



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

CANDIDATE
NAME

CENTRE
NUMBER

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NUMBER

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GEOGRAPHY

0460/22

Paper 2

May/June 2013

1 hour 30 minutes

Candidates answer on the Question Paper.

- Additional Materials:
- Ruler
 - Protractor
 - Plain paper
 - Calculator

1:25 000 Survey Map Extract is enclosed with this question paper.

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 Photographs A and B for Question 3.

The Survey Map Extract and the Insert are **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	
Q3	
Q4	
Q5	
Q6	
Total	

This document consists of **18** printed pages, **6** blank pages and **1** Insert.



1 Study the map extract for La Ferme Reservoir, Mauritius. The scale is 1:25 000.

- (a) (i) Height above sea level is shown by contour lines. What is the difference in height between the contours on this map? Tick **one** answer below.

	Tick (✓)
1 m	
10 m	
20 m	
50 m	
100 m	

[1]

- (ii) The map has grid lines which make squares. What area of land does one grid square show? Tick **one** answer below.

	Tick (✓)
1 km ²	
10 km ²	
20 km ²	
50 km ²	
100 km ²	

[1]

(b) Fig. 1 shows some of the features in the north east part of the map extract. Study the map extract, and answer the questions below.

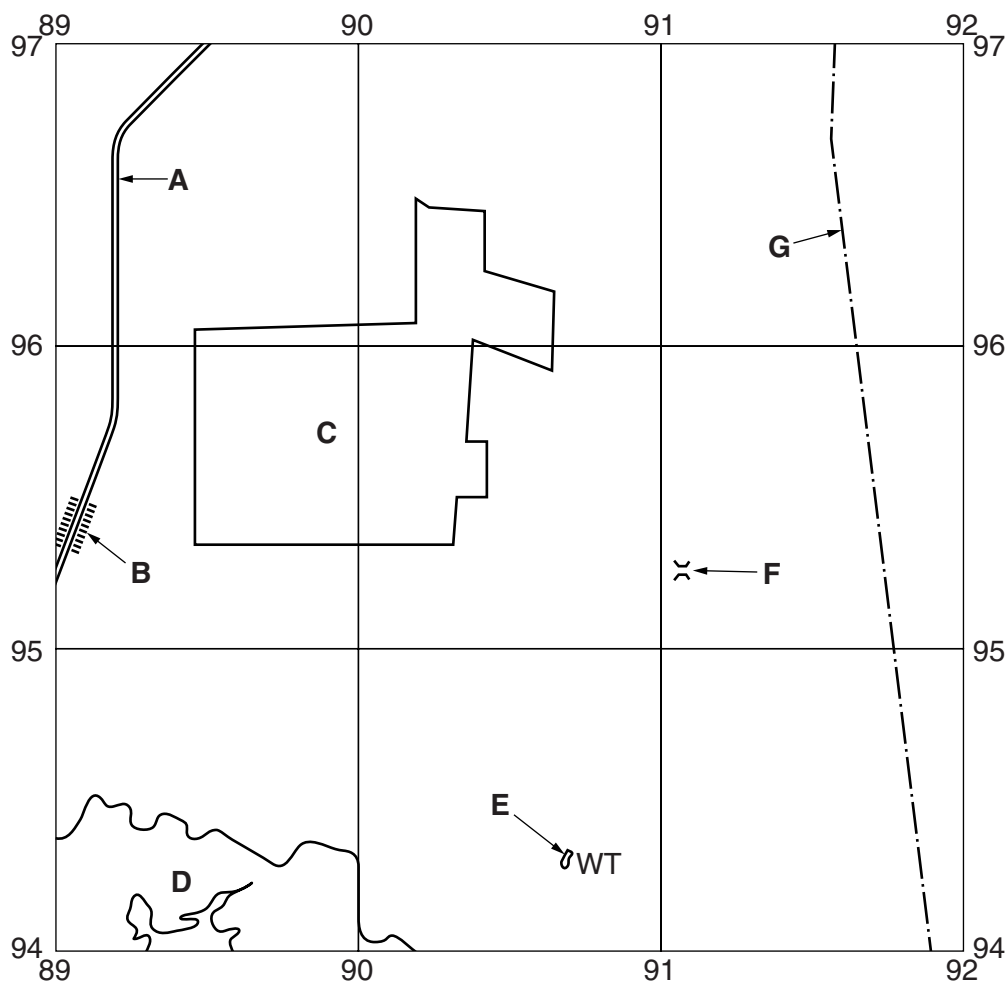


Fig. 1

Using the map extract, identify the following features shown on Fig. 1:

- (i) the type of road at **A**;
 [1]
- (ii) feature **B**;
 [1]
- (iii) the land use at **C**;
 [1]
- (iv) the type of land at **D**;
 [1]
- (v) feature **E**;
 [1]

(vi) feature **F**;

.....

