

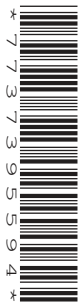
CANDIDATE
NAME

CENTRE
NUMBER

--	--	--	--	--

CANDIDATE
NUMBER

--	--	--	--



ENVIRONMENTAL MANAGEMENT

8291/12

Paper 1 Lithosphere and Atmosphere

May/June 2016

1 hour 30 minutes

Additional Materials: Answer Booklet/Paper

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 an HB pencil for any diagrams or graphs.
Do not use staples, paper clips, glue or correction fluid.
DO NOT WRITE IN ANY BARCODES.

Electronic calculators may be used.
You may lose marks if you do not show your working or if you do not use appropriate units.

Section A

Answer **all** questions in this section.
Write your answers in the spaces provided on the question paper.

Section B

Answer **one** question from this section.
Answer the question on the separate answer paper provided.

At the end of the examination,

1. fasten all separate answer paper securely to the question paper;
2. enter the question number from Section B in the grid opposite.

	For Examiner's Use
Section A	/
1	
2	
Section B	/
Total	

This document consists of **12** printed pages.

Section A

Answer **all** questions in this section.

Write your answers in the spaces provided.

- 1 (a)** Fig. 1.1 shows solar radiation striking the Earth's surface at two different latitudes.

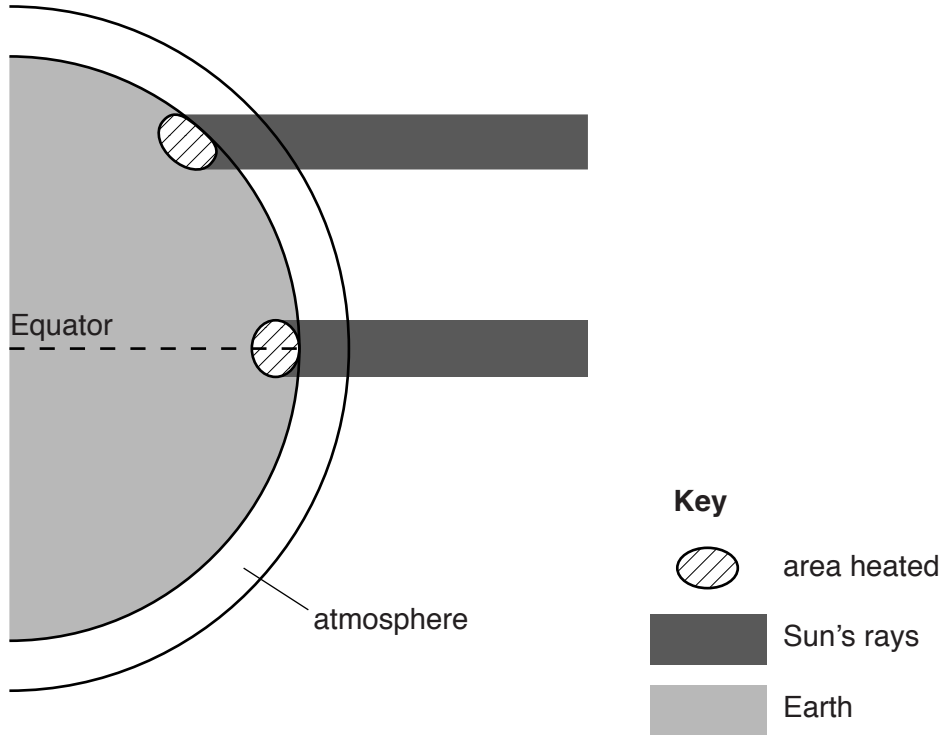


Fig. 1.1

- (i)** Place an **X** on Fig. 1.1 at the point on the Earth's surface where you would expect the heating effect of the Sun's rays to be most intense. [1]
- (ii)** Give **two** reasons for your answer to **(a)(i)**.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....[4]

(b) Fig. 1.2 shows seasonal variations in solar radiation received on the Earth's surface at two different times of the year.

