

FOR OFFICIAL USE

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Total

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X043/101

NATIONAL
QUALIFICATIONS
2010

THURSDAY, 20 MAY
1.00 PM – 2.30 PM

GEOLOGY
INTERMEDIATE 1

Fill in these boxes and read what is printed below.

Full name of centre

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Town

--

Forename(s)

--

Surname

--

Date of birth

Day Month Year

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Scottish candidate number

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Number of seat

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- 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.



Marks

All questions should be attempted.

1. Which **three** of the statements below are correct?

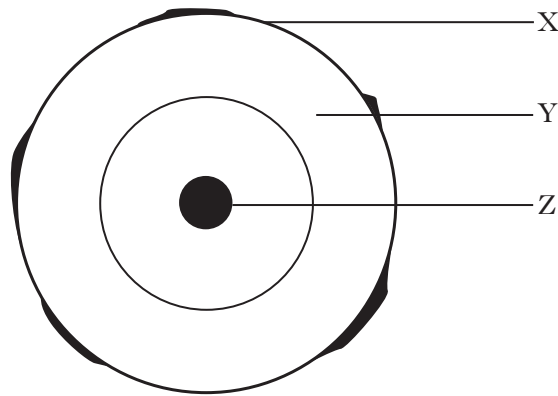
- A The Earth is a star.
- B The Earth receives heat and light from the sun.
- C The Earth is a planet.
- D Planets burn brightly.
- E The Sun is bigger than each of the planets.

Give only the letters:, and

2

Marks

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



- (a) Use the word box to describe the layers.

Word Box

Liquid metal
Igneous, sedimentary and metamorphic rocks
Solid metal
Molten rock

X
Y
Z

3

A bore hole can be used to find out what the crust is made of.

- (b) Explain **one** way by which we know what is beneath the crust.

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.....
.....
.....

2

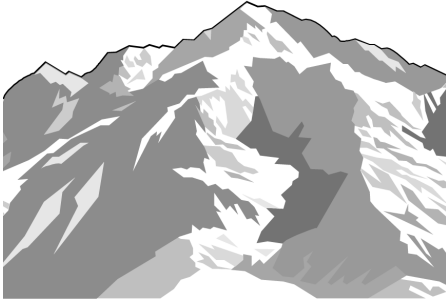
[Turn over

Marks

3. The diagrams show stages in the history of the Earth.

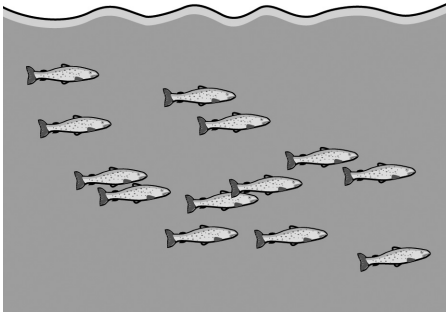
A Oldest rocks in Scotland formed

B Flowering plants appear



C Fish appear in the seas

D Dinosaurs roamed the land



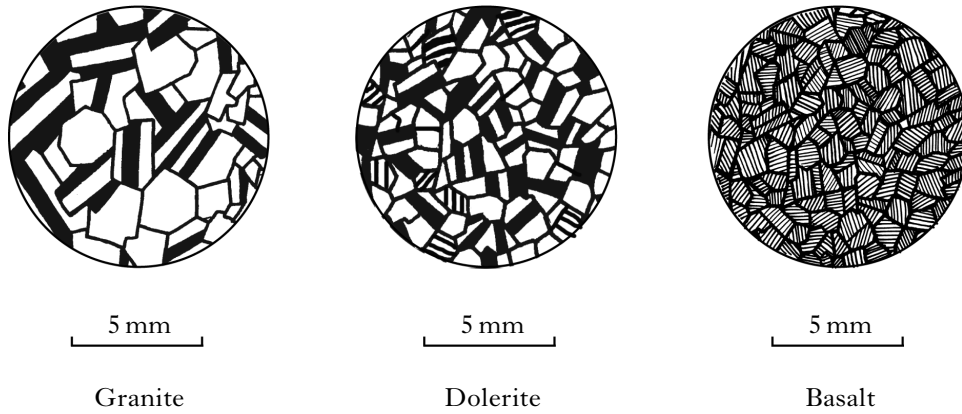
Place the stages in the history of the Earth in order from oldest to youngest.