(vii) the type of boundary at **G**.

.....[1]

(c) Fig. 2 shows the location of two grid squares in the west part of the map extract. These are grid square 8495 at Pte Moyenne and grid square 8694 at La Mecque.

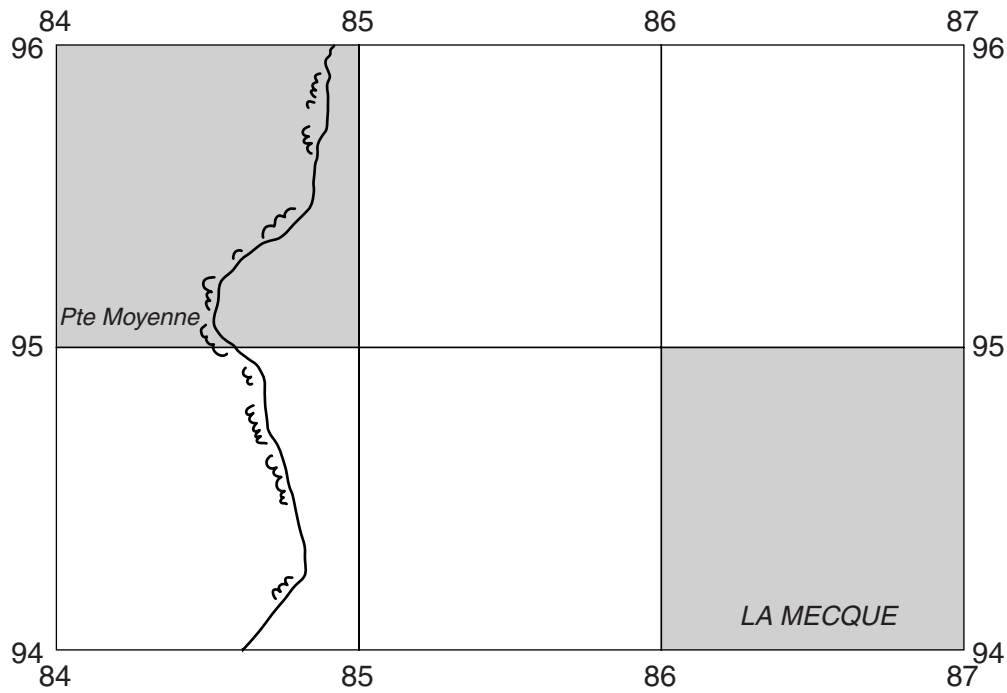


Fig. 2

The table below compares the features of the two grid squares. Complete the table by putting ticks in the correct **five** boxes. Use only **one** tick for each row.

	Pte Moyenne (8495)	La Mecque (8694)	Both these areas	Neither of these areas
Example: sugar plantation			✓	
coral				
a river or watercourse				
a populated area				
forest				
gentle slopes				

[5]

(d) Fig. 3 shows an area in the south east of the map extract.

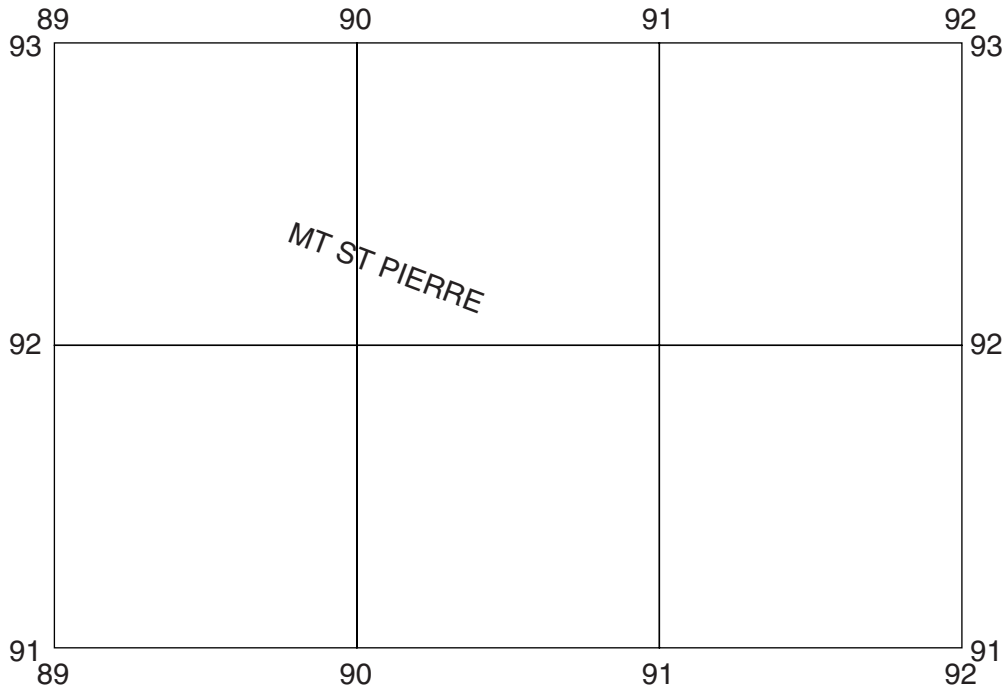


Fig. 3

Describe the relief of the area shown on Fig. 3.

