UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

CANDIDATE NAME

CENTRE NUMBER

CANDIDATE NUMBER

GEOGRAPHY **0460/04**

Paper 4 Alternative to Coursework **May/June 2007**

1 hour 30 minutes

Candidates answer on the Question Paper.

Additional Materials: Ruler
Protractor
Calculator

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 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 Fig. 4 for Question 2.
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 and **2** blank pages and **1** Insert.

1 Students investigated the central area of a town located on the coast. They surveyed the buildings of the town to identify where the central business district (CBD) was located. A map of the town is shown on Fig. 1. The students recorded the height, width and function of the buildings. The hypothesis of the investigation was:

'the height and width of buildings and the price of the land increase towards the centre of the town'.

(a) Suggest why the increase in the price of the land may affect the height and width of buildings.

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(b) The students carried out a pilot survey to look at the town. State **two** reasons for a pilot survey.

Reason 1 .....

Reason 2 .....[2]

(c) 10 sites were chosen to sample buildings in the town. At each site, the 10 closest buildings were observed. The height of each building was measured by counting storeys and the width of each building was measured in paces. An average height and width was calculated for each site. These are shown on Table 1.

(i) Use the results in Table 1 to plot the average building height and width at site C and site F onto Fig. 1. [3]

Table 1

Average height and width of buildings at each site

Site	A	B	C	D	E	F	G	H	I	J
Average height (storeys)	3	3	2	1	2	1	3	1	2	2
Average width (paces)	12	7	7	7	8	8	8	5	4	5