Give only the letters: → → →
oldest youngest

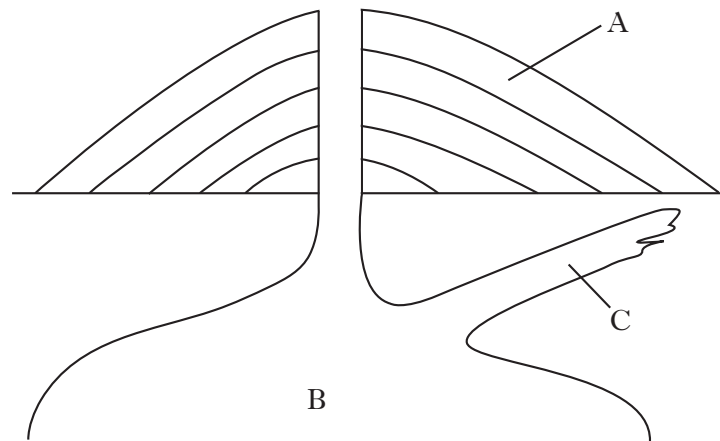
2

Marks

4. The diagram below shows views of three igneous rocks seen under a microscope.



The diagram below shows where these rocks were formed.



- (a) Complete the table below.

	Name of rock
A	
B	
C	

2

- (b) Explain your choices.

.....

.....

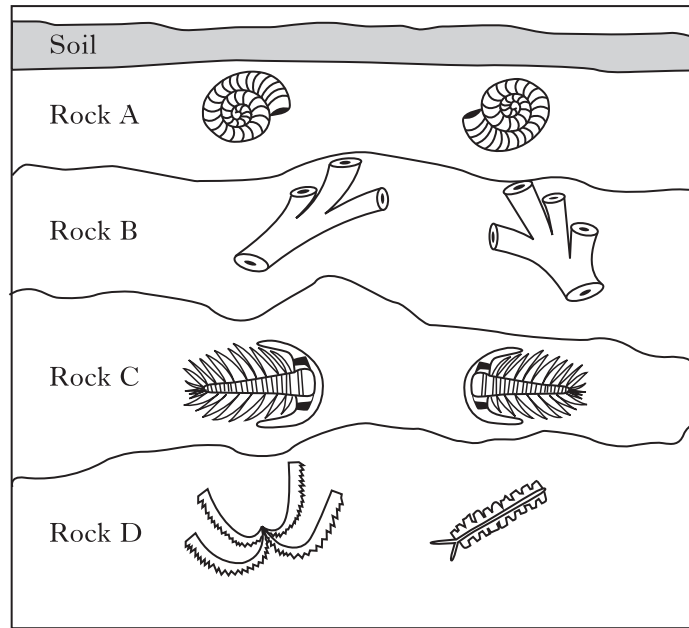
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2

Marks

5. Look at the diagram below showing layers of rocks containing fossils.



(not to scale)

- (a) Name the fossils found in rocks A, B, C and D.

Rock A

Rock B

Rock C

Rock D

4

- (b) What do fossils tell us about the rocks they are found in?

.....

.....

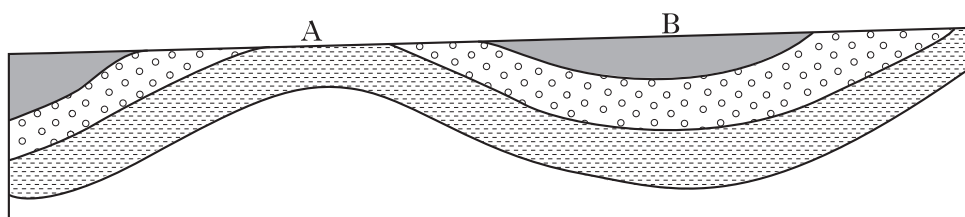
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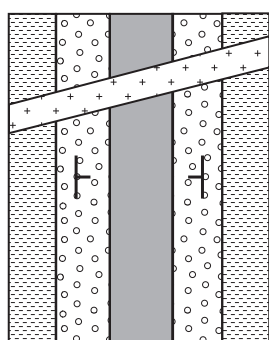
Marks

6. Look at the cross-section below.

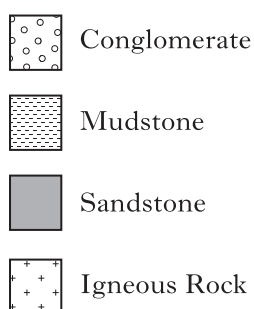


(not to scale)

The diagram below shows a geological map from the same area.



