Cambridge IGCSE

CANDIDATE NAME	

CENTRE NUMBER					

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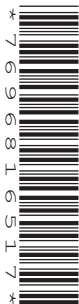
GEOGRAPHY 0460/41

Paper 4 Alternative to Coursework **May/June 2014**

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 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.

The Insert contains Fig. 3 and Tables 3 and 4 for Question 1, and Figs 6A and 6B and Table 5 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.

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

[Turn over

1 A class of students was doing fieldwork in the main shopping area of a city centre. They wanted to find out how the shopping area had changed and what people who came to the shopping area thought about it. They decided to test the following hypotheses:

Hypothesis 1: *Shops and services in the area have changed between 1985 and 2010.*

Hypothesis 2: *People are most attracted to the area by its variety of shops, but are most concerned about the amount of litter and graffiti.*

(a) First the students completed a land-use map of the shopping area. This map is shown in Fig. 1 opposite.

    (i) Use the map key to label the following buildings on Fig. 1:

- a clothes store at point **X**;
- a bank at point **Y**. [2]

    (ii) Describe the distribution of the food shops shown on Fig. 1.

....

....

....

....[2]

    (iii) What type of shop or service is located north of point **X**?

....[1]

    (iv) What type of shop or service is located 100m west of point **Y**?

....[1]

