

FOR OFFICIAL USE

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Total

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X043/101

NATIONAL
QUALIFICATIONS
2009

FRIDAY, 29 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

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Forename(s)

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Surname

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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.



All questions should be attempted.

1. (a) Use the word box to complete the table below showing information about the solar system.

Word Box

Meteorite	Satellite	Planet	Star
-----------	-----------	--------	------

Feature	Description
Sun	
Moon	
Rock	

- (b) Give **one** difference between the Earth and the Moon.

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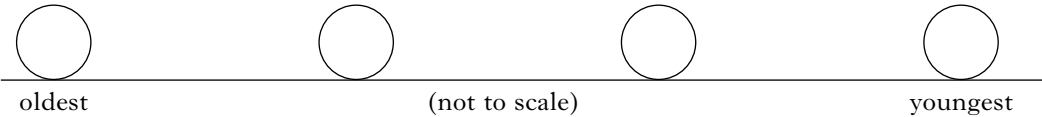
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2. Read the statements below and put them in the correct order from oldest to youngest on the time line.

Write only the letters in the circles.

- A Molten Earth forms
- B The Big Bang—formation of the Solar System
- C Dense tropical forests grow in Britain
- D Continents beginning to form

Time line



Marks

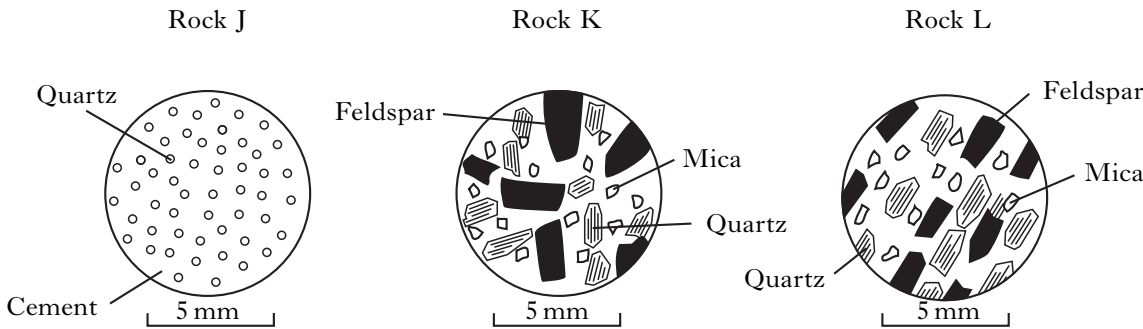
3

1

2

Marks

3. Look at the diagrams below showing views of three rocks seen under a microscope.



Use the word box to name the type of rock and give a reason for your answer.

Word Box

Igneous	Sedimentary	Metamorphic
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Rock J

Reason

Rock K.....

Reason

Rock L.....

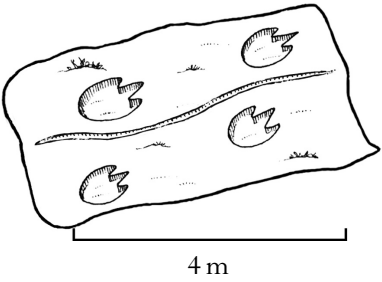
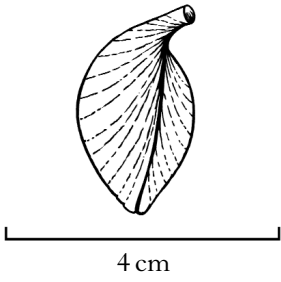
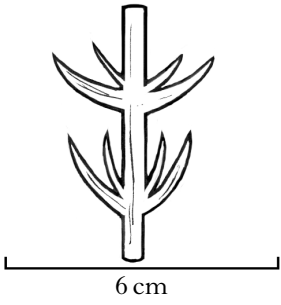
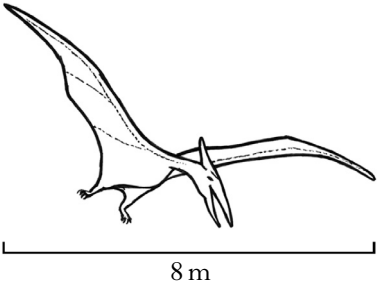
Reason