.....

.....

.....

.....

.....

.....

..... [3]

(e) Look at the straight part of the Rivière Noire road from the southern edge of the map to the bend at 874935 at the settlement at Bambous.

(i) Measure the distance along the straight part of the road. Give your answer in metres.

.....metres [1]

(ii) What is the compass direction along the road from the southern edge of the map to Bambous?

..... [1]

- (f) A person walks from La Ferme Reservoir southwards to the highest point of the ridge between La Ferme Reservoir and St Pierre. The horizontal distance walked is 700m and the height increases by 30m. What is the average gradient of the walk?

Answer[1]

[Total: 20 marks]

2 Fig. 4 is a map showing the hierarchy of settlements in an area.

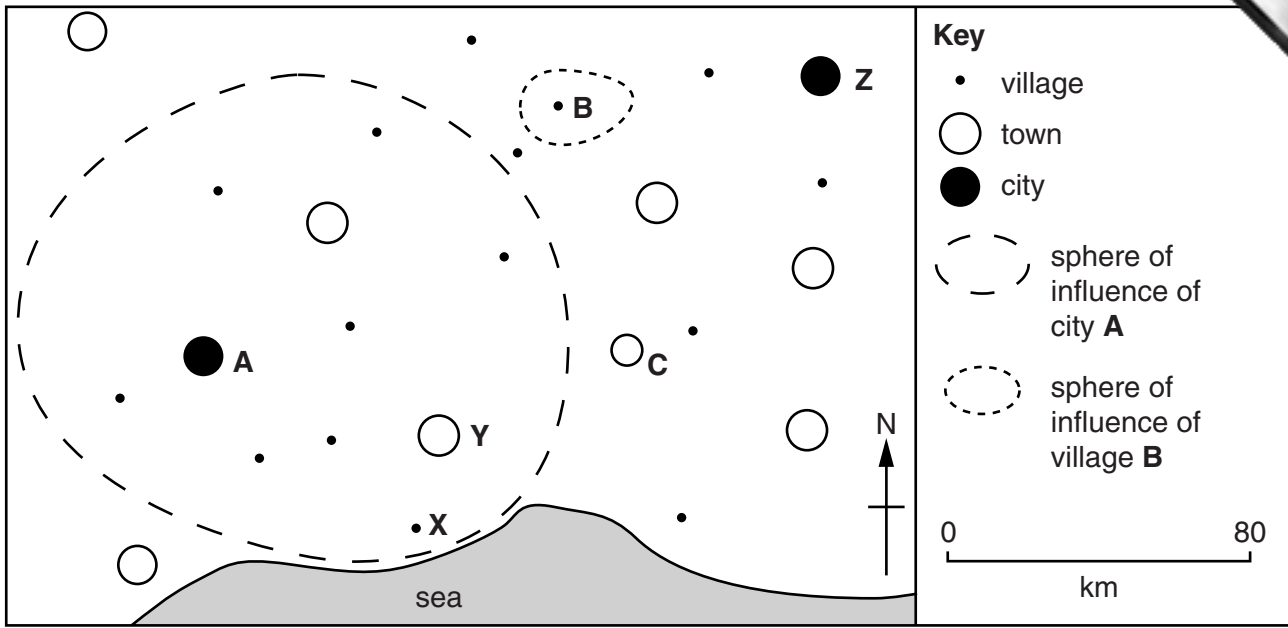


Fig. 4

Fig. 5 shows the number of low order and high order settlements in the area.