Shopping area in 2010
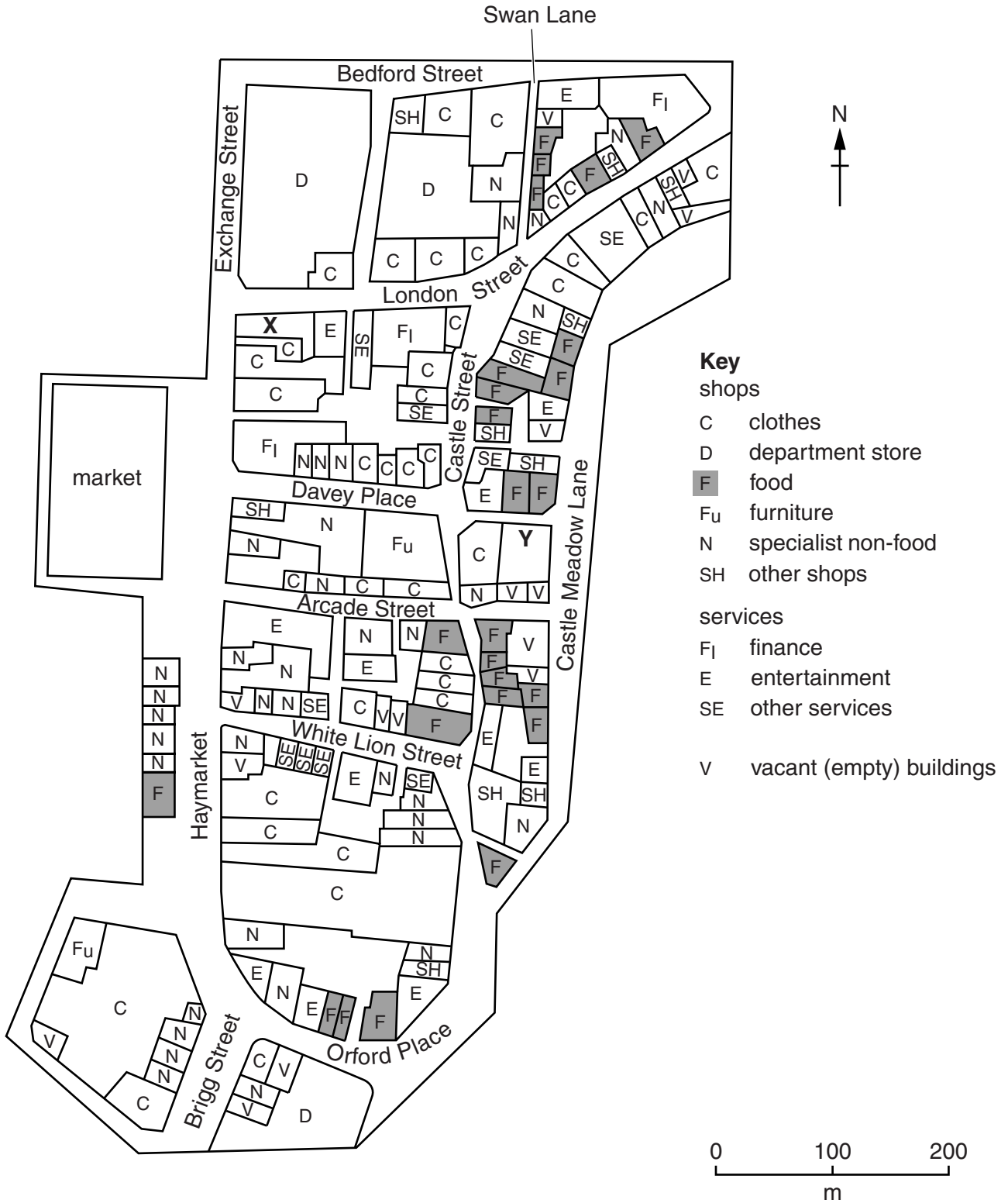
Fig. 1

(b) To compare the different shops and services in 1985 and 2010 the students produced Table 1 below.

Table 1

Number of shops and services located in the shopping area

Category	1985	2010
Shops		
Clothes	55	38
Department store	5	3
Food (including cafes, bars, restaurants, take-away food)	6	25
Furniture	14	2
Specialist non-food (including electrical, mobile or cell phones, sports, jewellery)	41	38
Other shops	3	10
Services		
Finance	6	4
Entertainment (including nightclubs, theatres)	7	11
Other services (including travel agents, solicitors)	9	11
Vacant (empty) buildings	7	15
Total	153	157

(i) The students obtained the data for 1985 from a map which showed the area in that year.

What is the correct term for this type of data? Circle your choice below.

Fieldwork data   Primary data

Sampling data   Secondary data   [1]

(ii) The students used Table 1 to draw the graph, Fig. 2 below.

Complete the graph in Fig. 2 (below) to show the changes in the number of furniture shops and other shops. [2]

Changes in the number of shops and services between 1985 and 2010
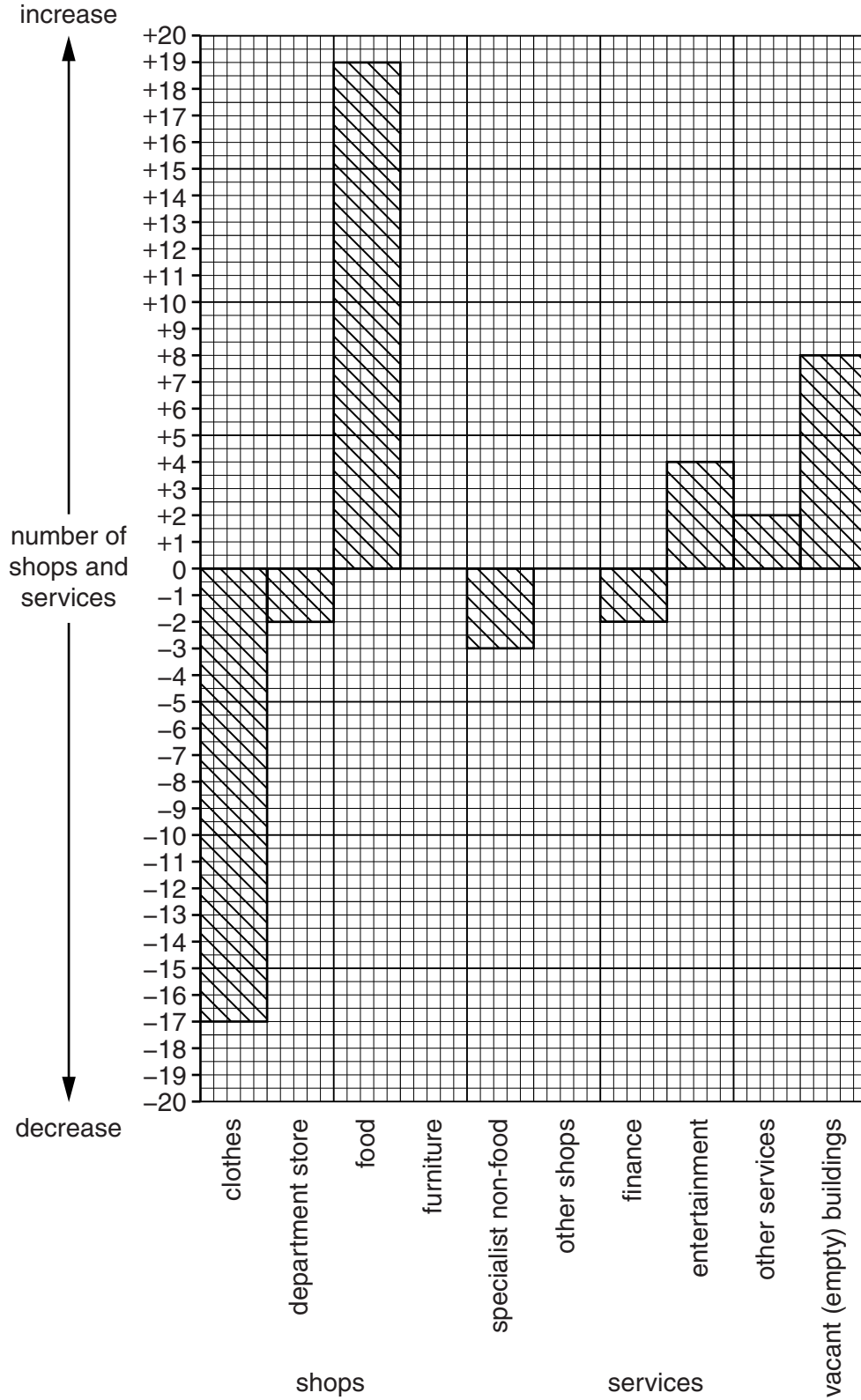
Fig. 2