6

[Turn over

Marks

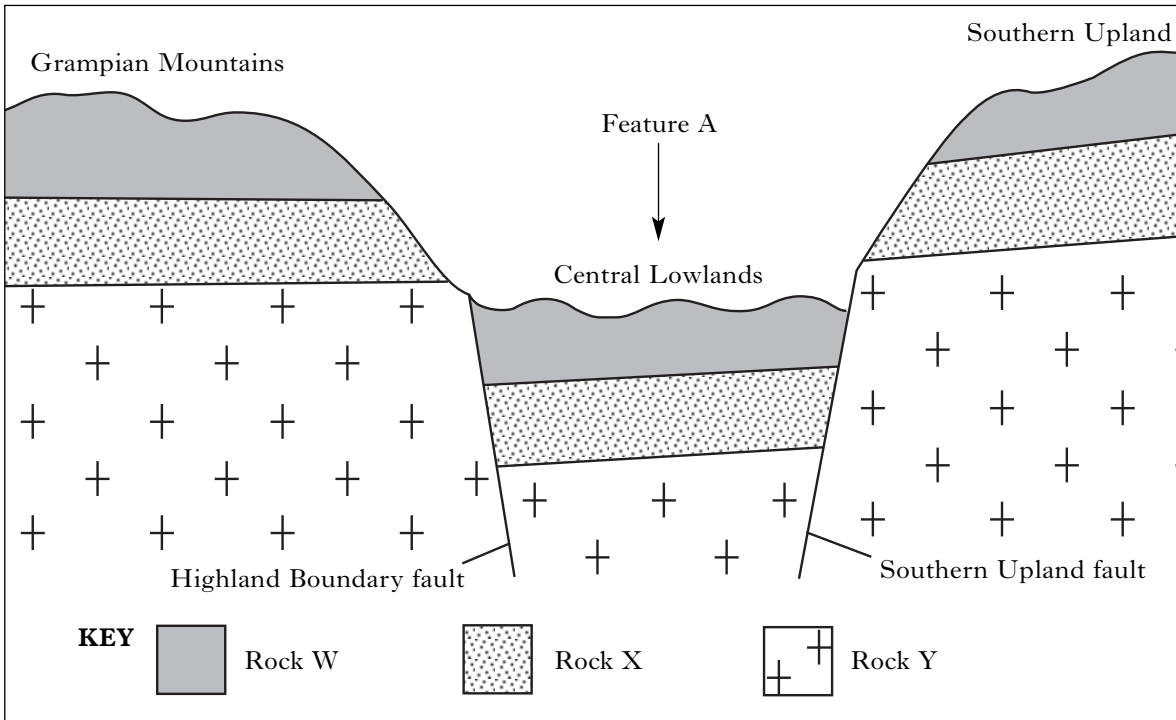
4. Complete the table below by naming the fossil and saying where the organism lived.

<i>Fossil</i>	<i>Fossil Name</i>	<i>Where organism lived</i>
		
		
		
		

4

Marks

5. Look at the diagram below showing a cross-section of part of Scotland.



(a) Name Feature A which has formed the Central Lowlands.

Feature A

1

(b) Explain how this Feature was formed.

.....

3

[Turn over

Marks

6. Look at the photograph below.



(a) Name structure A shown on the photograph.

.....

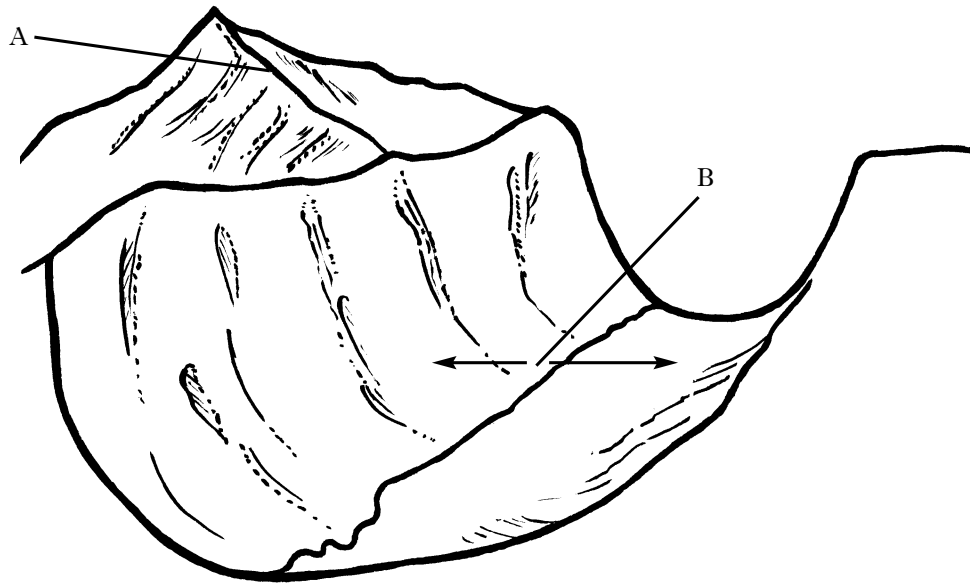
(b) Using a diagram with labels, describe how structure A was formed.

