

**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

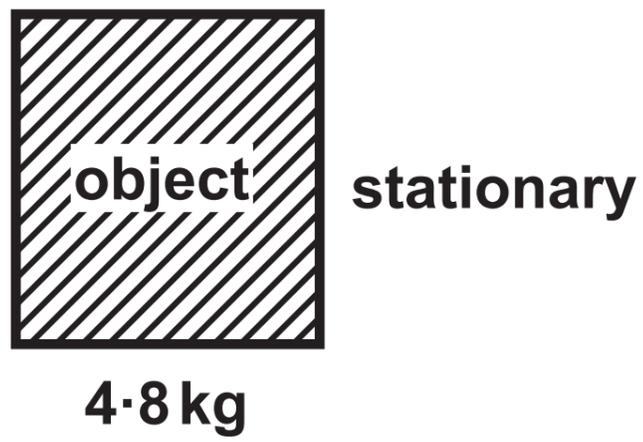
213 W

200 W

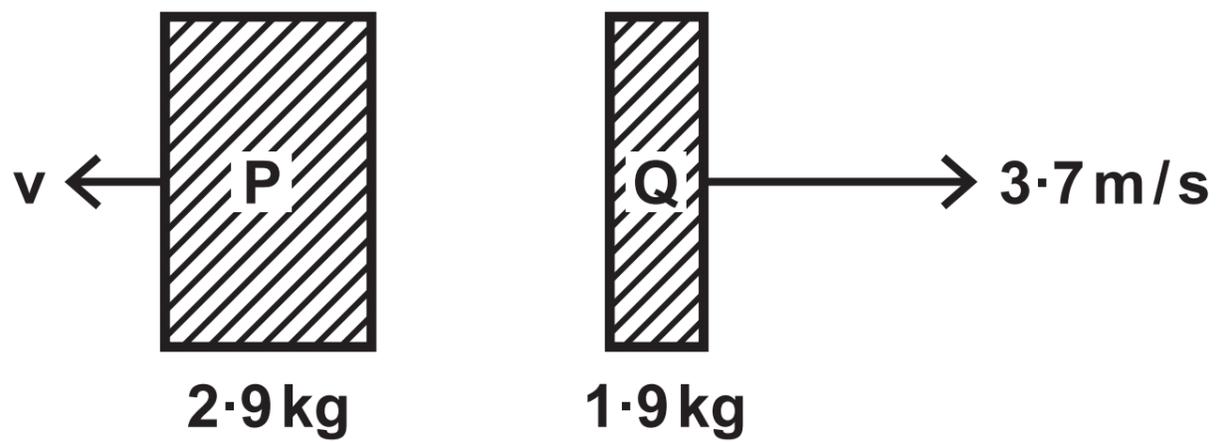
201 W

## Question 2(b)

BEFORE



AFTER



**Question 3(a)****Charger X**

**Input voltage = 230 V**

**Output voltage = 5.0 V**

**Output current = 1.2 A**

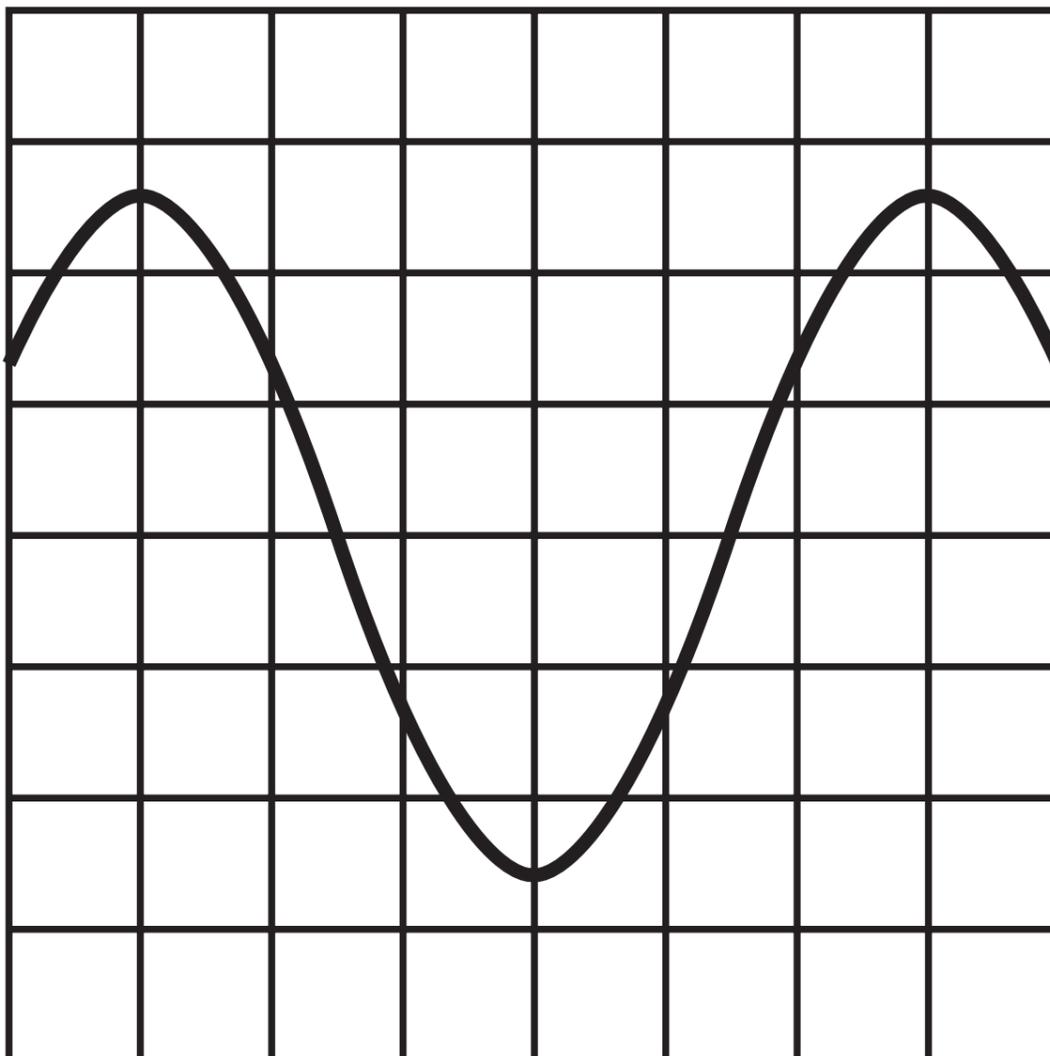
**Question 3(b)(iii)****Charger Y****Input voltage = 230 V****Output voltage = 5.0 V****Output current = 2.1 A**