(iii) What conclusion would the students make about **Hypothesis 1:** *Shops and services in the area have changed between 1985 and 2010*? Support your decision with evidence from Table 1 and Fig. 2.

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....[4]

(c) To investigate **Hypothesis 2:** *People are most attracted to the area by its variety of shops, but are most concerned about the amount of litter and graffiti*, the students used a questionnaire with people in the shopping area. Their questionnaire is shown in Fig. 3 (Insert).

(i) The students used the method of stratified sampling to get a reliable sample of people to ask. How would they use this method to select people to complete their questionnaire?

....

....

....

....[2]

(ii) Suggest **two** problems which the students may have faced in completing their questionnaire survey.

1 ....

....

2 ....

....[2]

(d) (i) Table 2 below shows the results of Question 1 in the questionnaire.

Table 2

How long do you expect to be shopping here?

Length of time	Number of answers
0–15 minutes	8
16–30 minutes	20
31–59 minutes	30
1–2 hours	31
More than 2 hours	11

Use the results from Table 2 to complete the pie graph in Fig. 4 below.   [2]
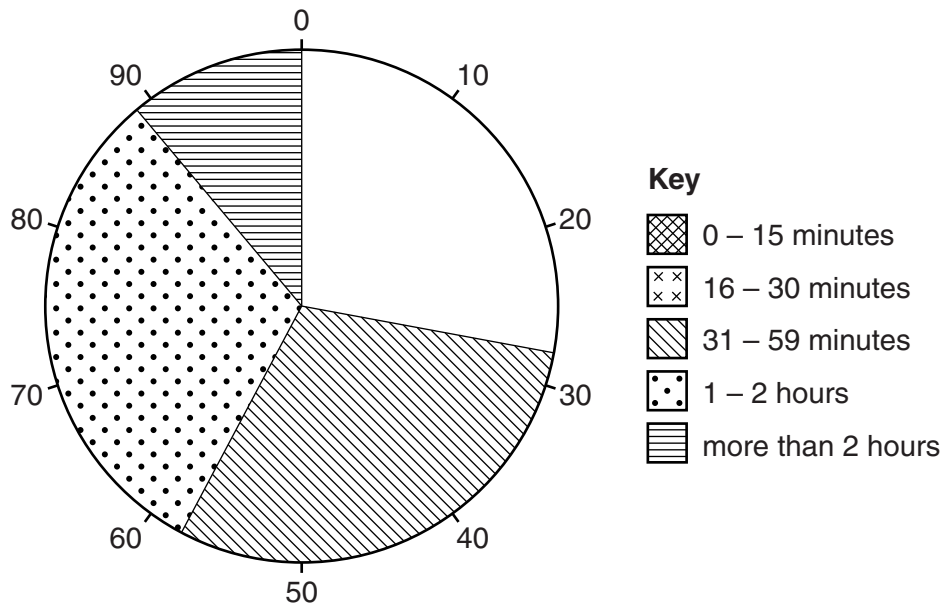
Fig. 4