1

3

Marks

7. Look at the diagram below.



(a) Identify features A and B.

A

B

2

(b) Explain how feature B was formed. (*Diagrams may be used*)

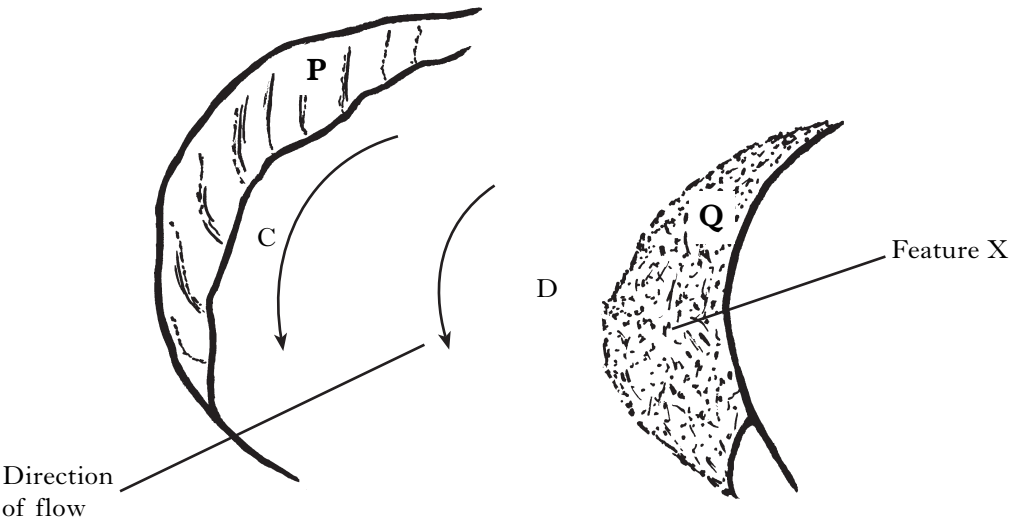
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(*Space for diagram if required*)

3

Marks

8. Look at the diagram below showing a cross-section of a river.



Using the Word Box, complete the table.

Word Box

slower	erosion	point bar	faster	deposition	delta
--------	---------	-----------	--------	------------	-------

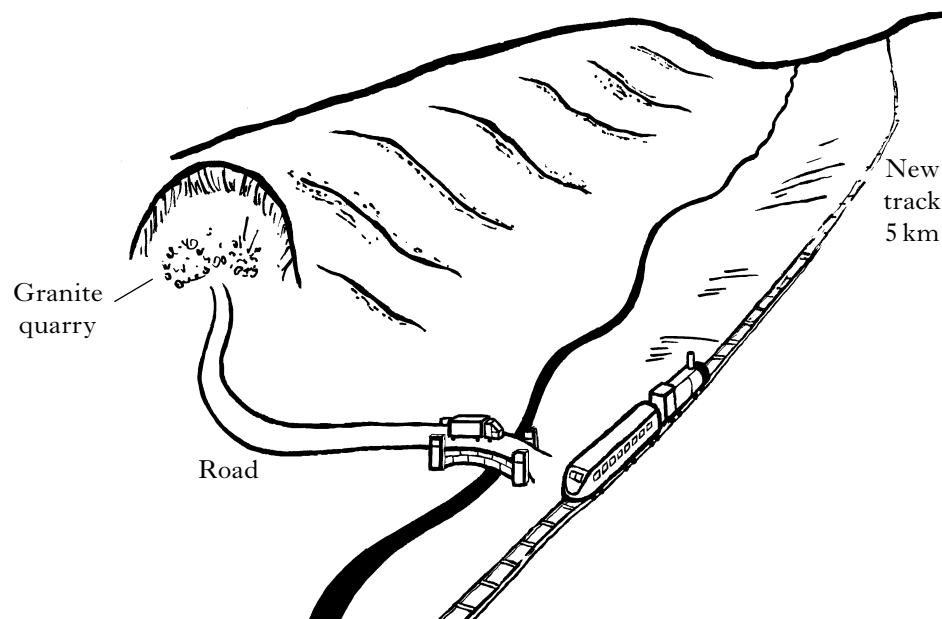
Feature X	
Current C	
Current D	
Process P	
Process Q	

