

FOR OFFICIAL USE

--	--	--	--	--	--

Total

--

X043/101

NATIONAL
QUALIFICATIONS
2008

MONDAY, 19 MAY
1.00 PM – 2.30 PM

GEOLOGY
INTERMEDIATE 1

Fill in these boxes and read what is printed below.

Full name of centre

--

Town

--

Forename(s)

--

Surname

--

Date of birth

Day Month Year

--	--	--	--	--	--	--

Scottish candidate number

--	--	--	--	--	--	--	--

Number of seat

--

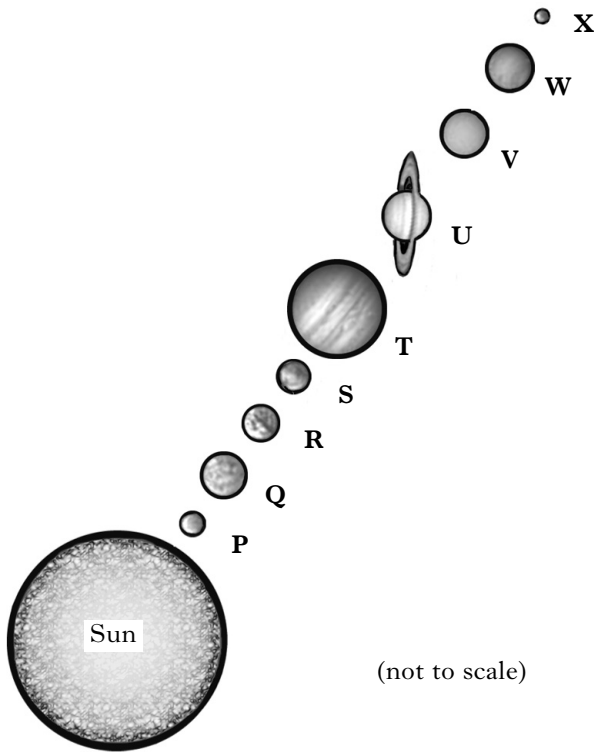
- 1 You should attempt **all** of the questions.
- 2 All answers should be written in the spaces provided in this answer book and should be written clearly and legibly in ink.
- 3 The marks allocated to each question or part of a question are shown at the end of each question or part of a question.
- 4 Before leaving the examination room you must give this book to the invigilator. If you do not, you may lose all the marks for this paper.



All questions should be attempted.

Marks

1. Look at the diagram below showing the planets of our solar system.



(a) Which planet travels the shortest distance round the sun?

Give only the letter:

1

(b) Name the planet which travels the longest distance round the sun.

.....

1

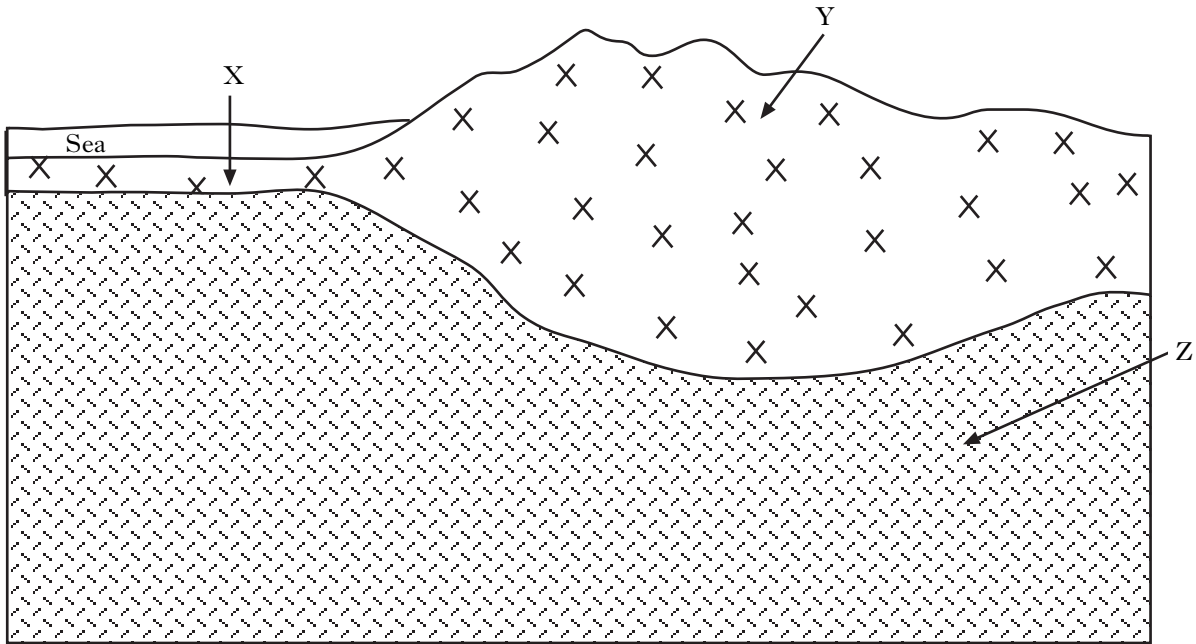
(c) Name planet R.