(ii) The answers to Question 2 in the questionnaire are shown in Table 3 (Insert).

Suggest **two** answers that could be included in the 'Other reason' category.

1 ....

2 ....[2]

                                       [Turn over

(iii) The students grouped the answers they received to Question 3 in the questionnaire. The answers given are shown in Table 4 (Insert).

Under which heading in Table 4 would the following answers be included?

1 When it is busy at the weekend and during holiday times it is difficult to get from one shop to another.

Concern..

2 I don't like coming to the shops alone because I don't feel safe.

Concern..[2]

(iv) What conclusion would the students have made about **Hypothesis 2:** *People are most attracted to the area by its variety of shops, but are most concerned about the amount of litter and graffiti*? Support your answer with evidence from the results of Questions 2 and 3 in the questionnaire.

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....[3]

(e) To extend their fieldwork the students decided to investigate the sphere of influence of the shops. The sphere of influence is the area where people who use the shops live. Describe how they could carry out this fieldwork and show their results.

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....[4]

[Total: 30 marks]

QUESTION 2 BEGINS ON PAGE 10

2 Students from a school in England were using weather instruments to measure and record changes in the weather during a number of days in April. The students measured temperature, rainfall, atmospheric pressure and wind direction. They investigated the following hypotheses:

Hypothesis 1: *Rainfall decreases as atmospheric pressure rises.*

Hypothesis 2: *The temperature is affected by the direction from which the wind is blowing.*

(a) (i) Which instrument would be used to measure the following:

temperature; ....

atmospheric pressure? ....[2]

(ii) Fig. 5, below, shows a rain gauge and measuring cylinder.

Complete the sentences in the boxes on Fig. 5 to explain how the students would use this equipment. [3]

A rain gauge and measuring cylinder

scale

3) To get an **accurate** measurement you should
....
....
....

funnel

surface

ground

measuring cylinder

outer cylinder

2) The rainwater is poured
from ....
....
into ....
....

collecting jar

1) The rain gauge is partly buried in the ground to
....
....
....