Key



- (a) Does the map show area A or B?

.....

1

- (b) Explain your answer.

.....

.....

2

- (c) Using both diagrams, place the events in the correct order.

- A Intrusion of igneous rock
- B Folding of rock
- C Deposition of mudstone
- D Deposition of sandstone

Give only the letters: → → →
oldest youngest

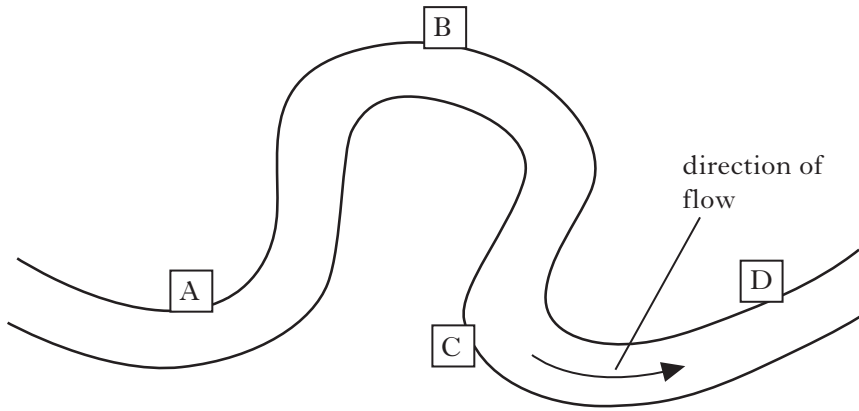
4

[Turn over

Marks

7. The “Gleaming Glen” Mining Company in the North of Scotland has found small amounts of gold in the sand and gravel deposits of a river.

(a) Look at the diagram below.



Which site would give the greatest chance of finding gold deposits?

Give only the letter

1

(b) Explain your answer.

.....

.....

.....

2

(c) Look at the information boxes below.

P

Ore minerals transported by the river

Q

Ore minerals deposited by the river

R

Ore minerals separated by weathering and erosion from their original deposits

S

Panning for minerals

Place the above events in the correct order.

Give only the letters: → → →
first last

4

Marks

7. (continued)

- (d) The company has been asked to make gold medals for the 2012 London Olympic Games. Fifteen grams of gold are needed to make one gold medal. One tonne of sand and gravel deposit gives 0.2 grams of gold.

Calculate how many tonnes of sand and gravel deposit will have to be panned to make one gold medal.

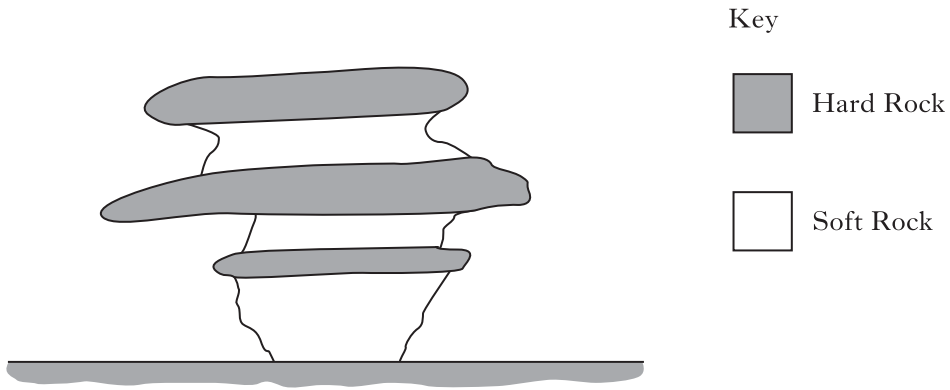
Show your working.

2

[Turn over

Marks

8. Look at the diagram below showing a desert feature.



- (a) Name the feature

1

- (b) Explain how this feature was formed.

.....