.....

1

Marks

2. Look at the diagram below showing the outer layers of the Earth.



(a) Use the word box to name layers X, Y and Z.

Mantle; Core; Oceanic crust; Continental crust

X _____

Y _____

Z _____

3

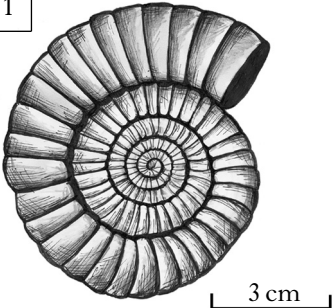
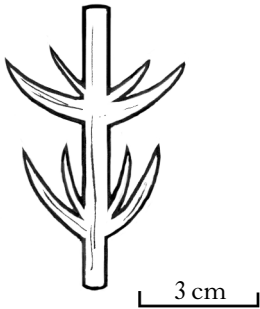
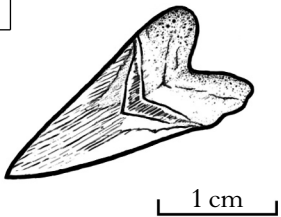
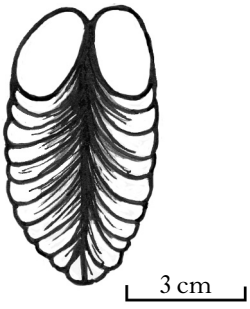
(b) Give **one** way in which rocks from below the crust can be brought to the surface.

1

[Turn over

Marks

3. (a) Complete the table below by naming the fossil and saying where the organism lived.

<i>Fossil</i>	<i>Name of Fossil</i>	<i>Did the organism live on the land or in the sea?</i>
1 		
2 		
3 		
4 		

4

(b) Explain why the part of fossil 3, shown in the table, has survived while the other parts of the same fossil have not.

.....

.....

.....