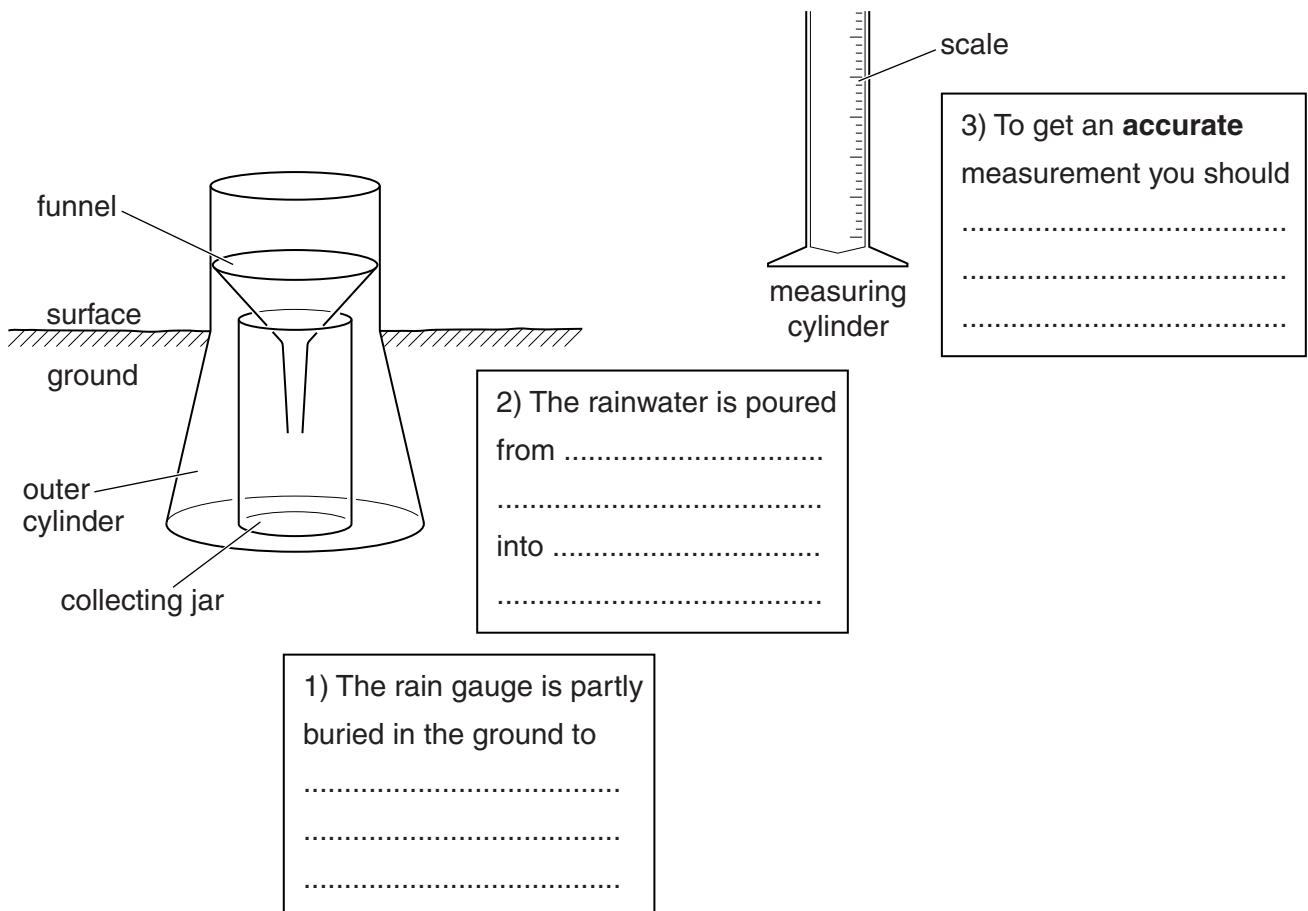**Fig. 5**

(iii) Suggest **three** factors which the students should have considered in choosing a site for the rain gauge.

1 ....

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2 ....

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3 ....

....[3]

(iv) The students used a wind vane to observe wind direction. Suggest a good position to put a wind vane and explain your choice.

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....[2]

(v) Explain how a wind vane shows wind direction.

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....[3]

 [Turn over

(b) The results of the students' measurements for **Hypothesis 1:** *Rainfall decreases as atmospheric pressure rises*, are shown in Figs 6A and 6B (Insert).

    (i) What was atmospheric pressure at 06.00 on day 5?

        .... mb   [1]

    (ii) At what time and day was the highest rainfall amount recorded?

        Time .... Day ....   [1]

    (iii) What conclusion would the students make about **Hypothesis 1**? Support your decision with evidence from Figs 6A and 6B.

        ....

        ....

        ....

        ....

        ....

        ....

        ....

        ....[4]

(c) The results of the students' measurements for **Hypothesis 2:** *The temperature is affected by the direction from which the wind is blowing*, are shown in Table 5 (Insert).