.....

.....

.....

2

- (c) Which type of material, from the word box below, would be carried furthest by the wind?

Word Box

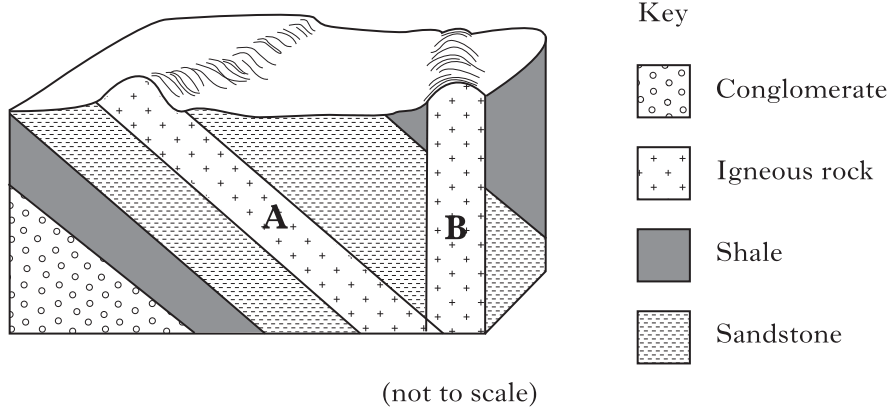
Pebbles	Gravel	Sand
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.....

1

Marks

9. Look at the diagram below.



(a) Name features A and B.

A

B

2

(b) Explain how features A and B have affected the landscape.

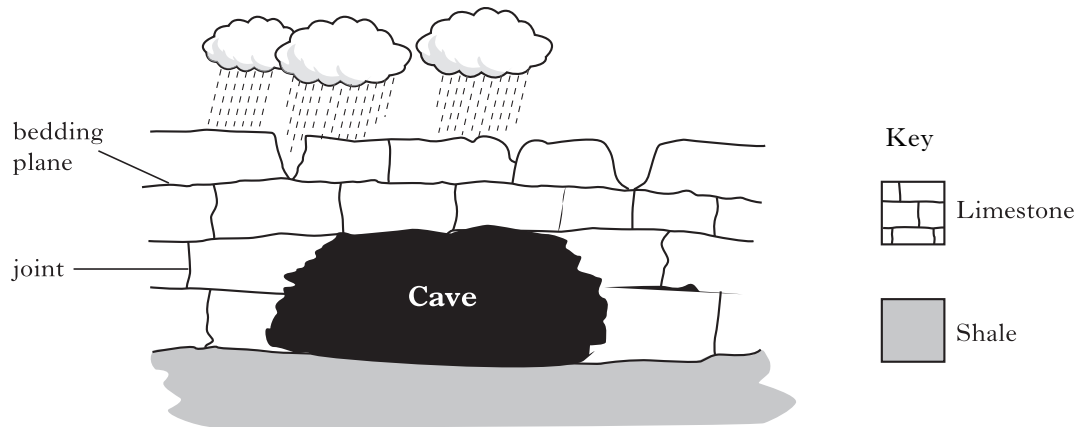
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[Turn over

Marks

10. Look at the diagram below showing an area of limestone.



Describe the **processes** which have formed the features of the landscape.

.....

.....

.....

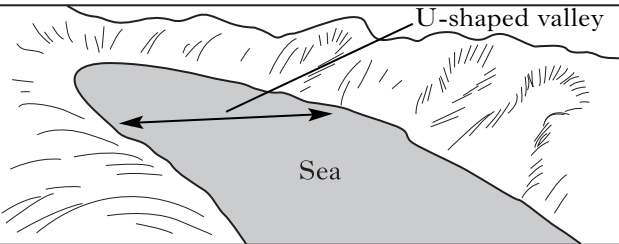
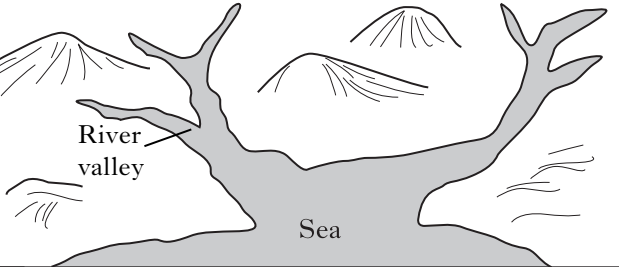
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3

Marks

11. (a) Complete the table below by naming the types of submerged coastline.