For Examiner's Use

Average height and width of buildings at each site

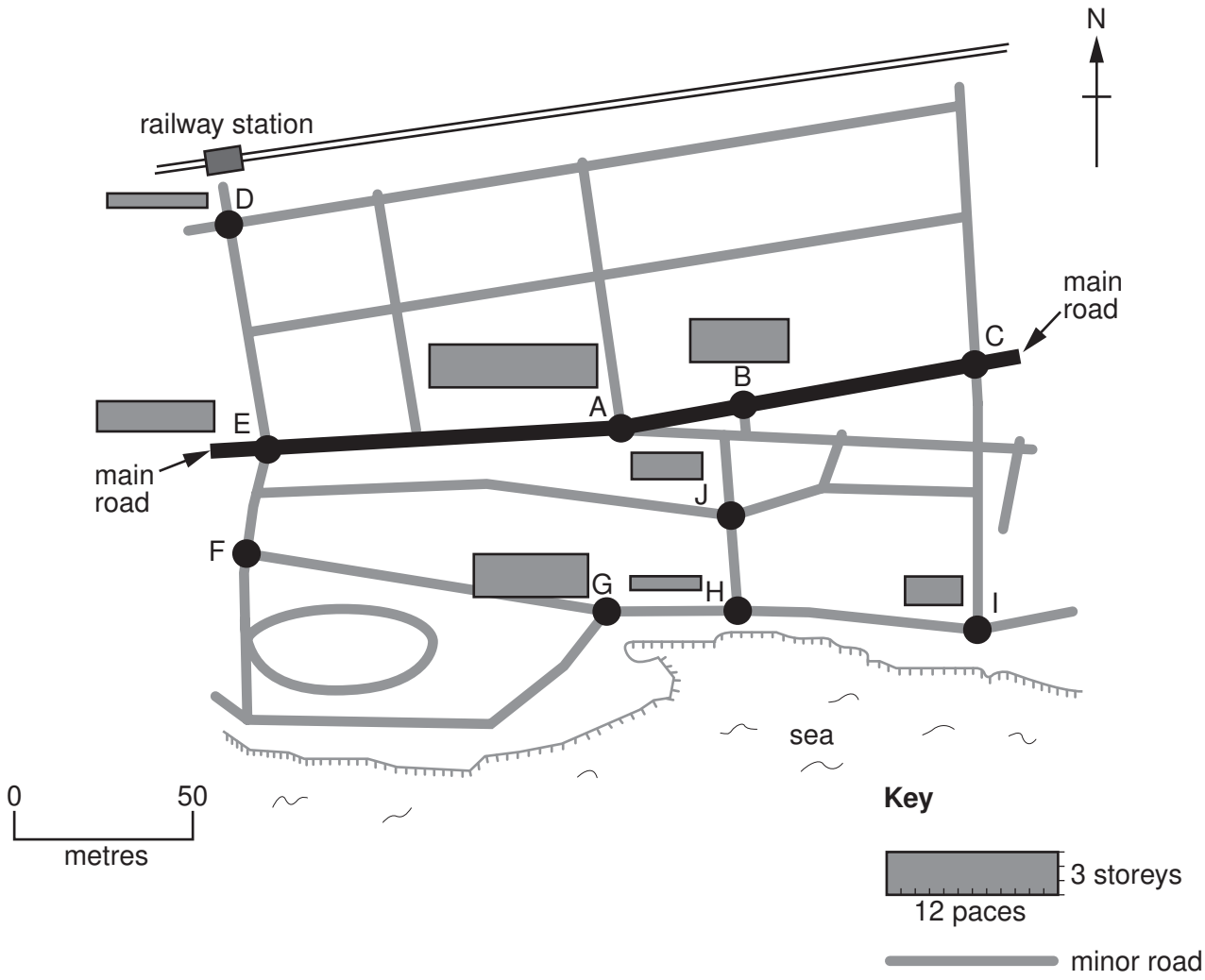

Fig. 1

(ii) Study the completed map (Fig. 1) and describe the pattern of building heights and widths shown in the town.

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(d) (i) The ground floor function of the 10 buildings at each site was recorded. Why did the students only record the ground floor function of the buildings?

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(ii) In the boxes below, write 'CBD' next to **two** functions which are found in the CBD of a town. [2]

BANK		MAIN POST OFFICE	
DEPARTMENT STORE		GENERAL STORES	
LOW COST HOUSING		TOURIST OFFICE	

(iii) Tick the hypothesis which would be the best to use to investigate the functions of the CBD. [1]

A ***'Buildings closer to the CBD have a mainly residential function'***

B ***'Buildings closer to the CBD have a mainly commercial function'***

C ***'Buildings closer to the CBD have a mainly tourist function'***

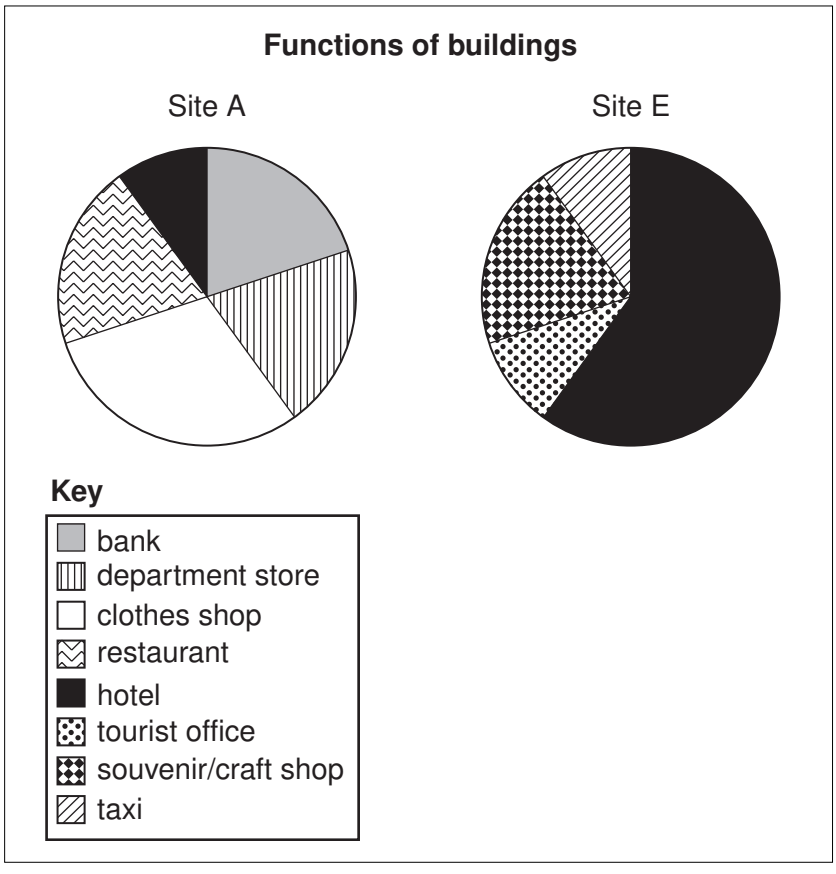

Fig. 2

(iv) The functions of the 10 buildings at Site A and Site E are shown in Fig. 2. Compare the functions of the two sites.