2

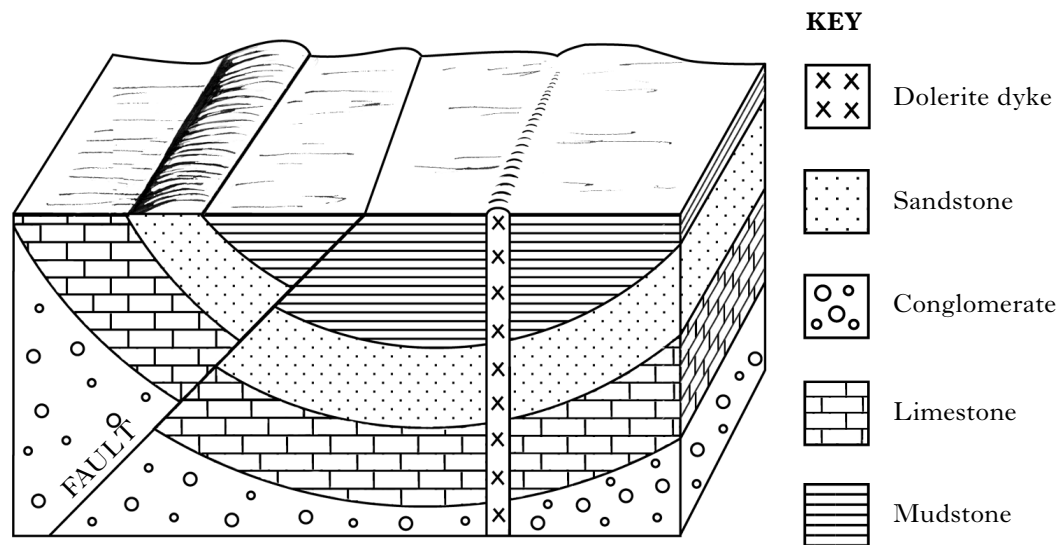
(c) Give **one** use of fossils.

.....

1

Marks

4. Look at the diagram below.



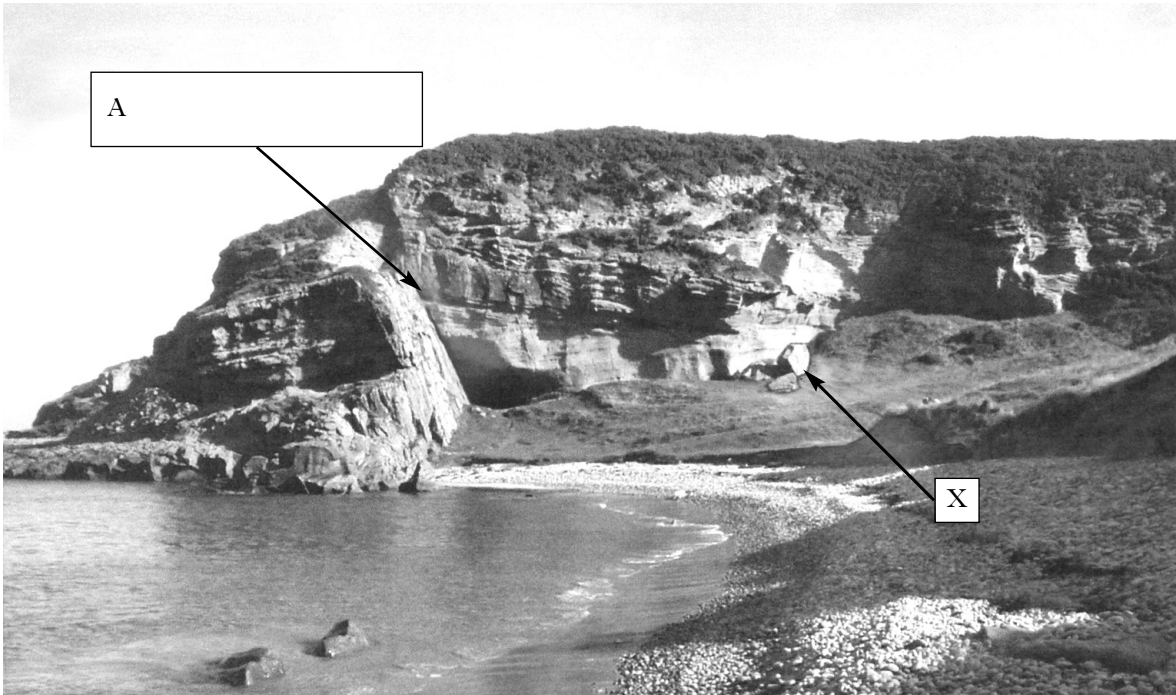
- KEY**
-  Dolerite dyke
 -  Sandstone
 -  Conglomerate
 -  Limestone
 -  Mudstone

- (a) What type of fold is shown in the diagram?
..... 1
- (b) Name the oldest rock.
..... 1
- (c) Was the fault produced by pushing, pulling or sliding forces?
..... 1
- (d) Why is it impossible to tell if the dyke or fault happened first?
..... 1

[Turn over

Marks

5. Look at the photograph below..



- (a) Label feature A on the photograph.
- (b) Draw a labelled diagram to explain why the two large blocks are found at point X on the photograph.