	Coastline Type	Name
J		
K		
L		

3

- (b) Explain how coastline K has been formed.

.....

.....

.....

.....

3

- (c) The climate is predicted to change. What effect will this have on coastline L?

.....

.....

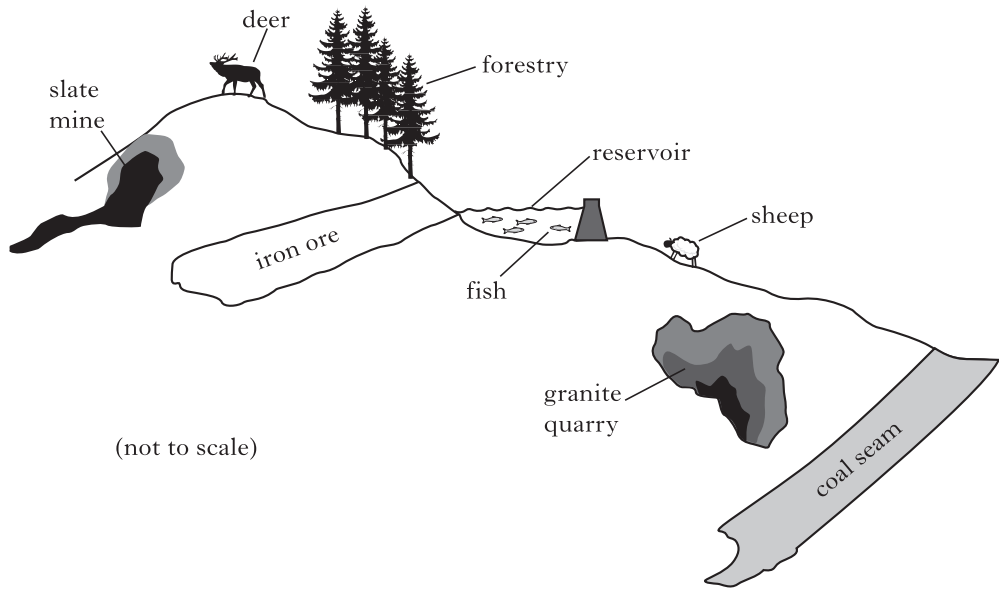
.....

1

[Turn over

Marks

12. Look at the diagram below, showing resources.



(a) Name **four physical** resources in the diagram.

- 1
- 2
- 3
- 4 4

Study the table below showing the volume of water in a reservoir, and the volumes removed for agricultural, domestic and industrial uses.

Year	Volume of water in Reservoir (millions of litres)	Volume for Agricultural Use (millions of litres)	Volume for Domestic Use (millions of litres)	Volume for Industrial Use (millions of litres)	Total Use of water (millions of litres)
1960	45 000	1000	1000	2000	4000
1970	43 000	1000	1000	2500	
1980	42 000	800	1000	2800	4600
1990	36 000	900	1000	2300	
2000	32 000	1200	1100	2500	
2010	35 000	1200	1100	2200	

(b) Complete the table showing the total amount of water used.