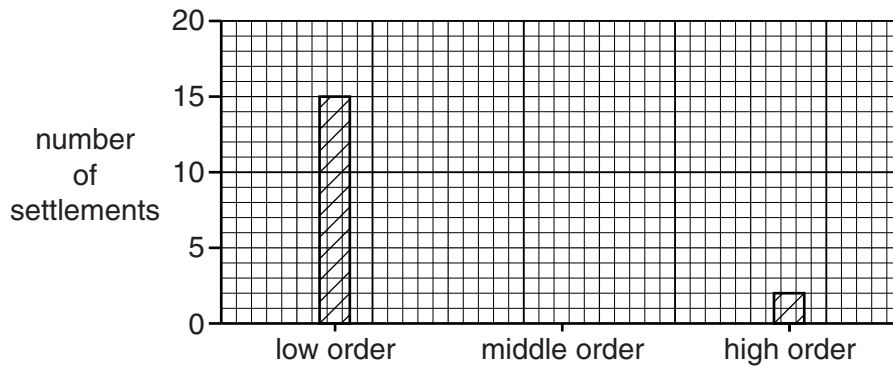
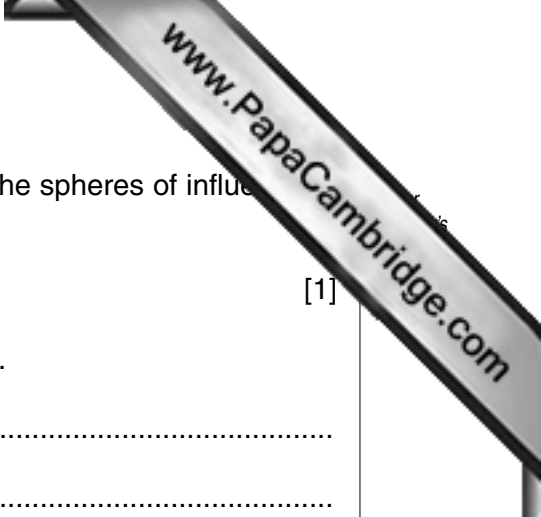


Fig. 5

- (a) (i) Using information from Fig. 4, complete Fig. 5 by adding the number of middle order settlements in the area. [1]
- (ii) Using Fig. 4, estimate the average distance apart of the low order settlements. Tick (✓) **one** correct answer below.

Average distance apart (km)	Tick (✓)
10	
40	
80	
100	

[1]



(b) The sphere of influence is the area served by a settlement. The spheres of influence of city **A** and village **B** are shown on Fig. 4.

(i) On Fig. 4, draw the likely sphere of influence of town **C**. [1]

(ii) Suggest why the sphere of influence of village **B** is small.

.....

 [1]

(c) Table 1 gives information about where the people who live in village **X**, shown on Fig. 4, go to get some of their services.

Table 1

Service	Settlement where people go for service	Distance travelled to the service	How often the service is used
grocery shop	village X	less than 1 km	almost every day
primary school	village X	less than 1 km	almost every day
bank	town Y	25 km	monthly
clothes shop	town Y	25 km	every 2–3 months
furniture store	city Z	160 km	once a year
airport	city Z	160 km	once a year

(i) Why do the people usually prefer to use the grocery shop and primary school in village **X** rather than in another settlement?

.....
 [1]

(ii) Why are there no banks and clothes shops in village **X**?

.....
 [1]

(iii) Give **one** example of a high order service listed in Table 1.

..... [1]

(iv) The people from village **X** prefer to use the furniture store in city **Z**, although the furniture stores in city **A** are closer. Suggest **one** possible reason for this.

.....
 [1]

[Total: 8 marks]

[Turn over

- 3 (a) Photograph A (Insert) shows an area affected by erosion and weathering. Describe the evidence seen in Photograph A for each of these processes.

Evidence for **erosion**

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Evidence for **weathering**

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.....

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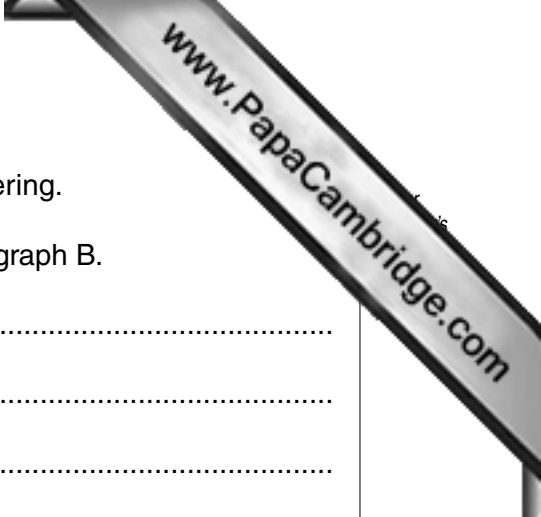
.....

.....

.....

.....

[4]



(b) Photograph B (Insert) shows another area affected by weathering.

(i) Describe the effects of weathering on the rocks in Photograph B.

.....
.....
.....
.....
.....
.....
..... [3]

(ii) Suggest **one** process of **physical** weathering which may have affected the rocks.

..... [1]

[Total: 8 marks]

4 Fig. 6 shows the location of the world's active volcanoes and plate boundaries. The location of 6 of the most dangerous volcanoes is also shown.