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(e) The teacher encouraged a group of students to organise their own pedestrian or traffic count. Describe in detail how and where the students could do this in the town.

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(f) Land values for each site were collected from the municipal town hall. The value is measured in thousand US dollars for each square metre. The results are shown on Table 2 and plotted on Fig. 3.

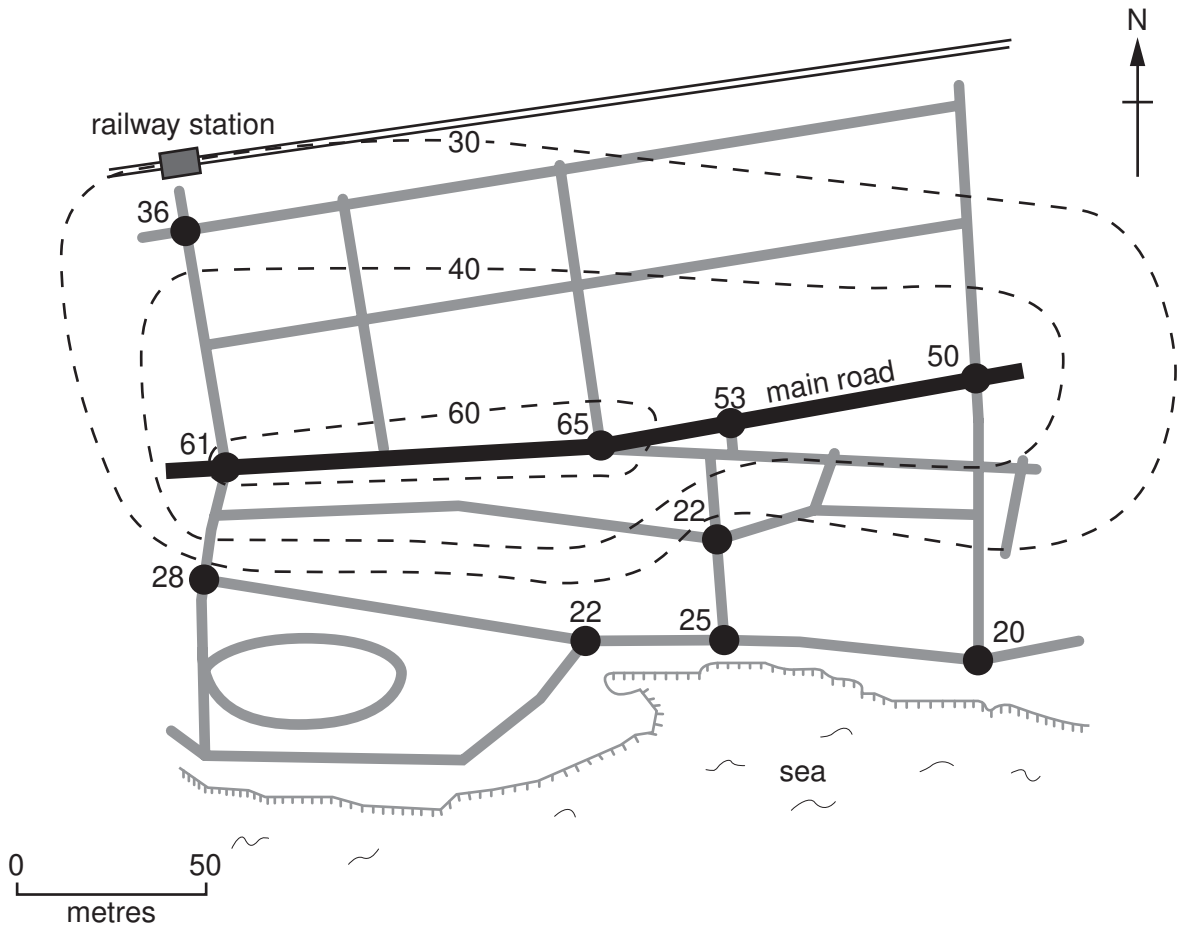
(i) Draw the isoline for 50 thousand US$/m^2 [2]