5

[Turn over for Question 9 on *Page ten*

Marks

9. Look at the diagram below.



The Happy Train Company requires 15 000 tonnes of granite chips to extend the railway by 5 km. A local quarry is to provide the granite chips.

Costs

Costs of quarrying	£8 per tonne
Total transport cost by road	£5 per tonne
Rail cost of spreading granite per km	£3 per tonne

(a) Calculate the total cost of extending the railway.

Show your working.

9. (continued)

Marks

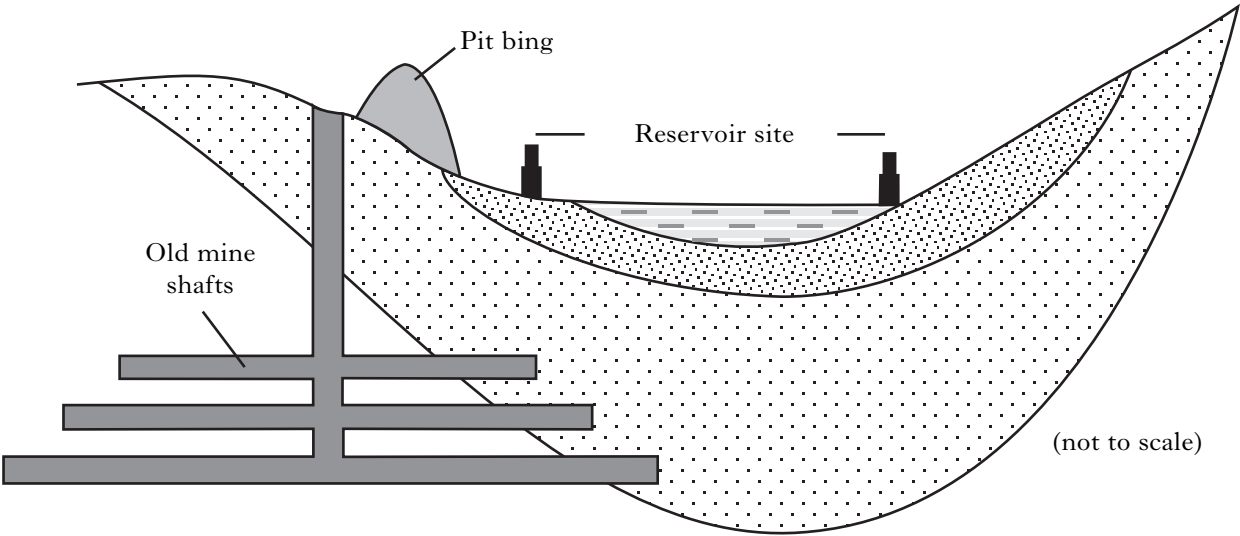
- (b) The railway company expects to make £80 000 a year.
Calculate how many years it will take the company to pay for the cost of the new track.
Show your working.

2

[Turn over

Marks

10. Look at the diagram below showing the possible site for a new reservoir.



KEY

	Clay
	Gravel
	Sandstone

Give **three** problems with building the reservoir at this site.

- 1
- 2
- 3

3

Marks

11. (a) Use the Word Box below to complete the table of minerals, metals and their uses.

Word Box

tin,	a good conductor of electricity,	galena,
very light and suitable for building aircraft,	iron,	
malachite,	used as fishing weights,	zinc

<i>Ore mineral</i>	<i>Metal</i>	<i>Uses of the metal</i>
Haematite		Used for building ships, railway lines and engines
	Lead	Used in roofing and batteries
Bauxite	Aluminium	
	Copper	
Cassiterite		Used for coating food cans

6

(b) Explain what is meant by gangue minerals.

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.....

.....