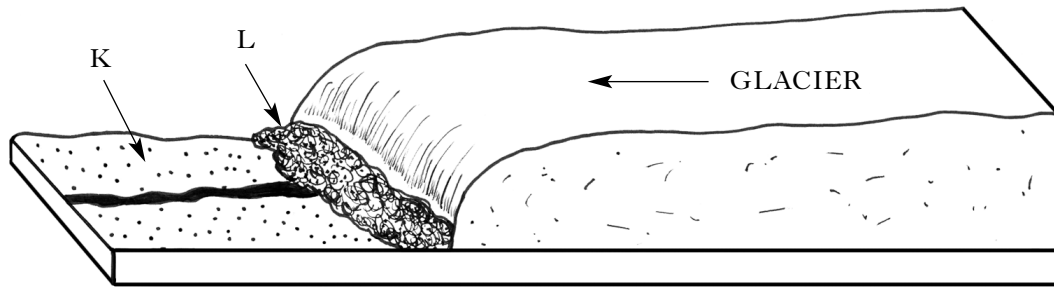
1

4

[Turn over for Question 6 on *Page eight*

Marks

6. Look at the diagram below.

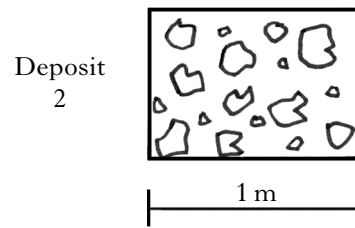
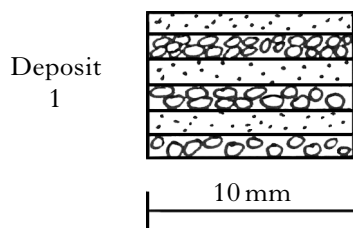


(a) Name features K and L.

K L

2

The diagrams below show deposits 1 and 2 taken from feature K and from feature L on the diagram.



(b) Which deposit was taken from feature L on the diagram?

.....

1

(c) Explain your choice.

.....

.....

.....

2

(d) Describe **two** characteristics of deposit 1.

.....

.....

2

6. (continued)

Marks

(e) Explain how each of these deposits has been formed.

Deposit 1

.....

Deposit 2

.....