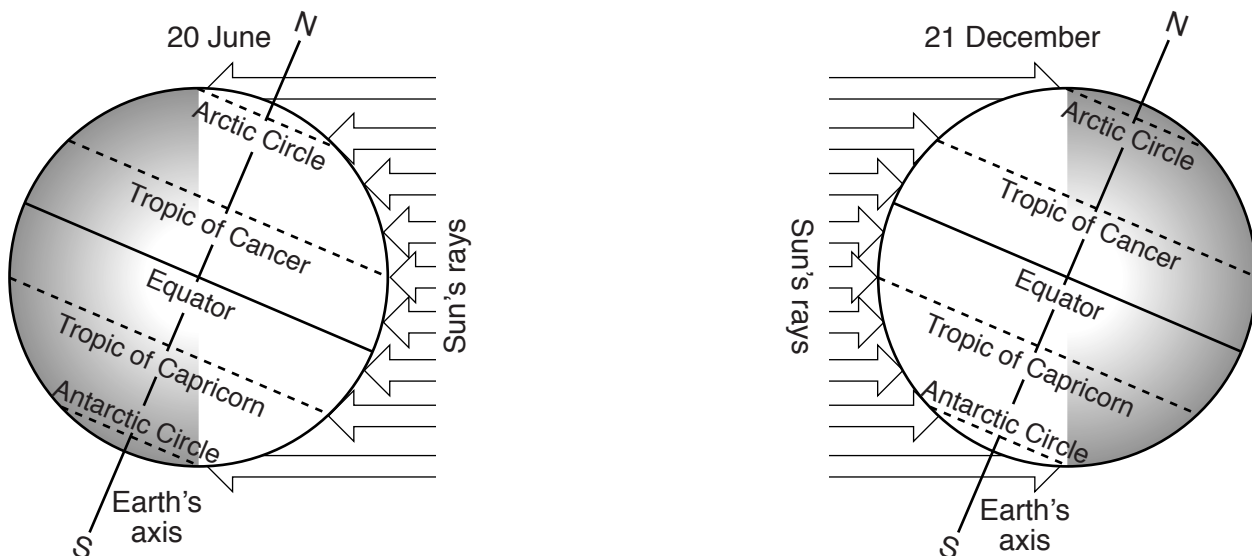


Fig. 1.2

(i) With reference to Fig. 1.2, explain why the Earth's surface experiences seasonal variations in solar radiation.

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

(ii) Suggest reasons why surface temperatures are very low within the Arctic Circle in December. Include information from Fig. 1.2 in your answer.

.....
.....
.....
.....
.....
.....
.....
.....[4]

2 (a) Fig. 2.1 shows the effect of mass movement on a coast.



Fig. 2.1

(i) Describe the slope profile shown in Fig. 2.1.

.....
.....
.....
.....[2]

(ii) Name and describe **one** mass movement process that might be responsible for the accumulation of debris on the slope in Fig. 2.1.

process name

description

.....
.....
.....
.....[4]

(b) Fig. 2.2 shows a 1000-year-old sandstone monument at Leshan in Sichuan Province, China which is threatened by weathering.