4

Marks

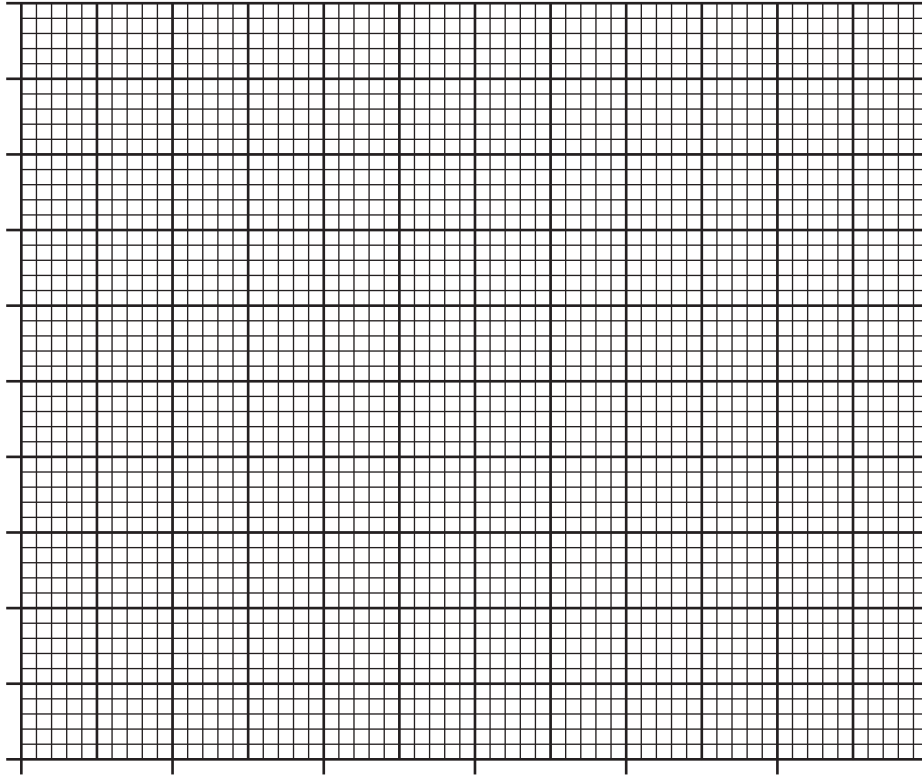
12. (continued)

- (c) In which year was most water removed from the reservoir?

..... 1

- (d) Draw a **line** graph on the graph paper below, showing the change in the volume of water in the reservoir from 1960 to 2010.

Millions
of litres



Years

3

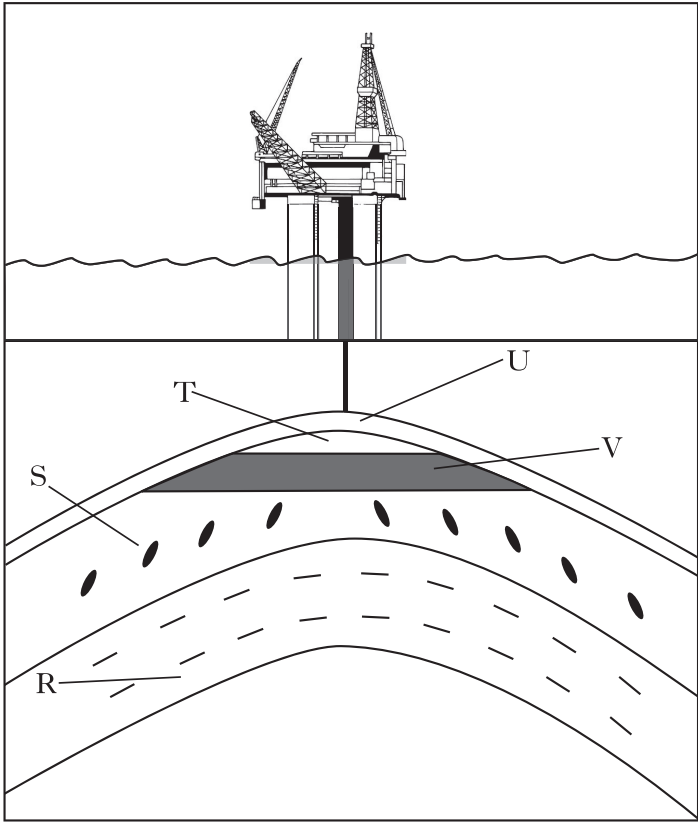
- (e) Between 2000 and 2010, the volume of water in the reservoir has increased. Suggest reasons for this.

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.....
.....
..... 2

[Turn over

Marks

13. Look at the diagram below.



Word Box

Movement of oil	Source rock
Gas in rock	Cap rock
	Oil in rock

Using the word box, complete the table below to name the features in the diagram.

