

**Paper Reference(s)    4PH1/2P**  
**Pearson Edexcel International GCSE (9–1)**

**Physics**  
**UNIT: 4PH1**  
**PAPER: 2P**

**Diagram Booklet**

**In the boxes below, write your name, centre number and candidate number.**

<b>Surname</b>					
<b>Other names</b>					
<b>Centre Number</b>					
<b>Candidate Number</b>					

## **INSTRUCTIONS**

**There may be spare copies of some diagrams in case you need them.**

**THIS DIAGRAM BOOKLET MUST BE  
RETURNED WITH THE QUESTION PAPER  
AT THE END OF THE EXAMINATION.**

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**Question 1(b)**

**Toaster = 1068 W**

**Kettle = 2025 W**

**Laptop = 47 W**

**Electric drill = 713 W**

**Television = 59 W**

**Hair dryer = 1511 W**

## Question 1(c)

**199 W**

**202 W**

**201 W**

**213 W**

**200 W**

**201 W**

## Question 1(c)

**199 W**

**202 W**

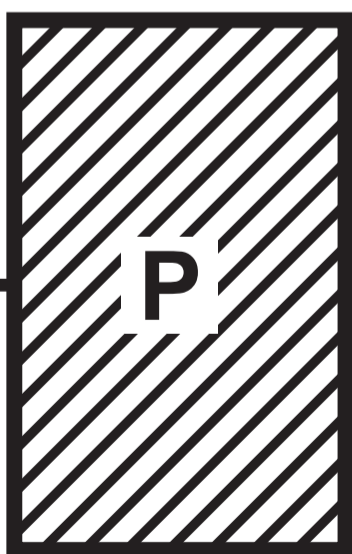
**201 W**

**213 W**

**200 W**

**201 W**

## Question 2(b)

**BEFORE****stationary****4·8 kg****AFTER****2·9 kg****1·9 kg****v** ←

→

**3·7 m/s**

**Question 3(a)**

**Charger X**

**Input voltage = 230 V**

**Output voltage = 5.0 V**

**Output current = 1.2 A**

**Question 3(b)(iii)**

**Charger Y**

**Input voltage = 230 V**

**Output voltage = 5.0 V**

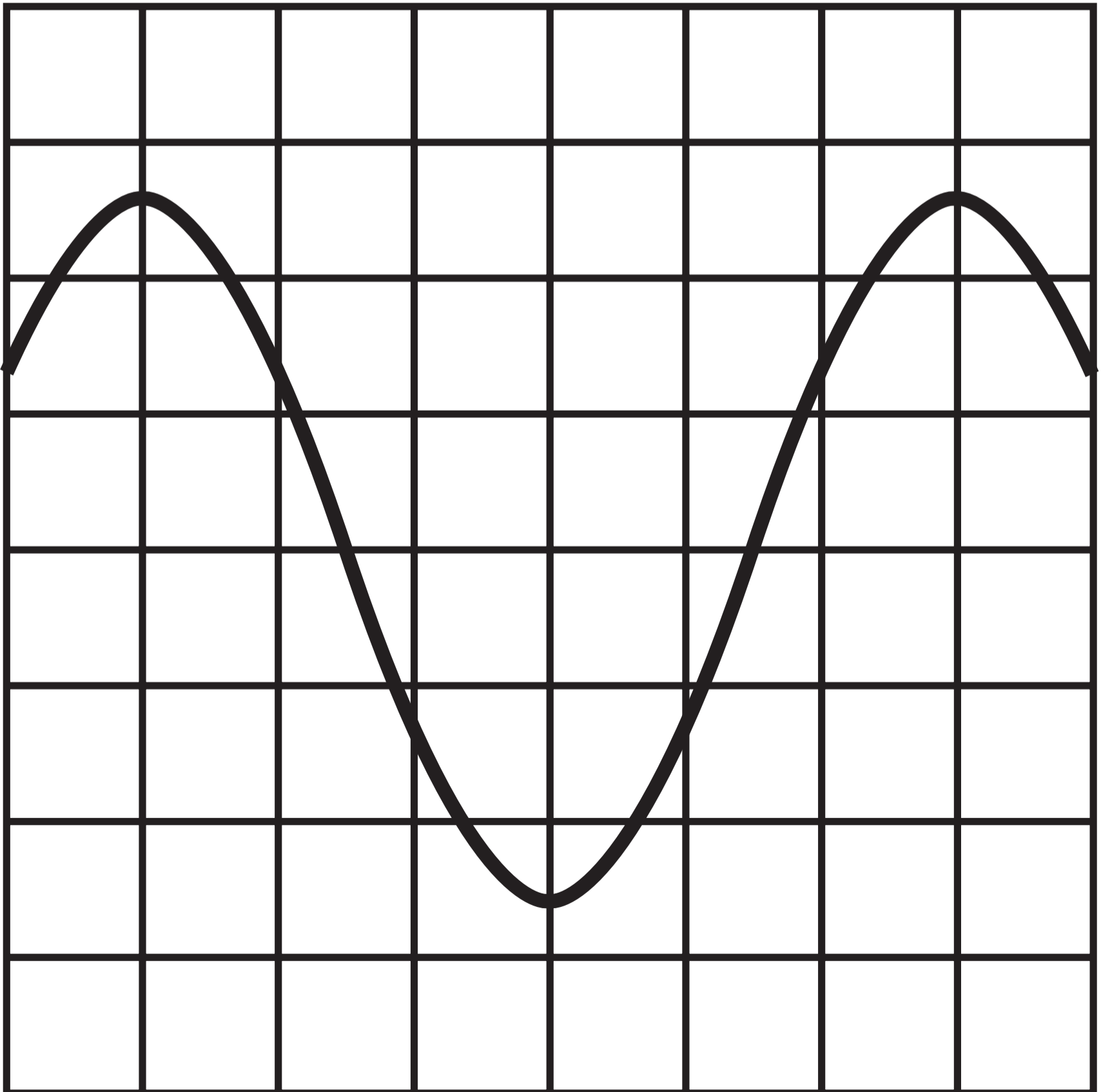
**Output current = 2.1 A**

## Question 4(c)

**oscilloscope settings:**

**y direction: 1 square = 2 V**

**x direction: 1 square =  $5 \times 10^{-6}$  s**



Question 5(a)