2

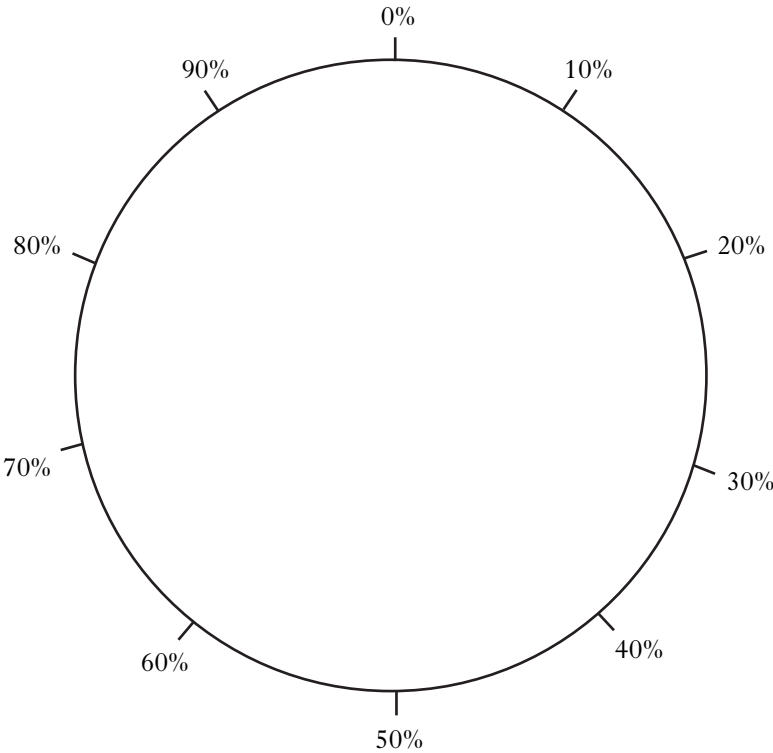
[Turn over

Marks

7. Look at the table below showing the daily use of water on a world scale.

<i>Use</i>	<i>Volume used (litres)</i>	<i>% of total volume for each use</i>
Farmers	440 000	
Industry	165 000	
Homes	55 000	
Total volume of water		100%

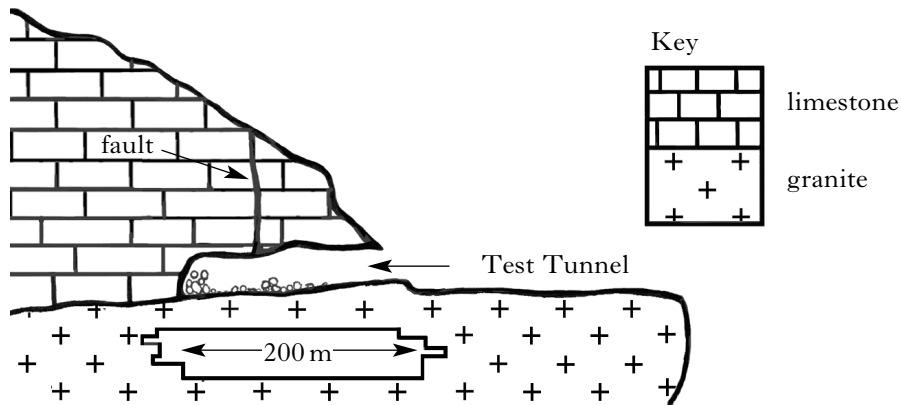
- (a) Complete the empty boxes in the table by calculating the total volume used and the percentage of total volume for each use.
- (b) Use the table to complete the pie chart below. Shade and label the pie chart to show the percentages you have calculated.



- (c) Give **one** use of water on farms in Britain.
- (d) Explain why British farmers' use of water may change in the future.

Marks

8. Look at the diagram below.



- (a) A test tunnel for a new road link was drilled in the hillside. Drilling was stopped after 200 metres. Give **two** reasons why the tunnelling company had to abandon this site.

Reason 1

.....

Reason 2

.....

2

- (b) Give **two** ways in which these problems could be solved.

