

FOR OFFICIAL USE

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G

KU

PS

Total Mark

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3700/29/01

NATIONAL
QUALIFICATIONS
2013

WEDNESDAY, 1 MAY
10.20 AM – 11.35 AM

SCIENCE
STANDARD GRADE
General Level

Fill in these boxes and read what is printed below.

Full name of centre

Town

Forename(s)

Surname

Date of birth

Day Month Year

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Scottish candidate number

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Number of seat

- 1 Answer as many questions as you can.
- 2 Read the whole of each question carefully before you answer it.
- 3 Write your answers in the spaces provided. Showing working may help in some questions.
- 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

KU	PS

15. Humans change the environment to meet their basic needs.
These basic needs are shown in the box.

Warmth	Food	Shelter	Water	Air
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Which need is being met by

- (a) clearing land to build houses?

.....

1

- (b) building dams and reservoirs?

.....

1

16. Complete the following sentences about toxic gases by circling the correct answer in each box.

Burning

polyvinylchloride (PVC) polyurethane

 produces hydrogen cyanide gas.

Burning polystyrene produces

hydrogen chloride carbon monoxide

 gas.

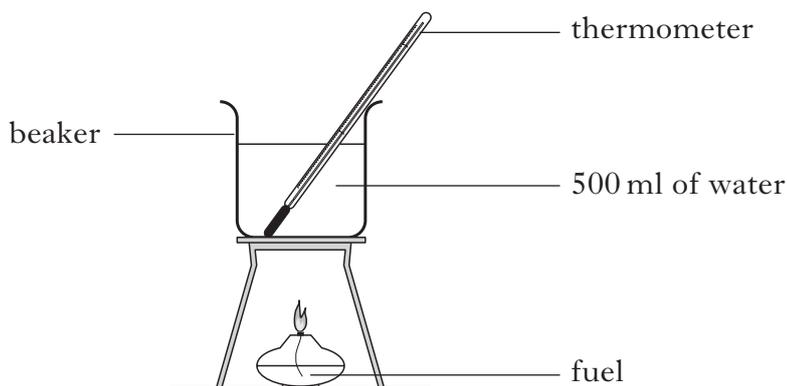
2

[Turn over

20. The apparatus shown below was used to compare the heat output of different fuels.

Marks

The increase in water temperature was measured for each fuel.



The results are shown in the table.

<i>Fuel</i>	<i>Mass of fuel burned (g)</i>	<i>Increase in water temperature (°C)</i>
methanol	1	4
methanol	2	8
ethanol	1	5
ethanol	2	10
propanol	1	6

- (a) Calculate the increase in water temperature when 5 g of ethanol are burned.

Space for working

Answer °C

1

- (b) When 3 g of one of the fuels were burned the water temperature increased by 18 °C. Which fuel was burned?

Space for working

Fuel

1

Marks	KU	PS
1		
2		
2		
1		

23. Different fuels are used to produce energy.

(a) Which of the following describes coal, oil and natural gas?

- A They are fossil fuels and their supply is unlimited.
- B They are renewable fuels and their supply is unlimited.
- C They are fossil fuels and their supply is finite.
- D They are renewable fuels and their supply is finite.

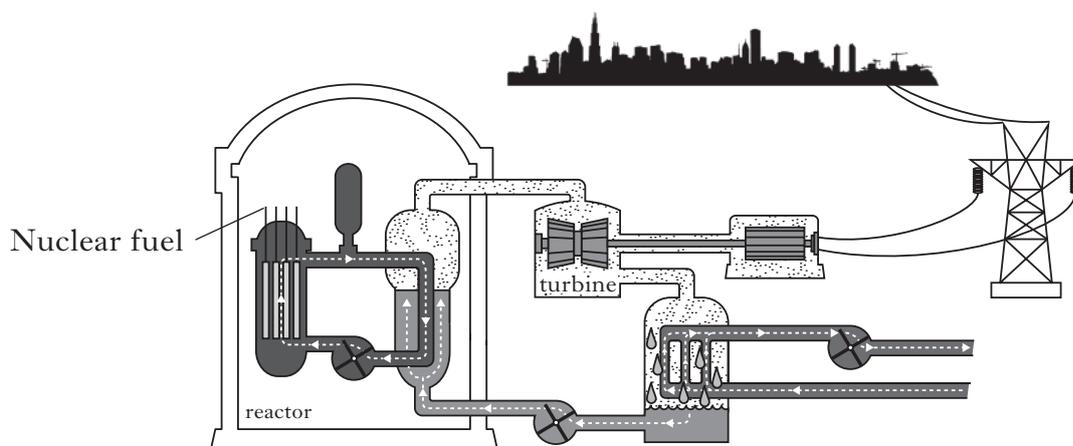
Underline the correct answer.