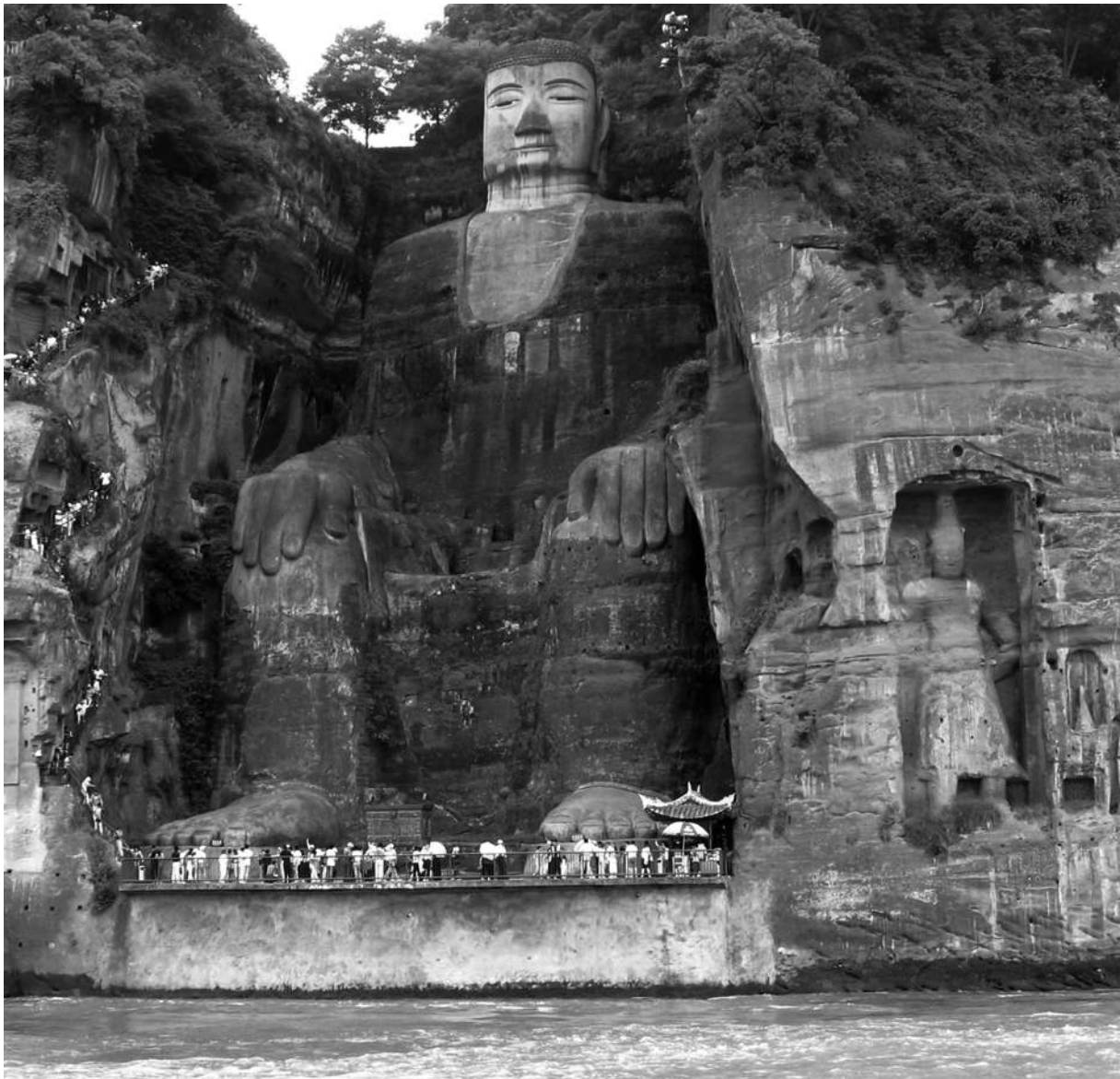


Fig. 2.2

(i) Referring to Fig. 2.2, state **two** pieces of evidence to suggest that this monument is being weathered.

.....

.....

.....

.....[2]

(ii) Describe and explain **one** type of mechanical weathering which may be occurring on the rock surface in Fig. 2.2.

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

(iii) With reference to Fig. 2.2 describe the ways that human activity may be accelerating the natural rate of weathering.

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

(c) Fig. 2.3 shows the distribution of acid rain in mainland China in 2010 and the location of the monument shown in Fig. 2.2.

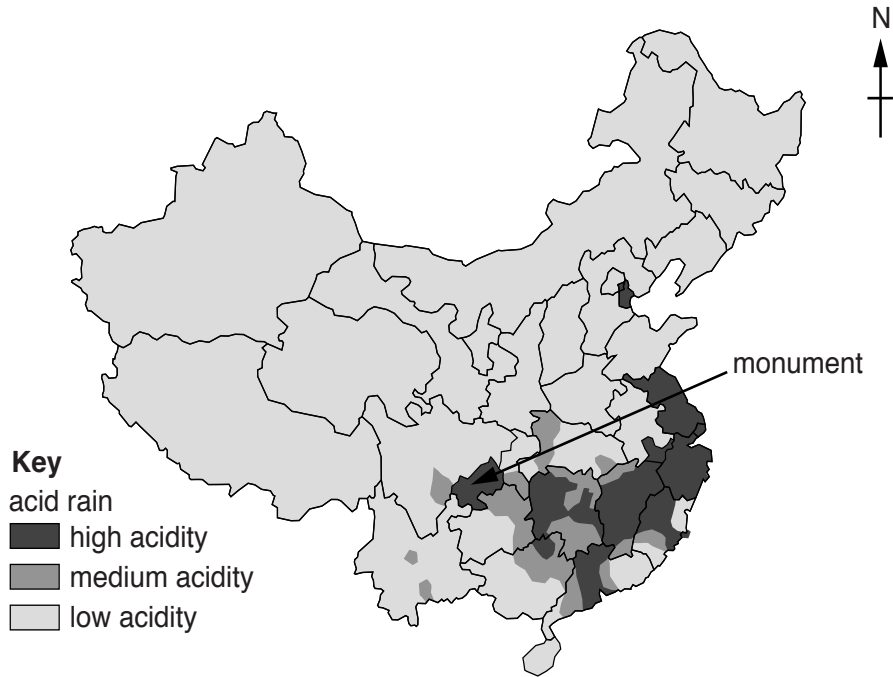


Fig. 2.3

(i) Suggest a link between the distribution of acid rain shown in Fig. 2.3 and damage to the monument at Leshan.