(ii) Colour in the land valued above 60 thousand US$/m^2 [1]

Table 2

Land values at each site (thousand US$/m^2)

Site	A	B	C	D	E	F	G	H	I	J
Land value thousand US$/m^2	65	53	50	36	61	28	22	25	20	22



Key

– -60- – isoline of land value (thousand US$/m^2)

minor road

Fig. 3

(g) Look again at Table 1 and Figs 1, 2 and 3. Write a conclusion to this investigation. You should comment on the original hypothesis suggesting where the centre of the town is located. Give reasons for your decision, stating data from Table 1 and Figs 1, 2 and 3. You should mention building height, building width and the value of the land.

Comment on original hypothesis:

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2 Students investigated a local beach in summer by looking at changes in the beach material. The beach was used by local residents and tourists and a sketch map of it is shown in Fig. 4 (Insert).

(a) (i) The teacher stated that the waves at this beach became more destructive, higher, more frequent and with greater backwash during storms. This caused material near the back of the beach to be larger than at the water's edge.
Add labels to the diagram in Fig. 5 to show wave height, wave length, swash and backwash.

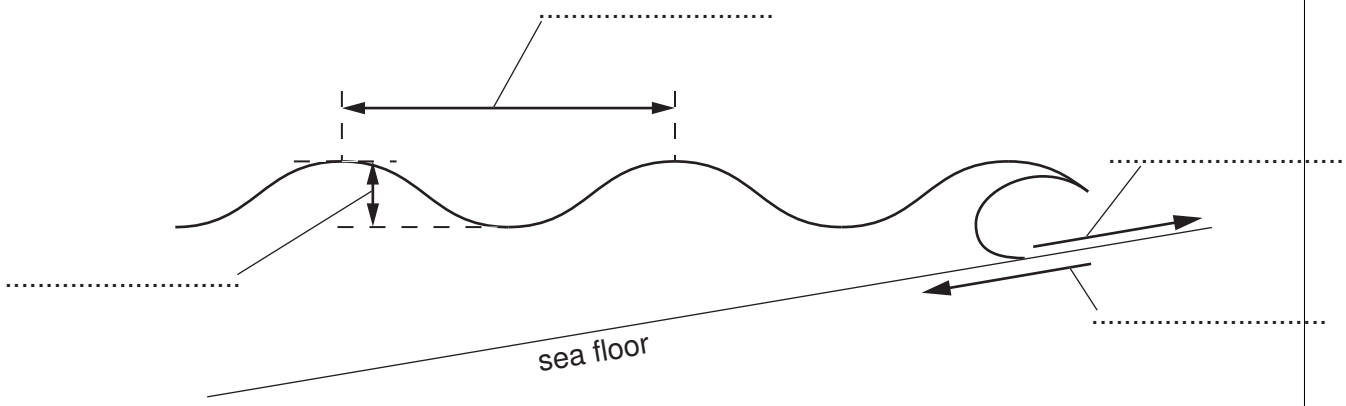

Fig. 5 [2]

(ii) What is a *destructive wave*?

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(b) The students used a measuring tape to form a transect line, shown on Fig. 4 (Insert), from the water's edge (LWM – low water mark) to the sea wall. A quadrat was used systematically to sample the beach material at 12 sites along the transect line.

(i) Define *systematic sampling*.

What are the advantages of using this method rather than random sampling?

Definition: .....

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Advantages: .....