(b) Name **two** gases produced when coal burns.

1

2

(c) Nuclear fuel is used in some power stations.



(i) Complete the sentences to describe how a nuclear power station works.

In the reactor, the nuclear fuel gives out heat energy.

The heat energy is used to change water into

This is used to turn the blades of the turbine.

The turbine drives the to make electricity.

(ii) Give one **disadvantage** of using nuclear fuel.

.....

[Turn over

Marks

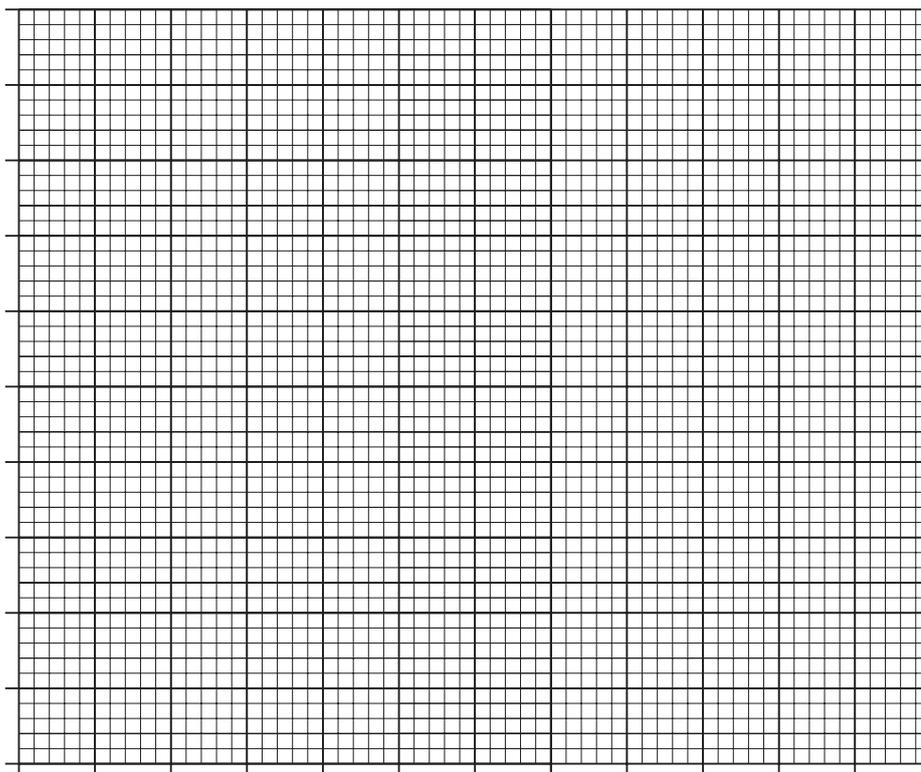
	KU	PS
3		
1		

26. Margot measured the current flowing through wires of different lengths. The table below shows her results.

Length of wire (cm)	20	40	60	80	100
Current (amps)	9.6	4.8	3.2	2.4	2.0

- (a) Present this information as a **line** graph.

(Additional graph paper may be found on *Page twenty-three*.)



