

**Chemistry**  
**UNIT: 4CH1**  
**Science (Double Award) 4CH1/4SD0**  
**PAPER: 1C**

**Friday 17 May 2024 – Morning**

**Time: 2 hours**

**Diagram Booklet**

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

**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.

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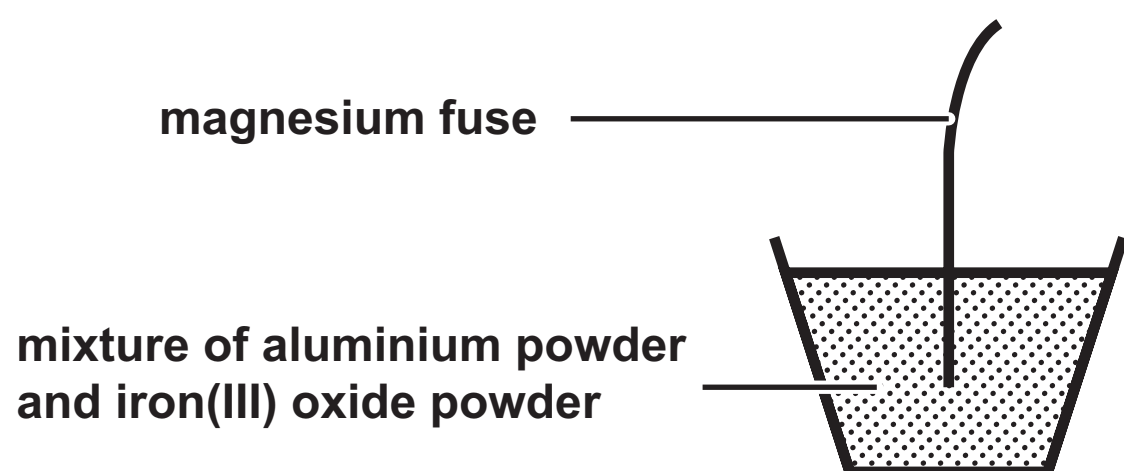
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Question 1(a)

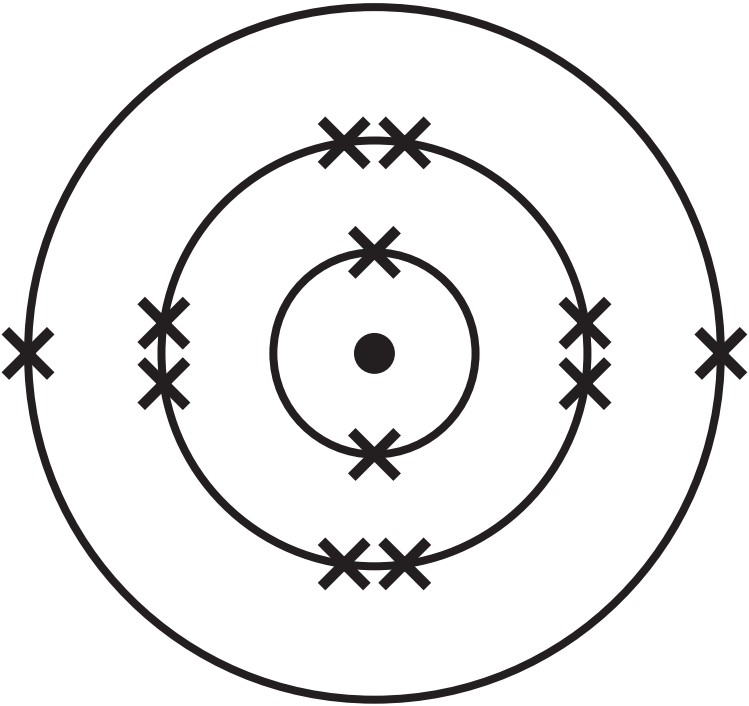
Description	Substance
a good conductor of electricity	
an element that is a liquid at room temperature	
a substance that can be used to form a polymer	
an element that forms a basic oxide	
a substance that has a giant covalent structure	

## Question 2(a)

<b>Metal</b>	<b>Reaction with water</b>	<b>Reaction with dilute hydrochloric acid</b>
<b>P</b>	no reaction	no reaction
<b>Q</b>	very fast reaction	(not done)
<b>R</b>	no reaction	slow reaction
<b>S</b>	slow reaction	fast reaction