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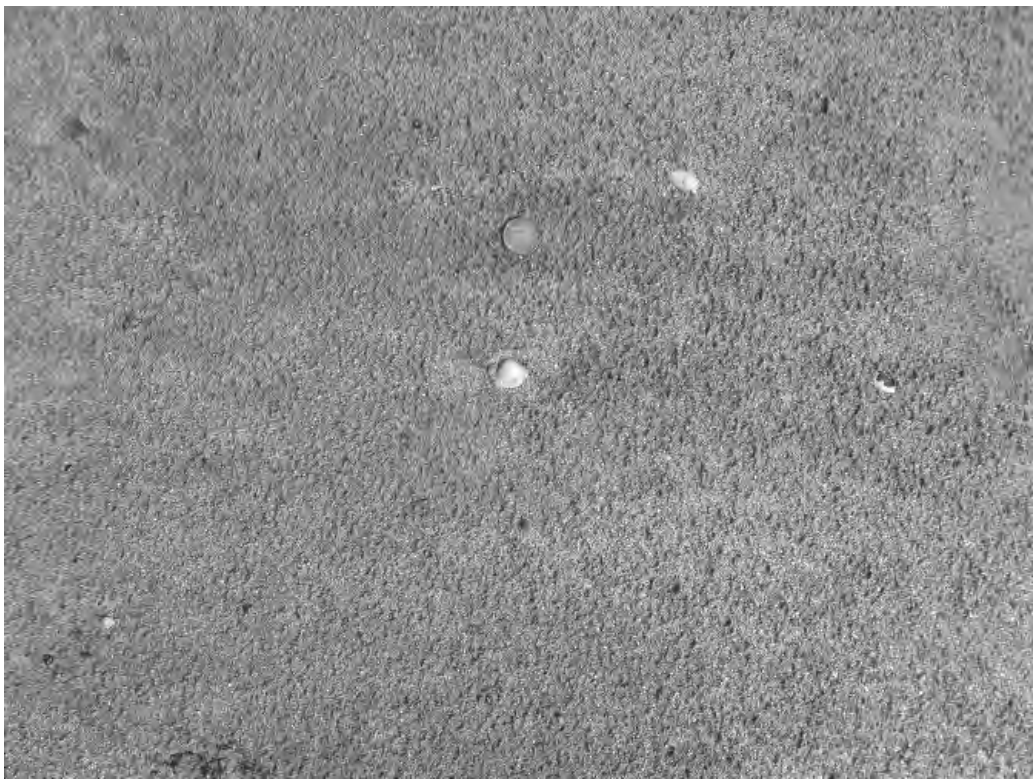
(ii) Photograph A was taken at Site 1 on the transect, shown on Fig. 4 (Insert), and Photograph B was taken at Site 12. The coin is used to show scale.

Annotate Photograph B to show the differences in beach material. [3]



Photograph A

Photograph B

(c) Material from the centre of each quadrat at each end of the transect was taken back to school and sieved. The results are shown in Table 3.

Table 3

	Size of material (%)			
	Sand	Shingle	Small pebbles	Other material
Site 1 LWM	90%	9%	0	1%
Site 12 back of beach	57%	20%	6%	17%

(i) Use Table 3 and the key to complete the bar chart for Site 12. [3]

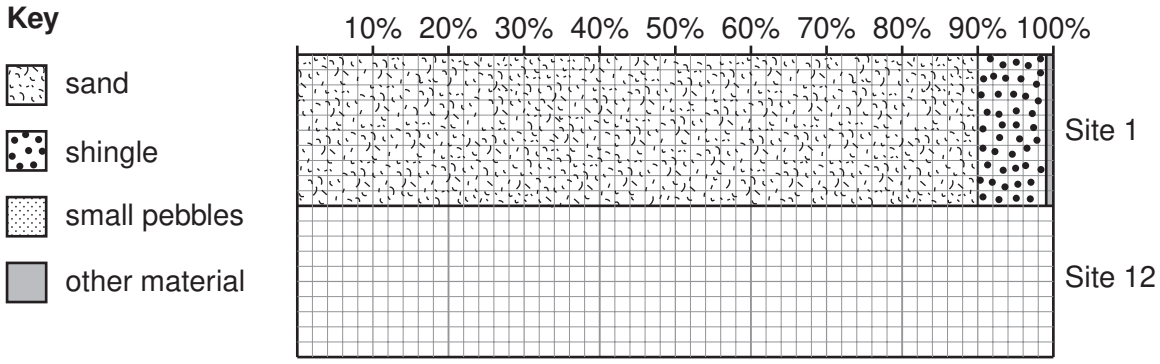


Fig. 6

(ii) Use Fig. 6 to describe the differences in beach material between Site 1 and Site 12.