1

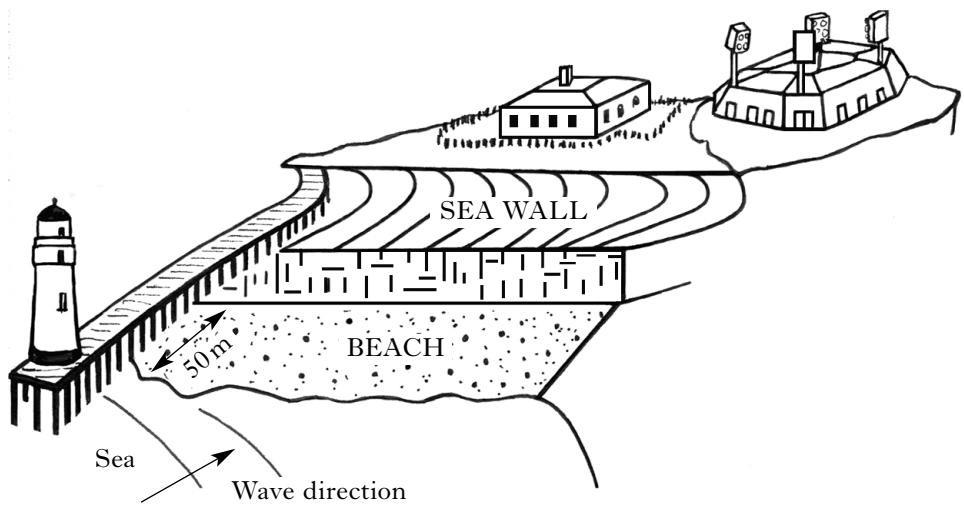
2

2

[Turn over

Marks

9. Look at the diagram below showing a beach in 2005.



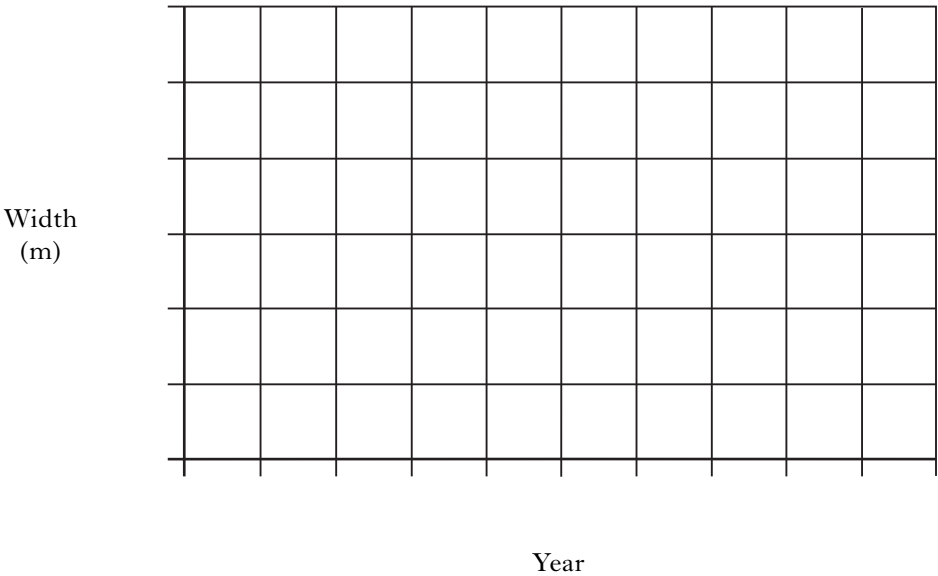
The sand beach shown above was 100 metres wide in 1980. The table below shows the width of the beach over the last 45 years.

<i>Year</i>	<i>Width of beach in metres</i>
1960	200
1965	190
1970	150
1975	125
1980	100
1985	90
1990	75
1995	60
2000	55
2005	50

Marks

9. (continued)

- (a) On the graph paper below, draw a line graph to show how the width of the beach has changed from 1980 to 2005.



2

- (b) Name the process which caused the loss of sand.

.....

1

[Turn over

Marks

9. (continued)

- (c) The local council is worried that the sea wall may collapse if the sand is not replaced. 4 million tonnes of sand is to be transported by ship and sprayed on to the beach.

Information Box showing load and fuel costs of transport.

Maximum load of ship = 200 000 tonnes
Fuel cost per ship = £8000

Using the information given above, calculate how many ship loads are required to complete the replacement of the sand.

(Show your working here.)

2

Marks

9. (continued)

(d) Using the Information Box shown on *Page fourteen*, calculate the total cost of replacing the beach sand.

(*Show your working here.*)

2

[Turn over

Marks

9. (continued)

- (e) (i) Fuel costs will rise by 50% in the future. Calculate the new cost per ship.
(Show your working here.)

2

- (ii) Calculate the new future cost of replacing the beach sand.