	Moderator	Control rod
absorbs excess neutrons		
can be made of boron		
can be made of water or graphite		
is lowered into or raised from the reactor core to adjust the rate of reaction		
reduces the speed of neutrons so they are more likely to cause fission		

Question 5(a)

	Moderator	Control rod
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## Question 5(c)

<b>Total mass of uranium in fuel pellet</b>	<b>0.0088 kg</b>
<b>Percentage (by mass) of uranium-235 in fuel pellet</b>	<b>3.0 %</b>
<b>Mass of uranium-235 atom</b>	<b><math>3.90 \times 10^{-25} \text{ kg}</math></b>
<b>Total energy released from fuel pellet due to fission</b>	<b><math>2.17 \times 10^{10} \text{ J}</math></b>

**Question 7(c)**

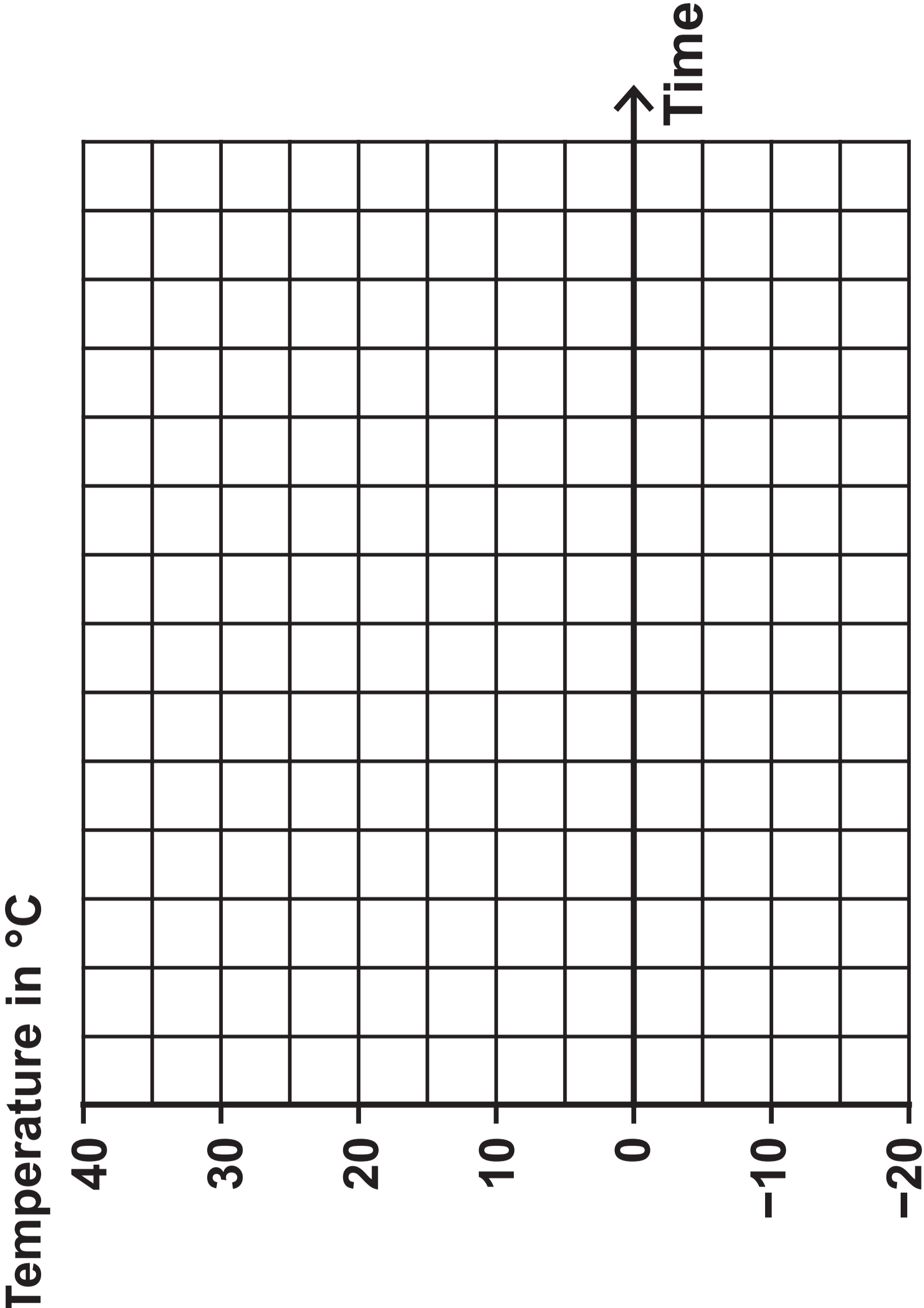
**Mass of aluminium block = 1.6 kg**

**Mass of water = 2.3 kg**

**Initial temperature of water = 20 °C**

**Maximum temperature of water = 38 °C**

Question 7(d)



Question 7(d)

Temperature in °C

