete Fig. 9 below t
think about the problem of parking.

The opinions of 50 local residen

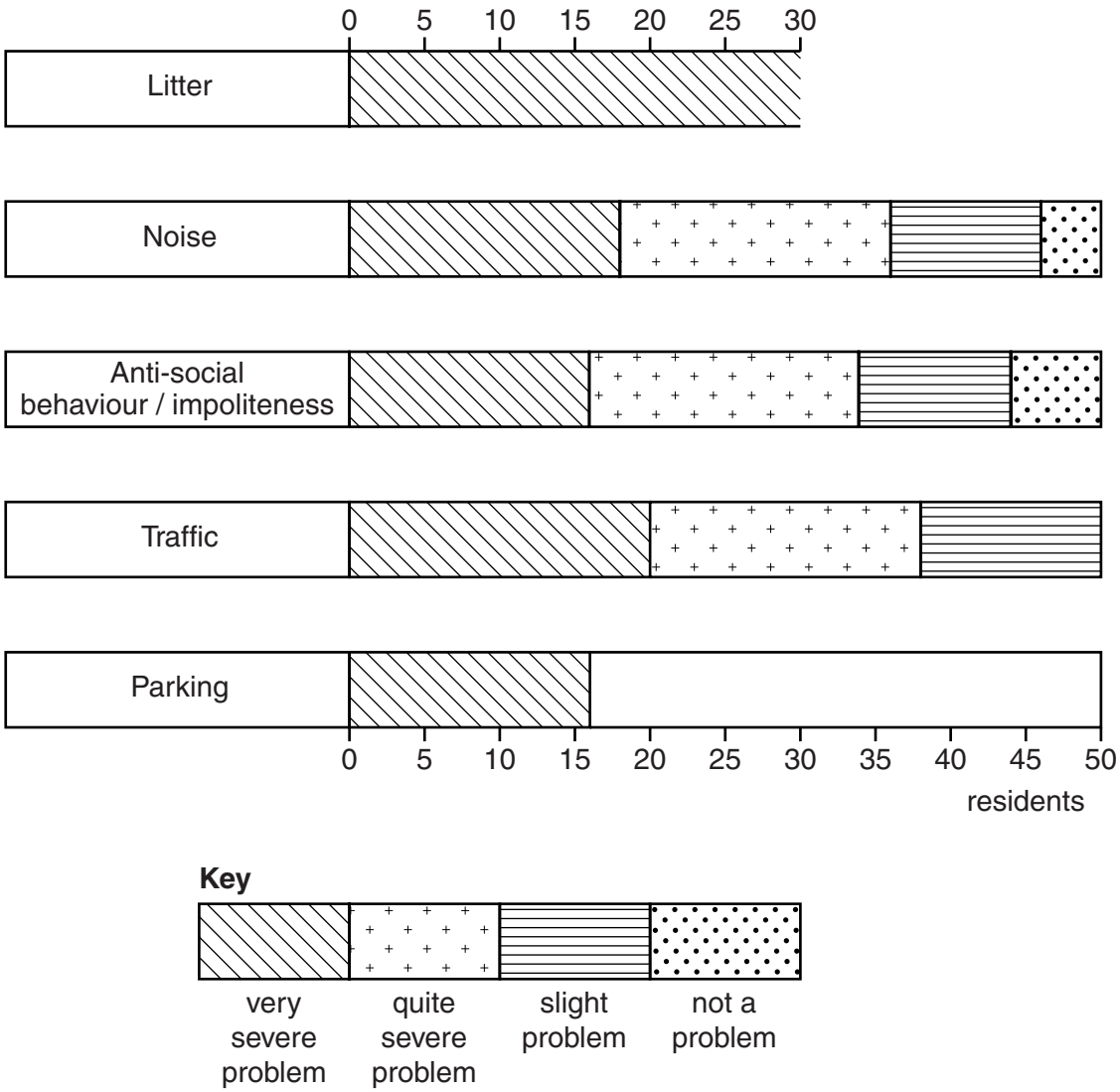


Fig. 9

(iii) One other problem suggested by a local resident was that '75% of the tourists come between April and September'.
Suggest **one** reason why the resident considers this to be a problem.

.....

.....[1]

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(iv) The results of Question 3 are shown in Table 7 below.

Table 7

Results of Question 3: How important do you think thes

Benefit	Very important	Quite important	Slightly importa	
Creates jobs in the local area	10	11	19	
Brings money into the area	11	15	18	6
Local residents can use tourist facilities	7	13	16	14

Which **one** of the benefits shown in Table 7 is thought by residents to be most important? Circle your answer below.

Creates jobs in the local area

Brings money into the area

Local residents can use tourist facilities [1]

(v) What conclusion would the students make about **Hypothesis 2:** *Local residents believe that tourism has a negative impact on the area?* Refer to data in Tables 6 and 7 to explain your answer.

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.....[3]

(d) Suggest how the students could do some fieldwork to investigate the traffic problem in the village in the national park.

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.....[3]

[Total: 30 marks]

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Question 1 Photograph D © http://www.offwell.free-online.co.uk/maps_website/coniferouswoodland.htm

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