.....
.....
.....
.....[2]

(ii) Suggest strategies to reduce the damage to monuments from acid rain.

.....
.....
.....
.....
.....
.....
.....
.....[4]

[Total: 20]
[Turn over

Section B

Answer **one** question from this section.

3 Fig. 3.1 shows information about electricity generation in some countries of East Africa.

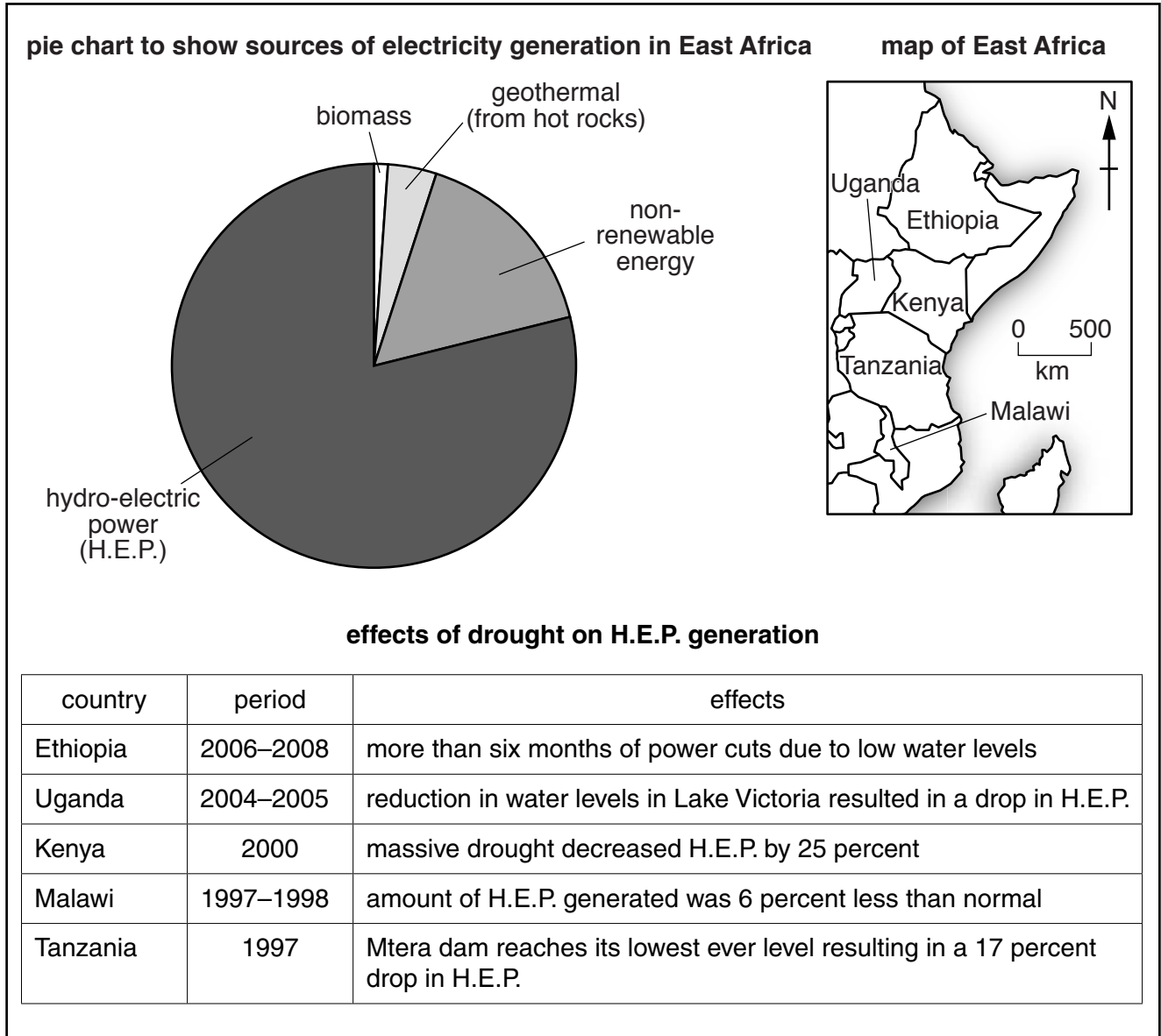


Fig. 3.1

- (a) Using the information in Fig. 3.1, describe the current sources of electricity generation in East Africa. Examine the argument for reducing dependence on hydro-electric power (H.E.P.). [10]
- (b) Using examples, evaluate how energy resources can be managed sustainably for future generations. [30]

[Total: 40]

- 4 Fig. 4.1 is a map showing the pattern of daytime aircraft noise around London Heathrow Airport in the United Kingdom. The region shown includes major urban areas, including Greater London.