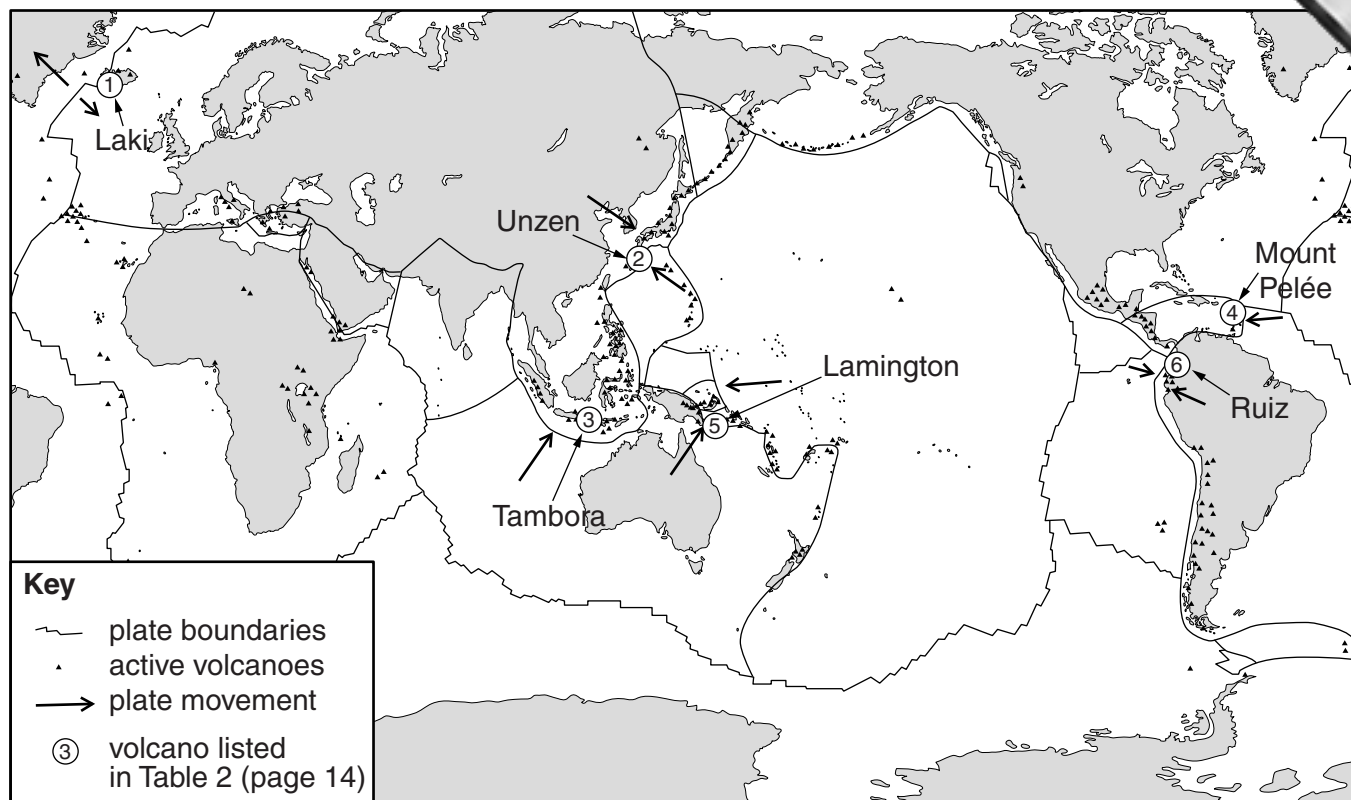


Fig. 6

(a) Tick (✓) **one** correct statement in **each** of (i), (ii) and (iii) below.

(i)

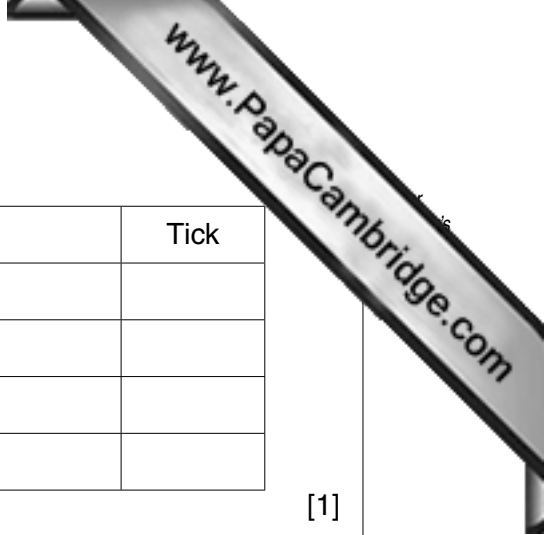
Statement	Tick
There are no active volcanoes in the continents	
There are no active volcanoes in Africa	
There are no active volcanoes in Asia	
There are active volcanoes in Africa, Asia, Europe, North America and South America	

[1]

(ii)

Statement	Tick
There are active volcanoes close to most coastlines	
There are active volcanoes close to most coastlines of the Pacific Ocean	
There are active volcanoes close to most coastlines of the Atlantic Ocean	
There are active volcanoes close to most coastlines of the Indian Ocean	

[1]



(iii)

Statement	Tick
All plate boundaries have active volcanoes	
All active volcanoes are close to plate boundaries	
Most active volcanoes are close to plate boundaries	
Most active volcanoes are away from plate boundaries	

[1]

(b) For **one** of the volcanoes **named** on Fig. 6, explain why it has formed at the location shown.