**Question 2(b)**

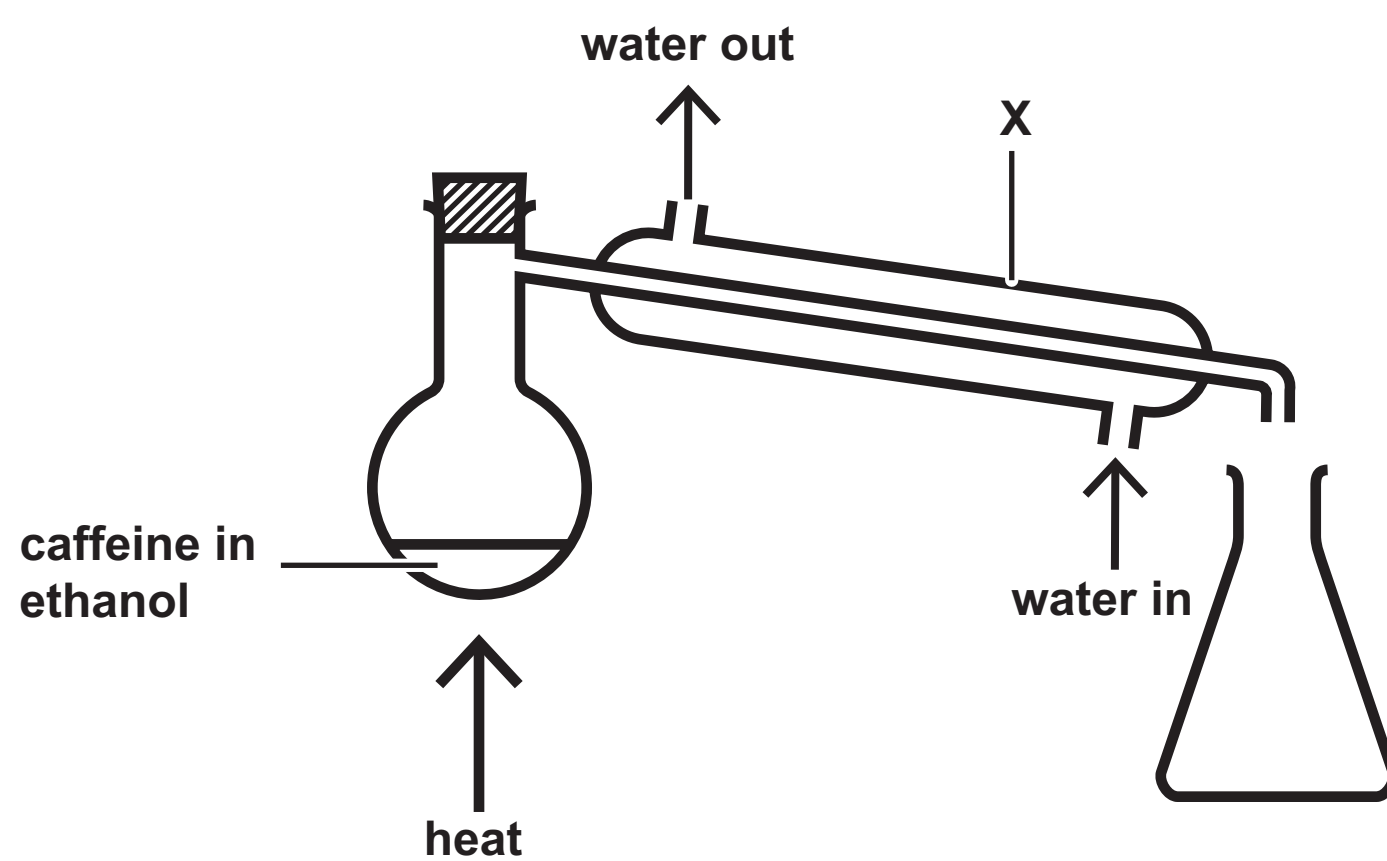
Question 3



Question 3(c)

Isotope	Number of protons	Number of neutrons	Percentage abundance
1	12	12	79.0
2	12	13	10.0
3	12	14	11.0