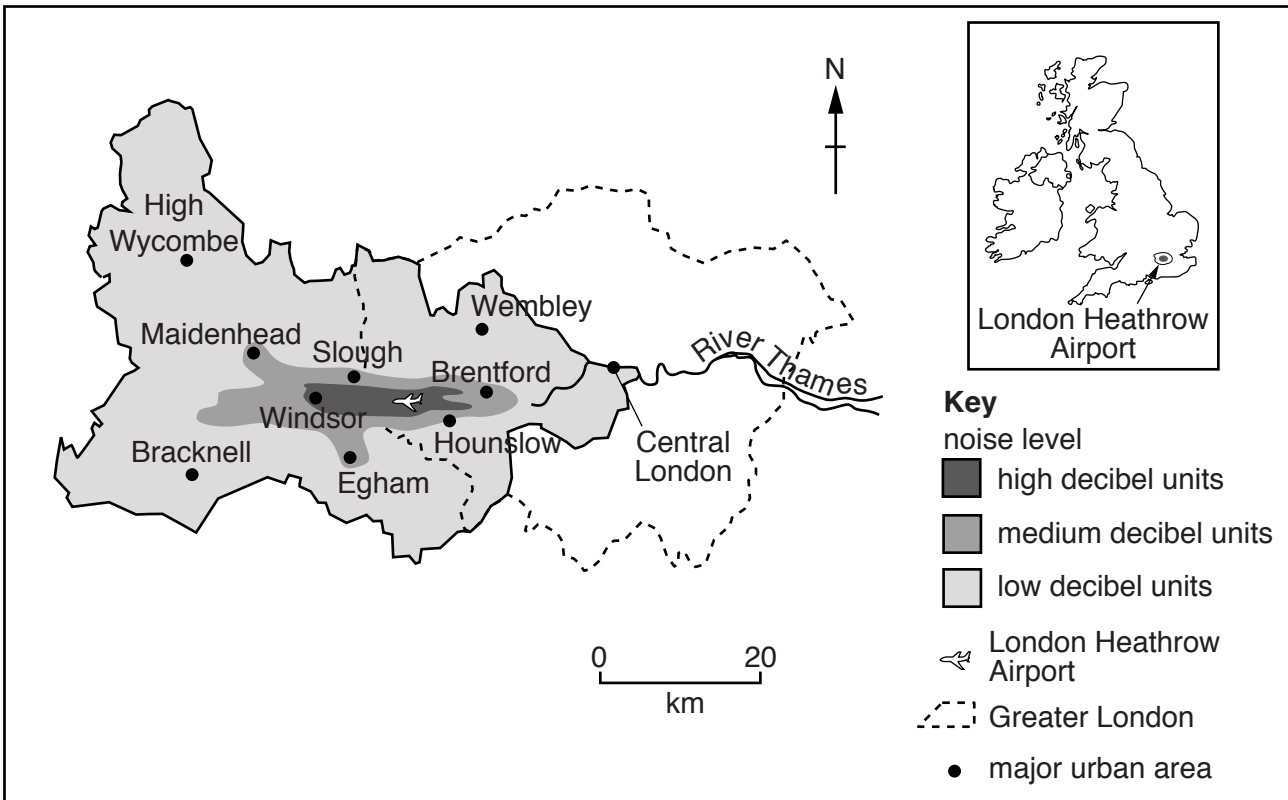


Fig. 4.1

- (a) Describe the pattern of noise pollution around the airport shown in Fig. 4.1 and suggest the likely effects of aircraft noise on the surrounding area. [10]
- (b) Using examples, assess the success of strategies for managing the reduction of noise in urban areas. [30]

[Total: 40]

- 5 Fig. 5.1 shows information about Europe's largest granite 'super quarry' at Glensanda. It is situated in an area of outstanding natural beauty in Scotland in the United Kingdom.

At the quarry, crushed rock is dropped down a 300 m vertical shaft to another crushing machine. It is moved on a 1.8 km long conveyor belt to a rock stockpile. The quarry produces over six million tonnes of crushed rock that is shipped all over the world for use in the construction industry.