## Question 4(c)

**oscilloscope settings:**

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

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



## Question 5(a)

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

## Question 5(a)

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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}</math> kg</b>
<b>Total energy released from fuel pellet due to fission</b>	<b><math>2.17 \times 10^{10}</math> J</b>

## Question 7(c)

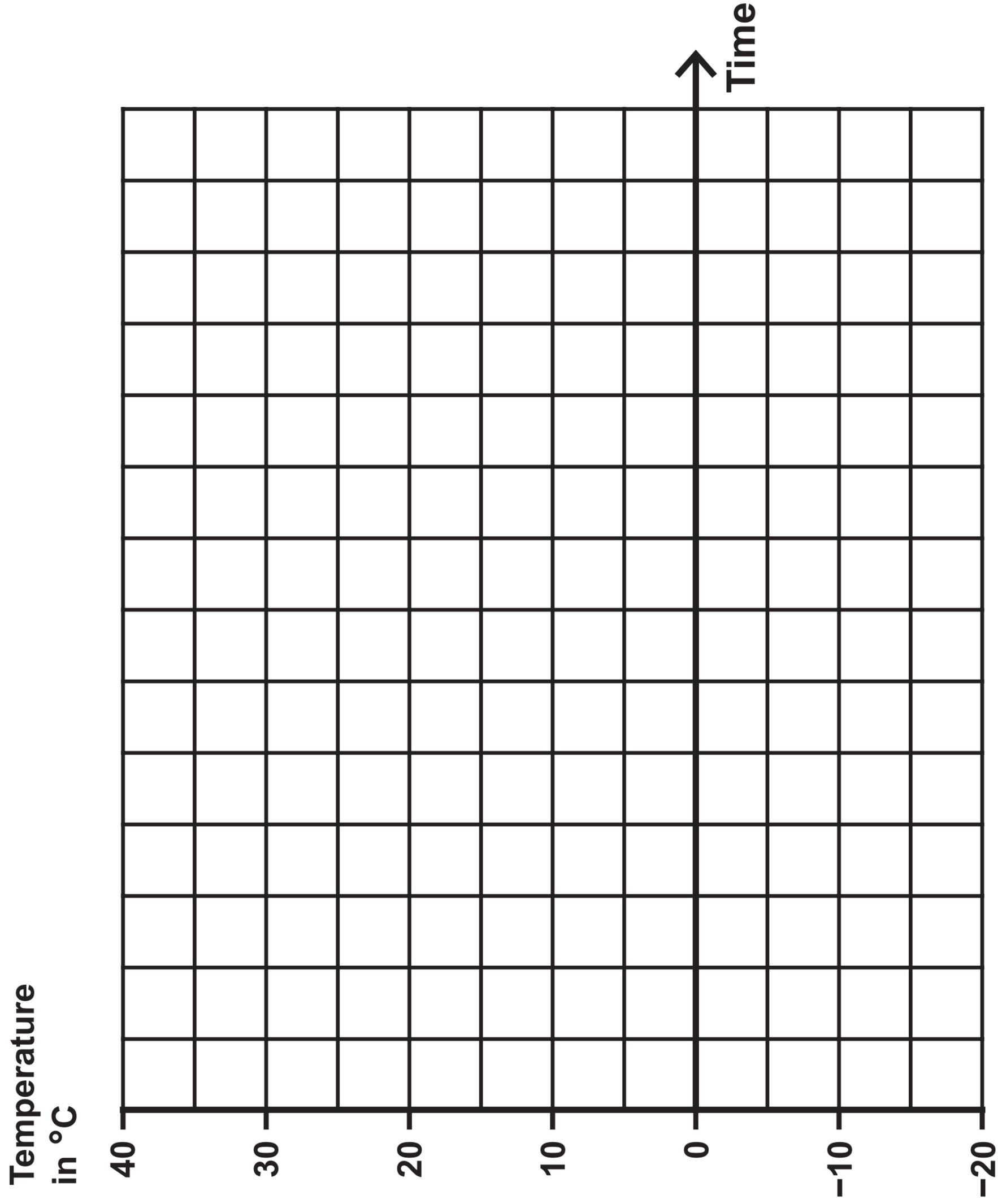
**Mass of aluminium block = 1.6 kg**

**Mass of water = 2.3 kg**

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

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

Question 7(d)



Question 7(d)