Name of volcano

Why it has formed at the location shown

.....

.....

.....

.....

.....

..... [2]

- (c) Table 2 gives information about six dangerous eruptions of the volcanoes named in Fig. 6.

Table 2

Number on Fig. 6	Volcano	Location	Year of eruption	Number of deaths	Hazard(s)
1	Laki	Iceland	1783	9350	ash cloud
2	Unzen	Japan	1792	14 300	volcano collapse tsunami
3	Tambora	Indonesia	1815	92 000	ash cloud
4	Mount Pelée	Martinique	1902	29 025	pyroclastic flows (nuée ardente)
5	Lamington	Papua New Guinea	1951	2942	pyroclastic flows (nuée ardente)
6	Ruiz	Colombia	1985	25 000	lahars (mudflows)

As a result of volcanic activity, 1783 and 1815 were very cold years. Use information from Table 2 to explain this.

.....

.....

.....

.....

.....

..... [3]

[Total: 8 marks]

15
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TURN OVER FOR QUESTION 5

5 Fig. 7 shows the location of India's biggest steel manufacturing works at Jamshedpur, the country's iron ore and coal mines.

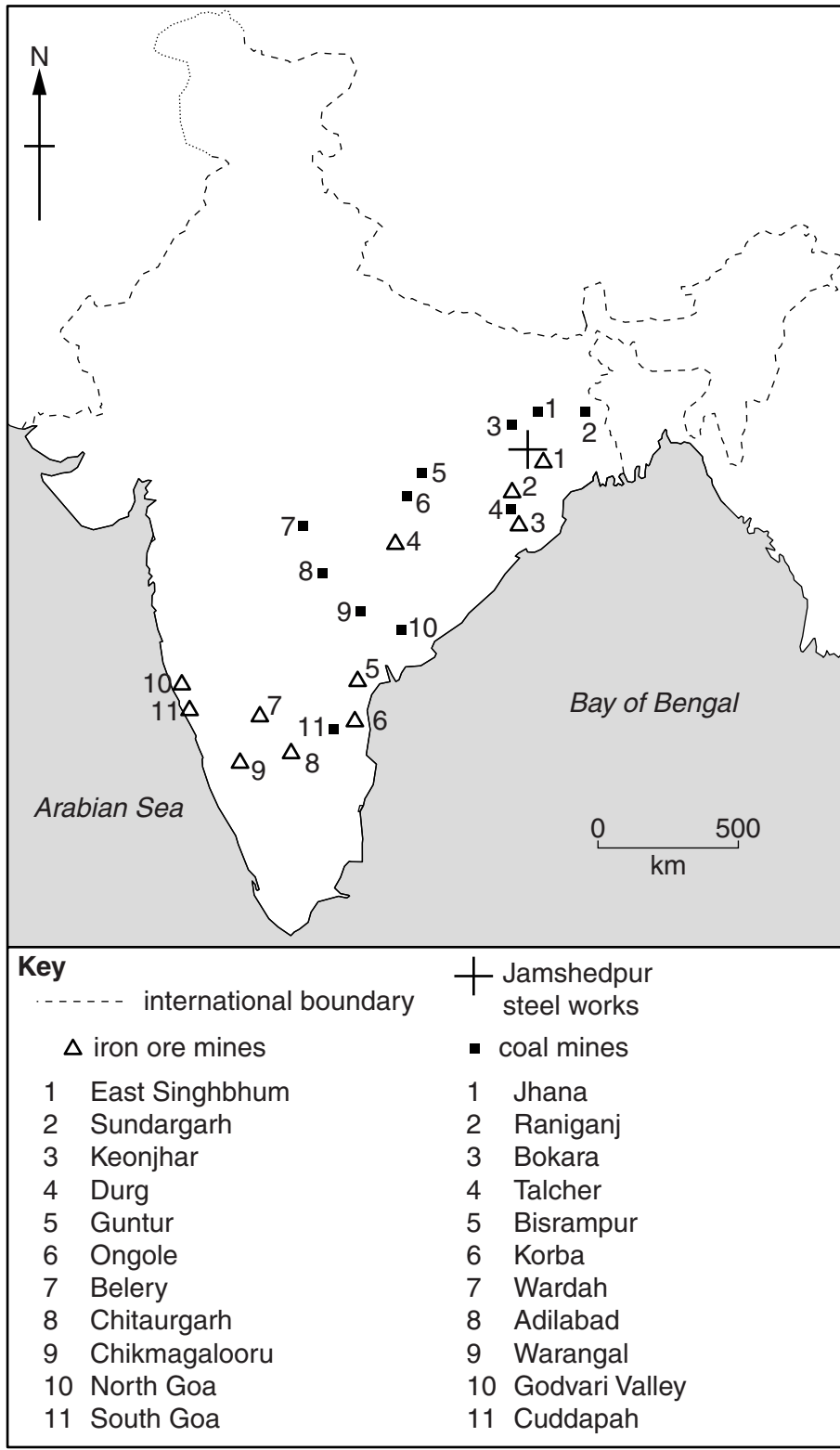


Fig. 7

(a) Using Fig. 7, describe the distribution of iron ore mines and coal mines in India.

Iron ore mines

.....

.....

.....

.....

Coal mines

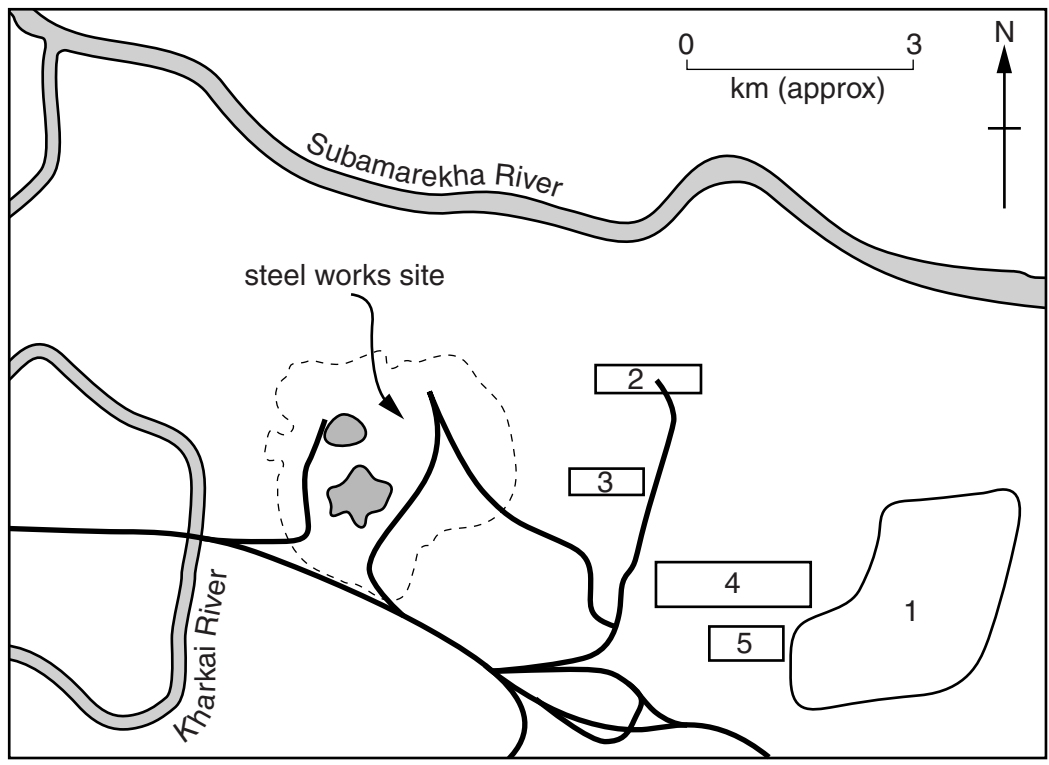
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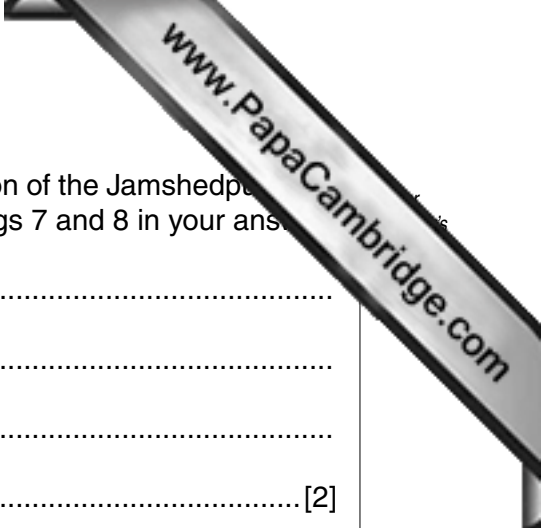
..... [3]

(b) Fig. 8 shows the site of the steel works in Jamshedpur.