2

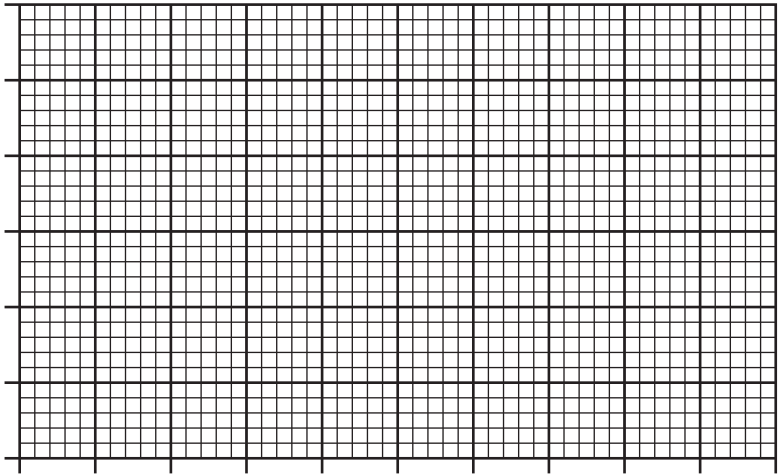
[Turn over

Marks

12. Look at the table below showing coal production in the UK from 1820–2000.

<i>Year</i>	<i>Coal Production (million tonnes)</i>
1820	20
1850	50
1880	160
1910	270
1940	230
1970	140
2000	20

(a) Using the figures in the table, draw a bar graph on the graph paper below.



3

Marks

12. (continued)

(b) Give **three** reasons for the change in production from 1970–2000.

- 1
.....
- 2
.....
- 3
.....

3

(c) Using the figures in the table, give the lowest coal production as a percentage of the highest coal production.

Show your working.

2

(d) Give a reason why coal production may change by 2030.

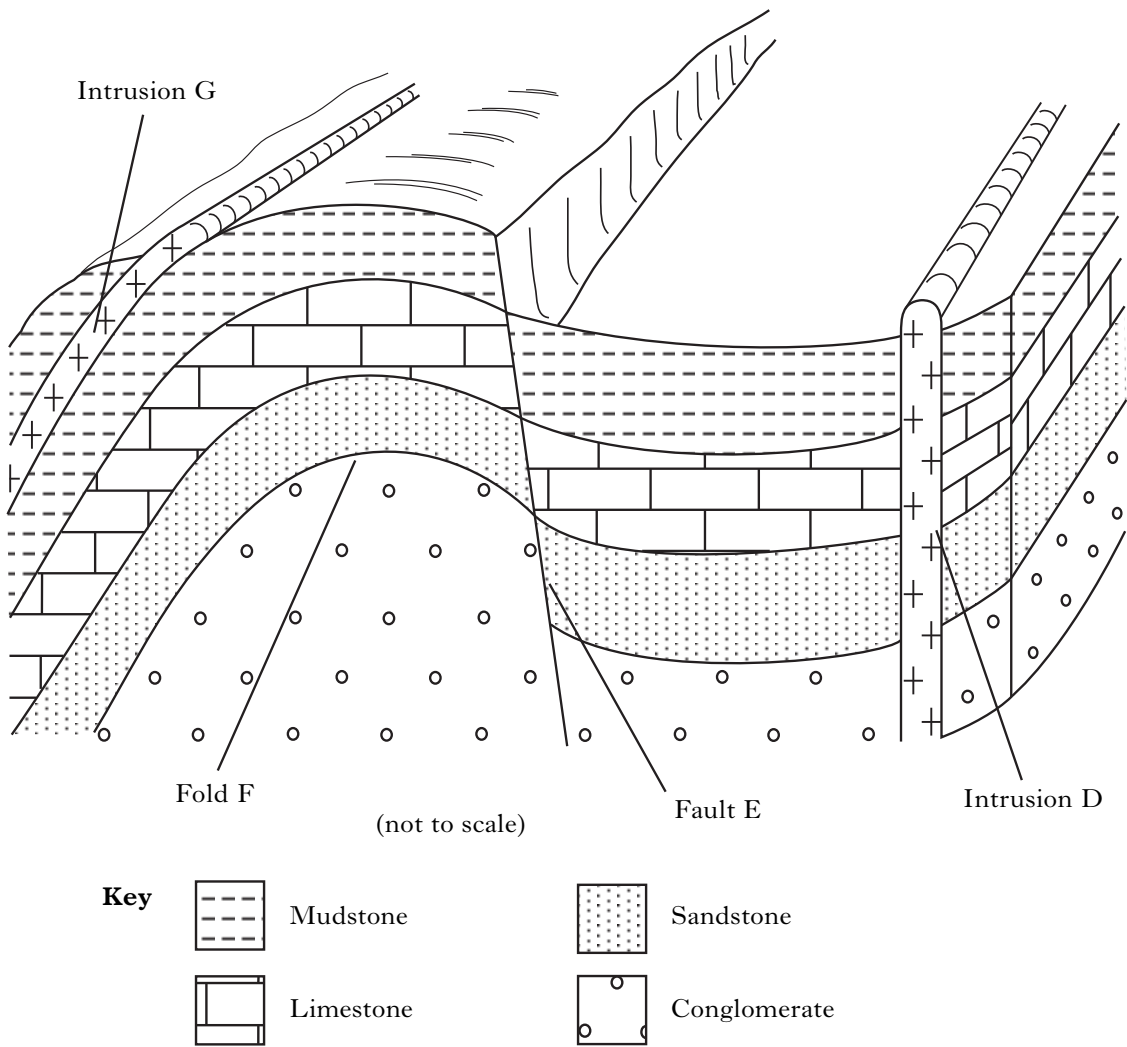
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1