New future cost

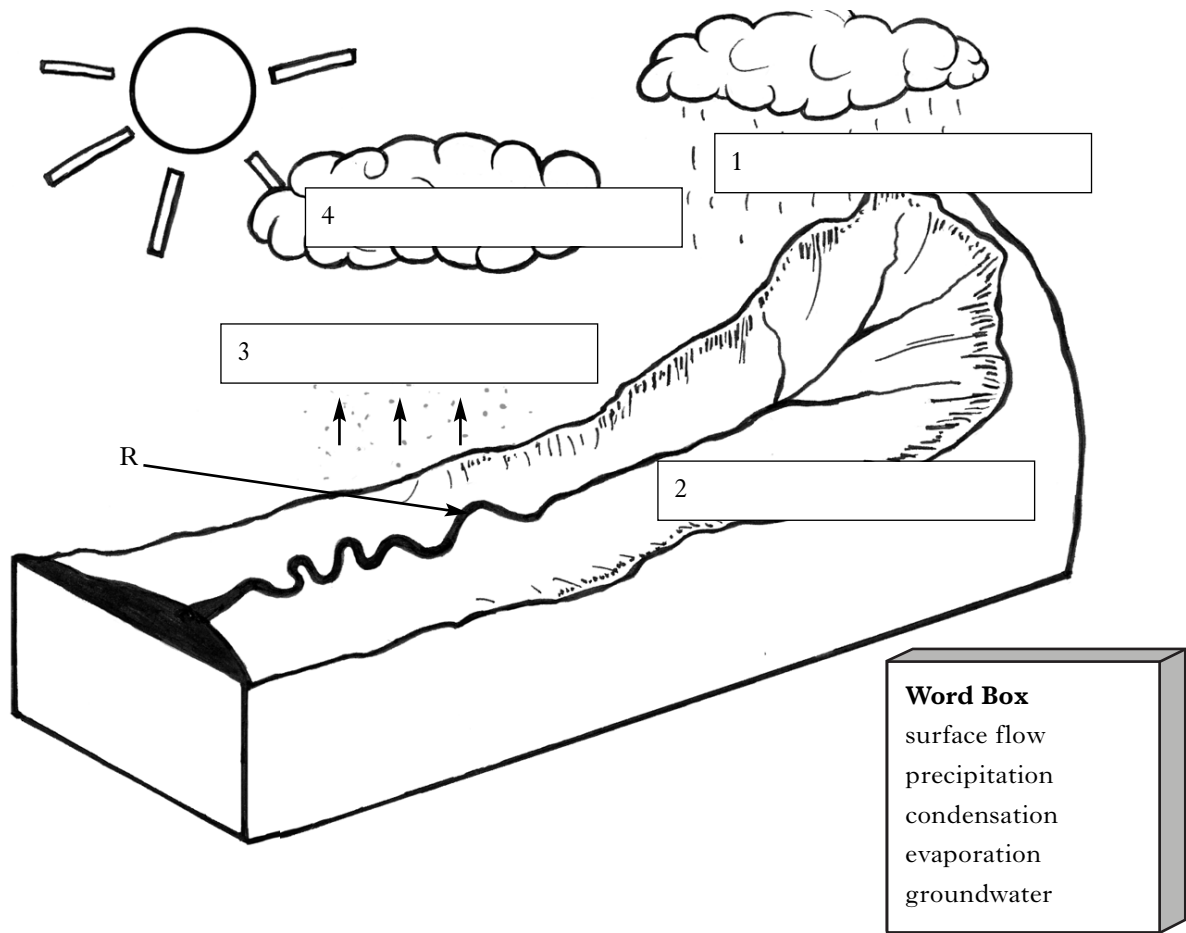
2

- (iii) Calculate the difference in cost from the original cost.

1

Marks

10. Look at the diagram below.



(a) Complete the boxes on the diagram using the Word Box.

4

(b) Name the river feature at R.