Letter	Feature
R	
S	
T	
U	
V	

[Turn over for Question 14 on *Page eighteen*

Marks

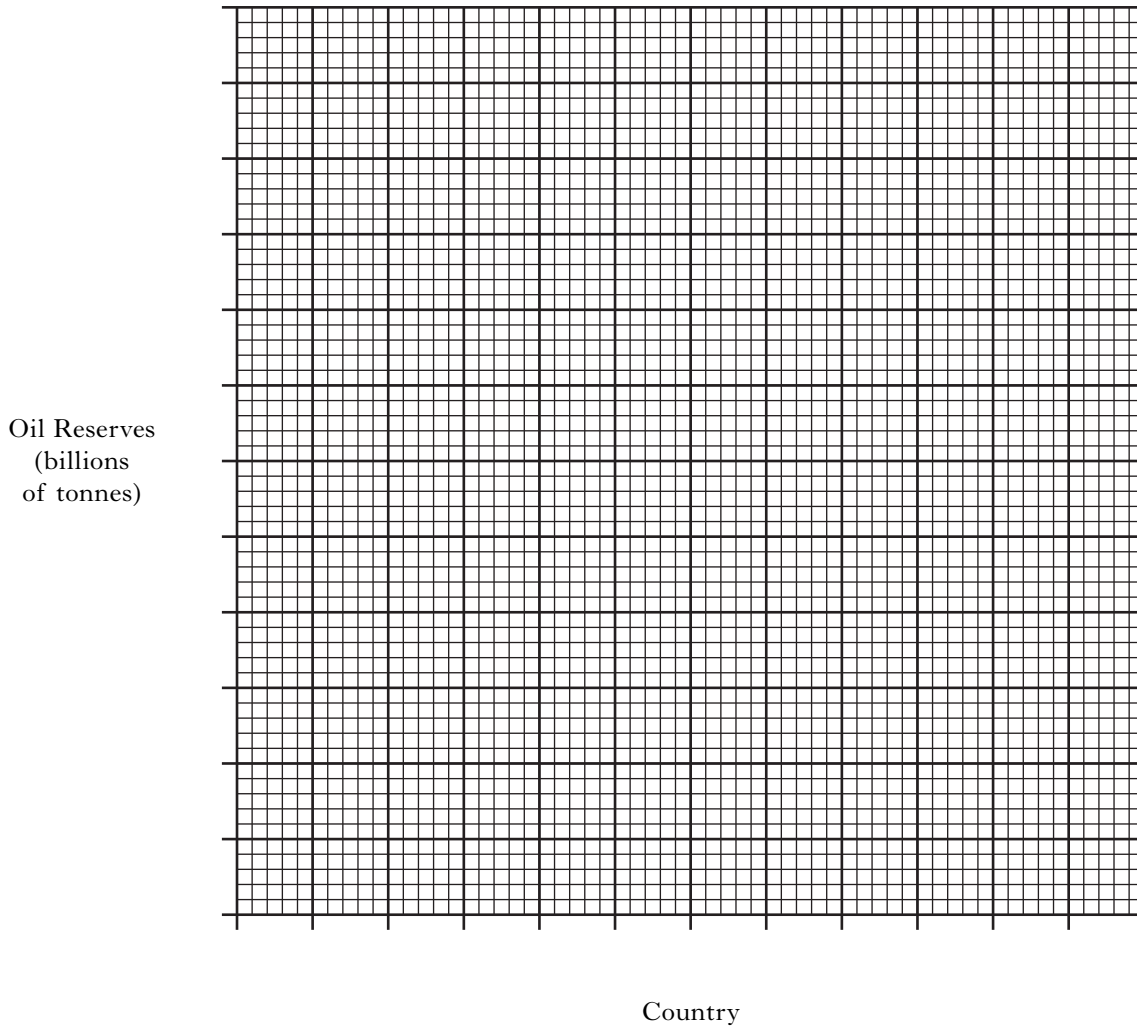
14. The table below shows the countries with the top ten oil reserves.

<i>Country</i>	<i>Oil reserves (billions of tonnes)</i>
Saudi Arabia	36
Iraq	15·1
Kuwait	13·3
UAE	13
Iran	12·3
Venezuela	11·2
Russia	6·7
Libya	3·8
Mexico	3·8
USA	3·7

Marks

14. (continued)

- (a) Using the information from the table on *Page eighteen*, draw a **bar** graph on the graph paper below.



4

- (b) Give **two** ways of discovering where oil reserves are found.

1

2

2

- (c) The price of oil is likely to increase. Give **two** ways of conserving oil.

.....

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2

[END OF QUESTION PAPER]

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