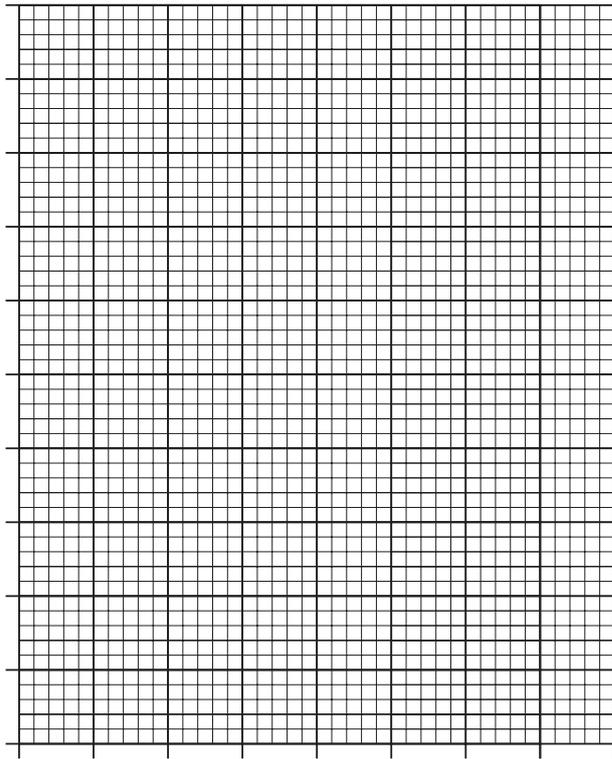
Length of wire (cm)

- (b) Predict the current flowing through a wire of length 120 cm.

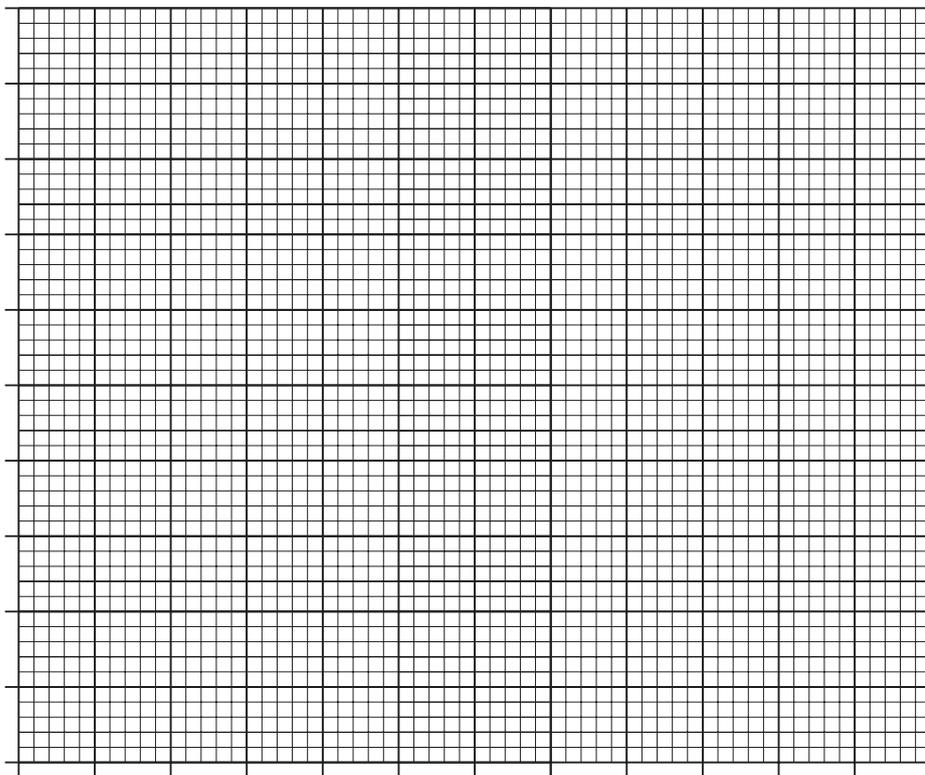
..... amps

[END OF QUESTION PAPER]

ADDITIONAL GRAPH PAPER FOR QUESTION 13



ADDITIONAL GRAPH PAPER FOR QUESTION 26(a)



Length of wire (cm)

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