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(iii) Write a conclusion to the beach material investigation.

Comment on the original ideas:

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Data evidence:

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(d) The photograph and sieving at Site 12 produced material which was not sand, shingle or small pebbles. This was classified as 'other material'. The students returned to the beach to investigate the 'other material'. Explain how 'other material' arrives at the beach.

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(e) In order to collect data about the 'other material', the students walked along the beach from W to E, just in front of the sea wall – see Fig. 4 (Insert). They observed the 'other material' present and completed a bi-polar scoring recording sheet every 20 paces. The recording sheet is shown in Fig. 7.

(i) Write instructions to the students about how to collect the data using this recording sheet.

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Number of paces from W:						
	–2	–1	0	+1	+2	
lots of wood						no wood
lots of glass						no glass
lots of paper						no paper
lots of cigarette ends						no cigarette ends
lots of plastic						no plastic
Total for Site :						

Fig. 7

Results of the bi-polar survey every 20 paces along the beach from W to E

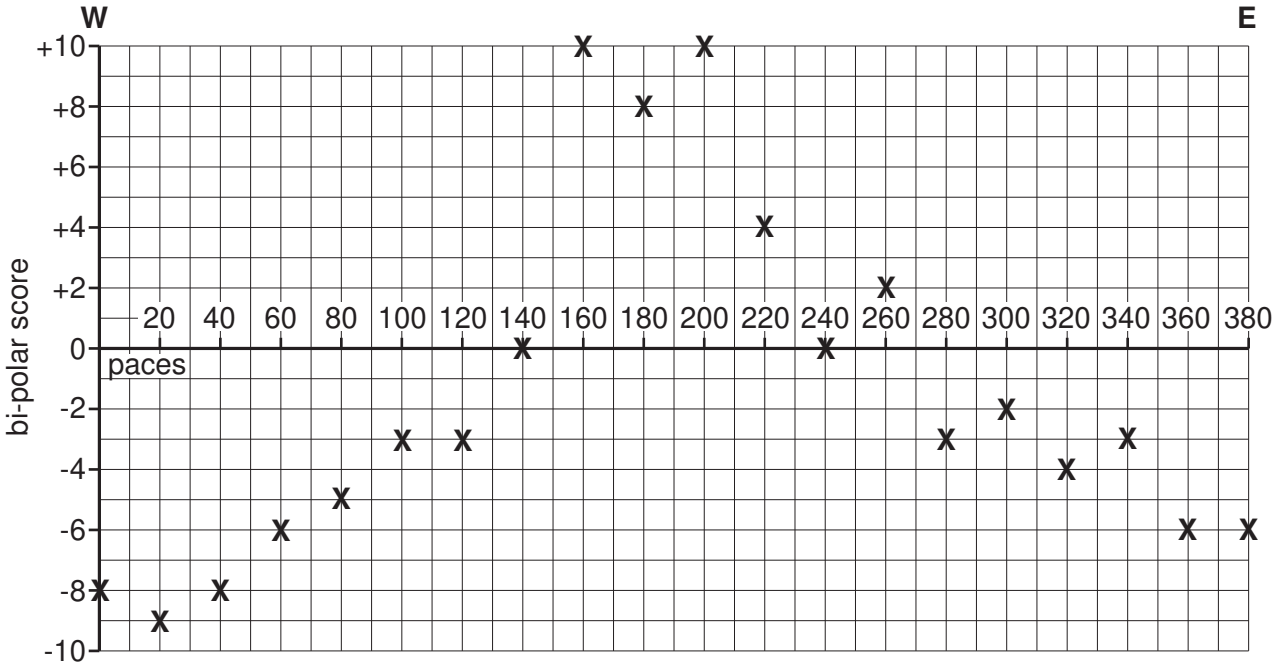

Fig. 8

(ii) Describe and give possible reasons for the results shown in Fig. 8.

Description:

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Reasons:

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(f) Evaluate the data collection methods that the students used in their beach material investigations. You should suggest advantages, disadvantages and improvements.

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