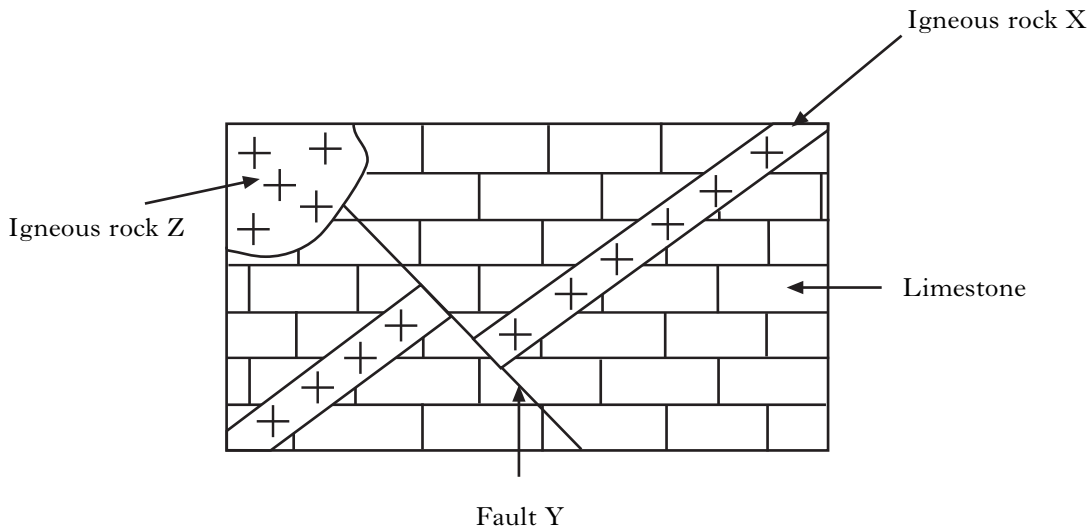
.....

1

[Turn over

Marks

11. Look at the geology map below.



(a) Put the following in the correct order from oldest to youngest.

- A Intrusion of igneous rock Z
- B Deposition of limestone
- C Fault Y
- D Intrusion of igneous rock X

Give only the letters: → → →
oldest youngest

4

(b) What may happen to the limestone which is next to the intrusion of igneous rock Z?

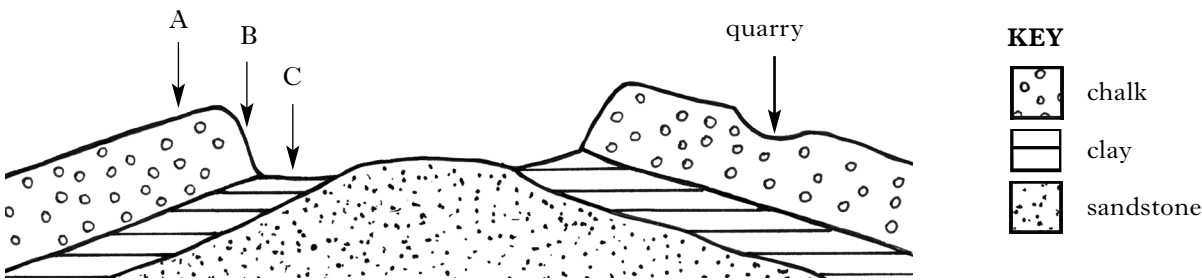
.....

.....

1

Marks

12. Look at the diagram below.



(a) Complete the box below using the correct letter from the diagram.

Scarp slope	
Dip slope	
Vale	

3

(b) Chalk is extracted from the quarry shown in the diagram. Give **three** ways in which the quarrying may affect the environment.

- 1
- 2
- 3

3

[Turn over for Question 13 on Page twenty

Marks

13. Look at the table and the Word Box below.

Type of Coal	% Carbon Content
Peat	
	73%
Bituminous coal	
	94%

58%; Malachite; Lignite; 12%; 84%; Anthracite

(a) Complete the table using the information from the Word Box.

4

(b) Give **two** ways coal is used in industry.

1

2

2

(c) Give **one** reason why coal extraction has decreased in recent years in Scotland.

.....

1

[END OF QUESTION PAPER]