[Turn over

Marks

13. Look at the diagram below.



(a) Complete the table by naming the features in the diagram.

Feature	Name
Intrusion D	
Fault E	
Fold F	
Intrusion G	

4

(b) Describe the effect on the scenery of intrusions D and G.

.....

.....

1

Marks

14. Look at the information below.

Description or formation of ores

- A Formed by deposition in rivers and on beaches.
- B Formed by chemical weathering.
- C Deposit formed by evaporation of sea water.
- D Deposited by hot watery fluids.

Complete the table showing how the ore deposits were formed.

Use only the letters.

<i>Ore deposit</i>	<i>Letter</i>
Hydrothermal	
Residual	
Placer	
Chemical precipitate	

4

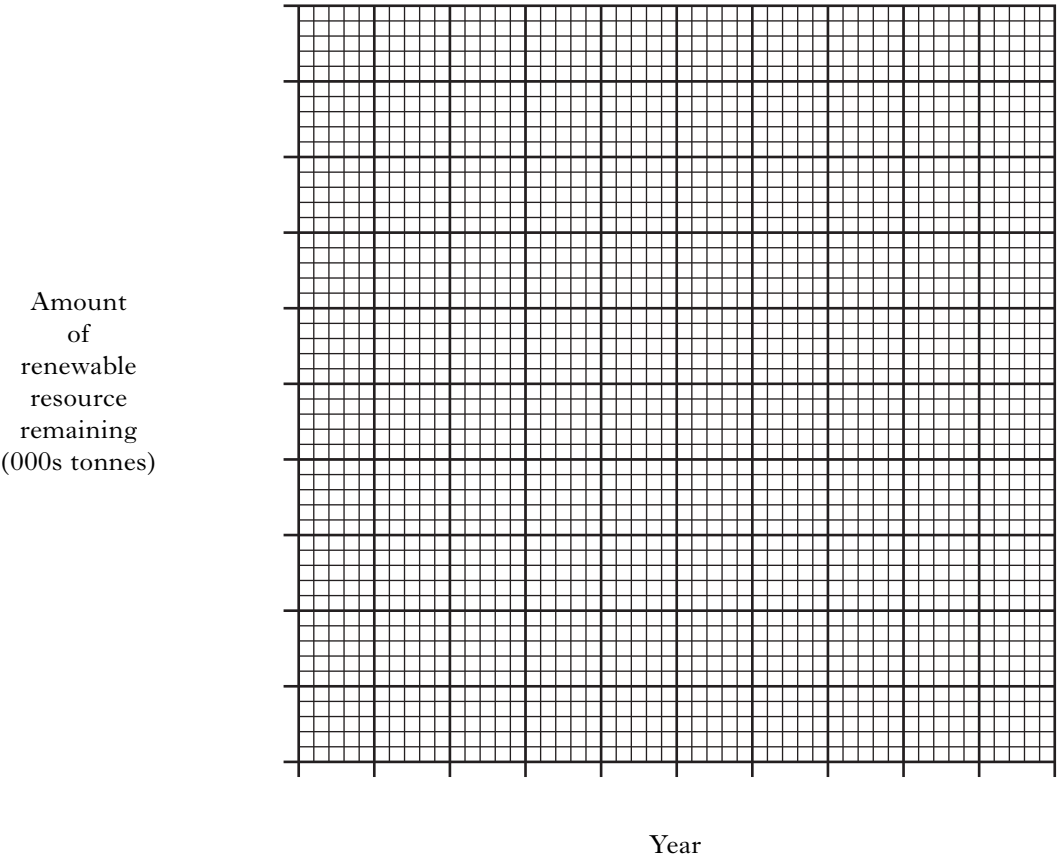
[Turn over

Marks

15. Look at the table below showing the amount remaining of a renewable resource.

<i>Year</i>	<i>Amount of renewable resource remaining (000s tonnes)</i>
1	200
2	200
3	160