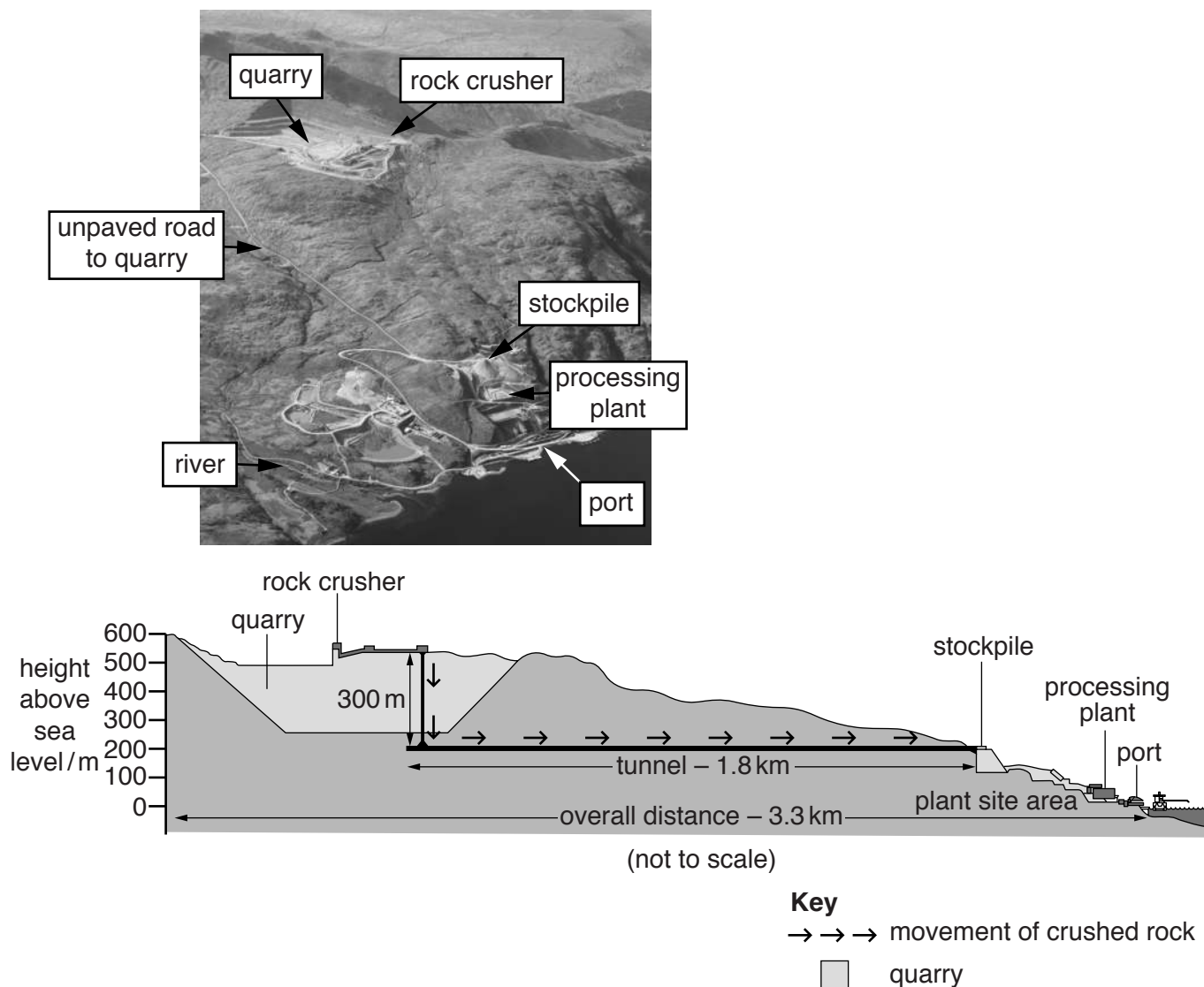


Fig. 5.1

- (a) With reference to Fig. 5.1, explain the problems associated with exploiting non-renewable resources. [10]
- (b) Using examples, evaluate strategies for conserving and protecting areas of outstanding natural beauty. [30]

[Total: 40]

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (UCLES) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.

To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced online in the Cambridge International Examinations Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download at www.cie.org.uk after the live examination series.

Cambridge International Examinations is part of the Cambridge Assessment Group. Cambridge Assessment is the brand name of University of Cambridge Local Examinations Syndicate (UCLES), which is itself a department of the University of Cambridge.