    (i) Use the results in Table 5 to plot the following measurements onto Fig. 7 opposite:

         •   temperature and wind direction at 00.00 hours on day 14;
         •   temperature and wind direction at 18.00 hours on day 2.   [2]

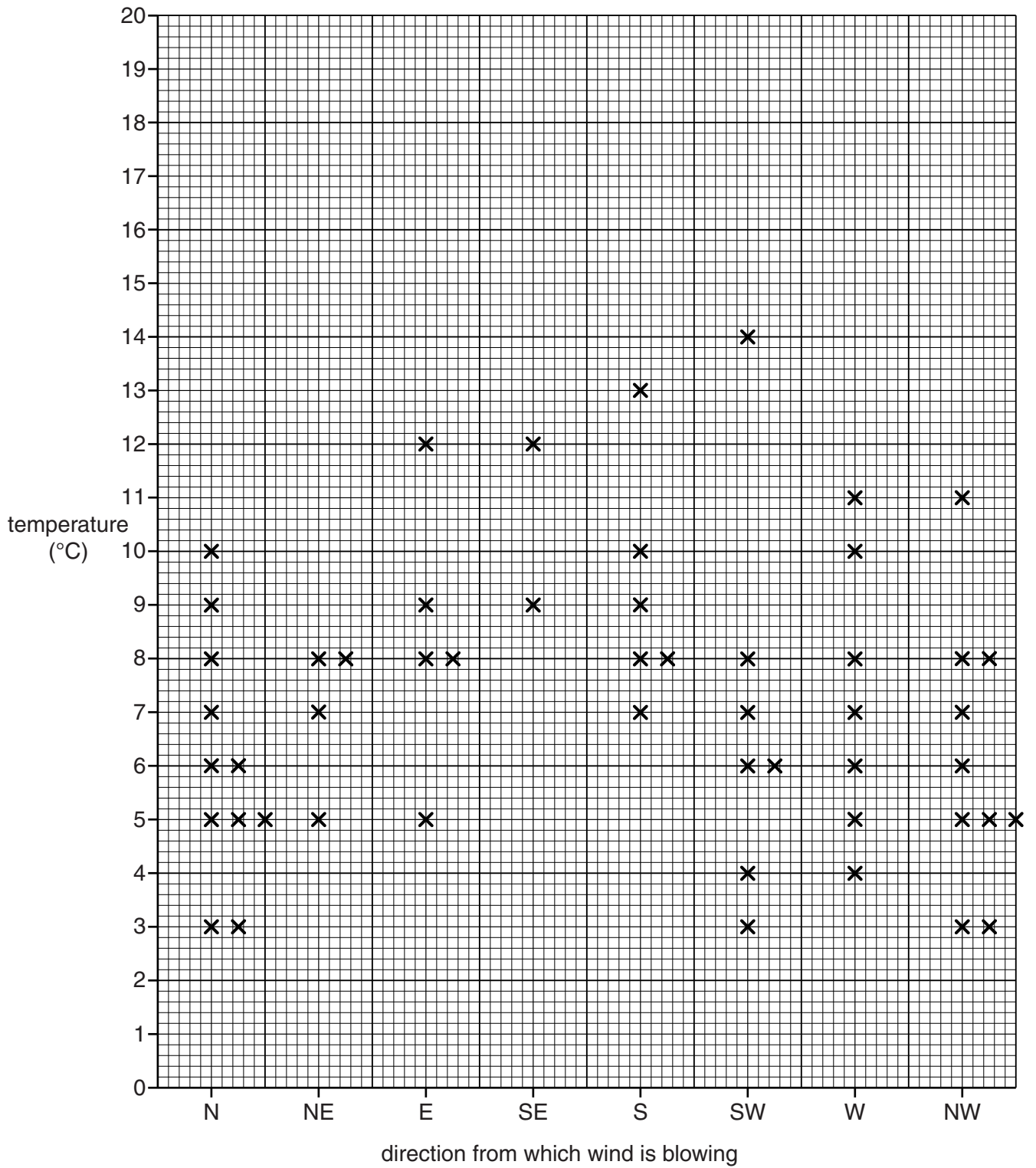**Results of temperature and wind direction measurements for Hypothesis 2**

Fig. 7

(ii) When they studied their results the students came to the conclusion that **Hypothesis 2:** *The temperature is affected by the direction from which the wind is blowing*, was false. Support this conclusion with evidence from Fig. 7.

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....[3]

(iii) Look again at Table 5 (Insert).

Describe the variation in temperature during day 2.

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....[1]

(iv) Suggest **one** reason why temperatures varied during day 2.

....

....[1]

(d) Describe how the students could extend their study to measure the amount of cloud cover and cloud type.

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....[4]

[Total: 30 marks]

15

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