4	130
5	100
6	70
7	40
8	10

(a) Using the information from the table, draw a line graph below.



(b) Mark on the graph the point where over use started.

3

1

Marks

15. (continued)

- (c) Predict what would happen if over use was stopped after year 10.
(Tick (✓) **one** box.)

☐

Goes up

☐

Goes down

Give a reason for your answer.

Reason

.....

.....

1

16. Using the Word Box below, give **three** renewable resources.

Word Box

coal	wool	fish	iron ore
leather	gas	copper	oil

1

2

3

3

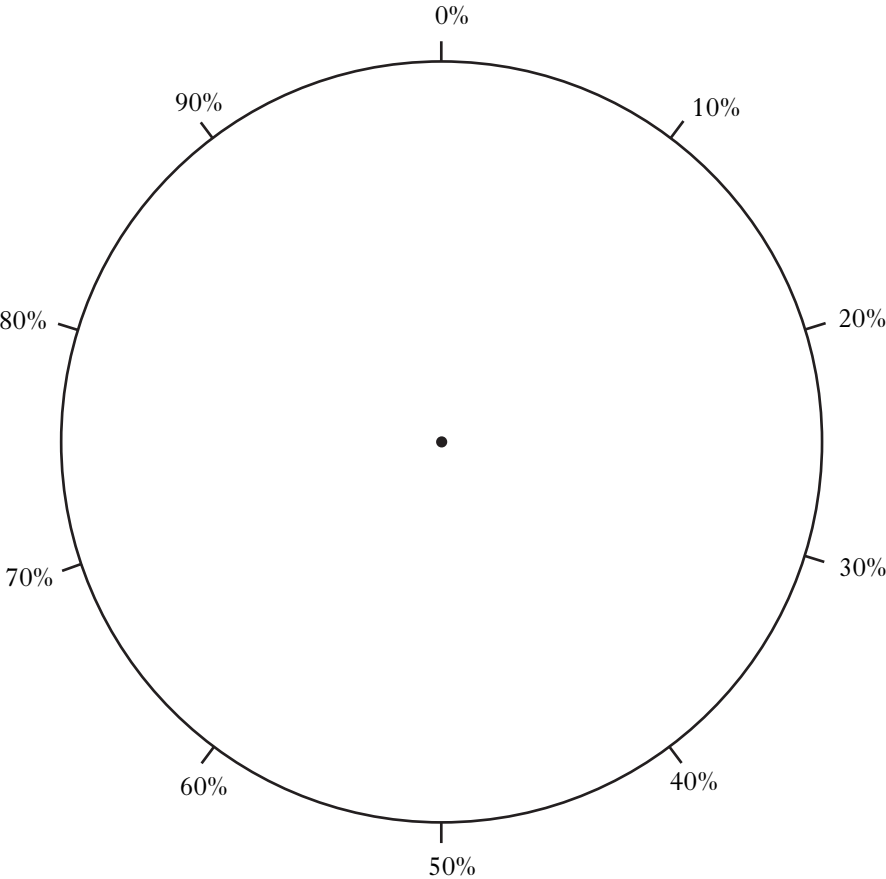
[Turn over for Question 17 on *Page twenty*]

Marks

17. Look at the table below showing domestic use of water.

<i>Use</i>	<i>Amount used</i>
Flushing toilet	32%
Bath and shower	18%
Washing machine and dishwasher	14%
Outside use	3%
Drinking	3%
Other	30%

Show the percentages of domestic use of water on the pie chart below. Label the amounts.



[END OF QUESTION PAPER]

3