- Key**
- railway
 - river
 - lake
 - boundary of steel works
- Other industries**
- 1 heavy vehicles and earth moving equipment
 - 2 coated metal sheets
 - 3 steel cables
 - 4 steel pipes
 - 5 wire products

Fig. 8



(b) Using Figs 7 and 8 **only**, explain the advantages of the position of the Jamshedpur steel works for each of the following factors. Give evidence from Figs 7 and 8 in your answers.

(i) Raw materials (iron ore and coal)
.....
.....
..... [2]

(ii) Cooling water
..... [1]

(iii) Transport
..... [1]

(iv) Markets
..... [1]

[Total: 8 marks]

6 It is estimated that there are 20 million km² of damaged soils in the world.

(a) Table 3 shows the main types of soil damage.

Table 3

Type of damage	Percentage of area
eroded by water	56%
eroded by wind	28%
other e.g. decline in fertility, increase in acidity	16%

Use the information in Table 3 to complete Fig. 9 below. Use the key provided.

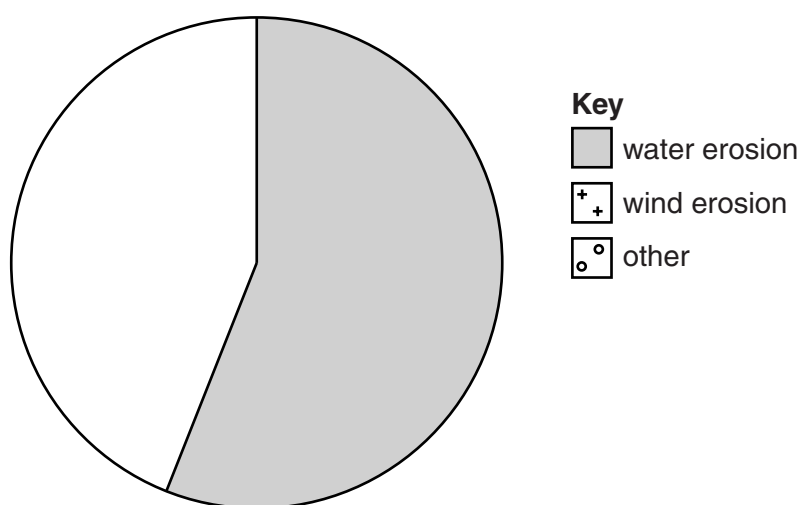


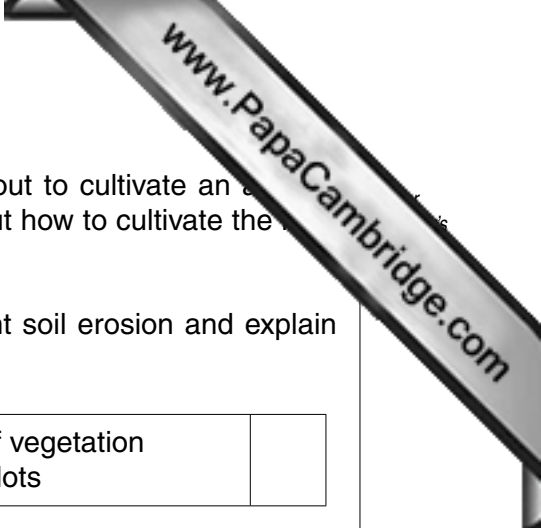
Fig. 9

[3]

(b) Which of the following factors is **not** a cause of soil erosion by water? Tick (✓) **one** box.

Factor	Tick
steep slopes	
heavy rainfall	
grazing many animals on a small area	
strong winds	
burning of vegetation	

[1]



- (c) A farmer in an area affected by soil erosion by water is about to cultivate an area of land with natural vegetation. The farmer needs to make decisions about how to cultivate the land in a way that prevents soil erosion.

For each of the following, tick the correct decision to prevent soil erosion and explain your choice.

(i)	Remove the natural vegetation completely	<input type="checkbox"/>	Leave strips of vegetation between the plots	<input type="checkbox"/>
	Explanation			

..... [1]

(ii)	Plough horizontally across the slope of the hillside	<input type="checkbox"/>	Plough up and down the hillside	<input type="checkbox"/>
	Explanation			

..... [1]

(iii)	Concentrate on growing the crop that produces the highest yield per hectare	<input type="checkbox"/>	Grow a different crop on each plot for the first three years	<input type="checkbox"/>
	Explanation			

..... [1]

(iv)	Allow cattle to graze on the remains of the crop after harvest	<input type="checkbox"/>	Fence the land and keep animals away	<input type="checkbox"/>
	Explanation			

..... [1]

[Total: 8 marks]

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