## Question 4(b)

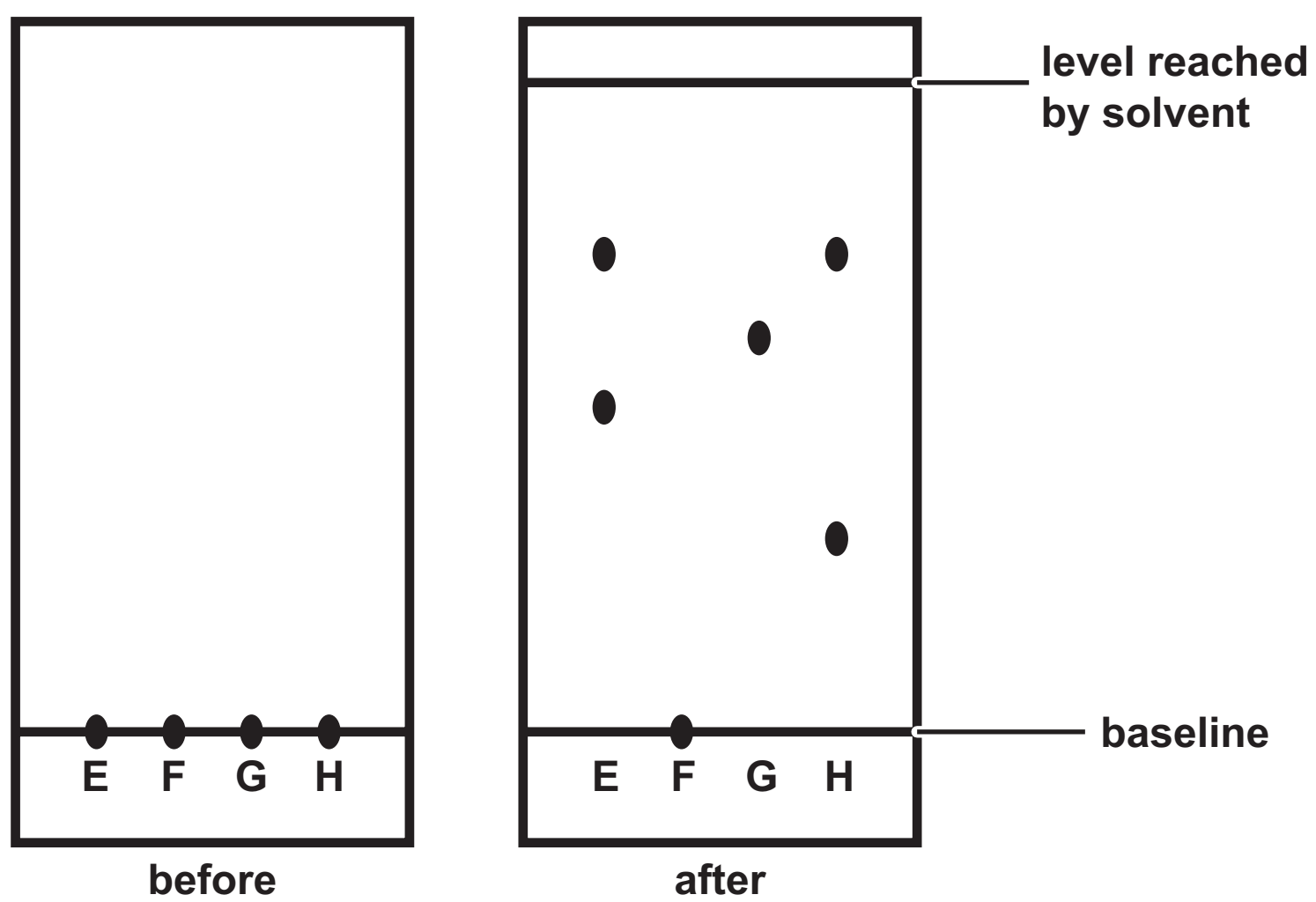




## Question 4(c)

Name	Formula	Melting point in °C
caffeine	$\text{C}_8\text{H}_{10}\text{N}_4\text{O}_2$	235
calcium bromide	$\text{CaBr}_2$	730

## Question 5

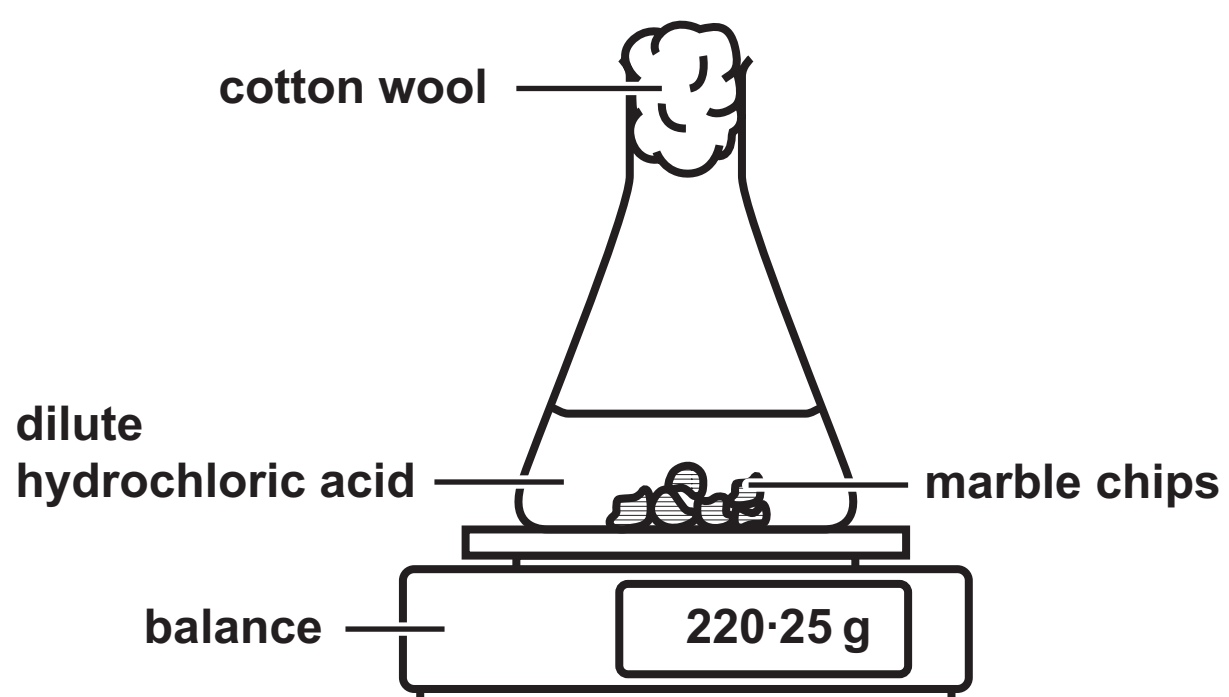


**Question 7(b)****N****N**

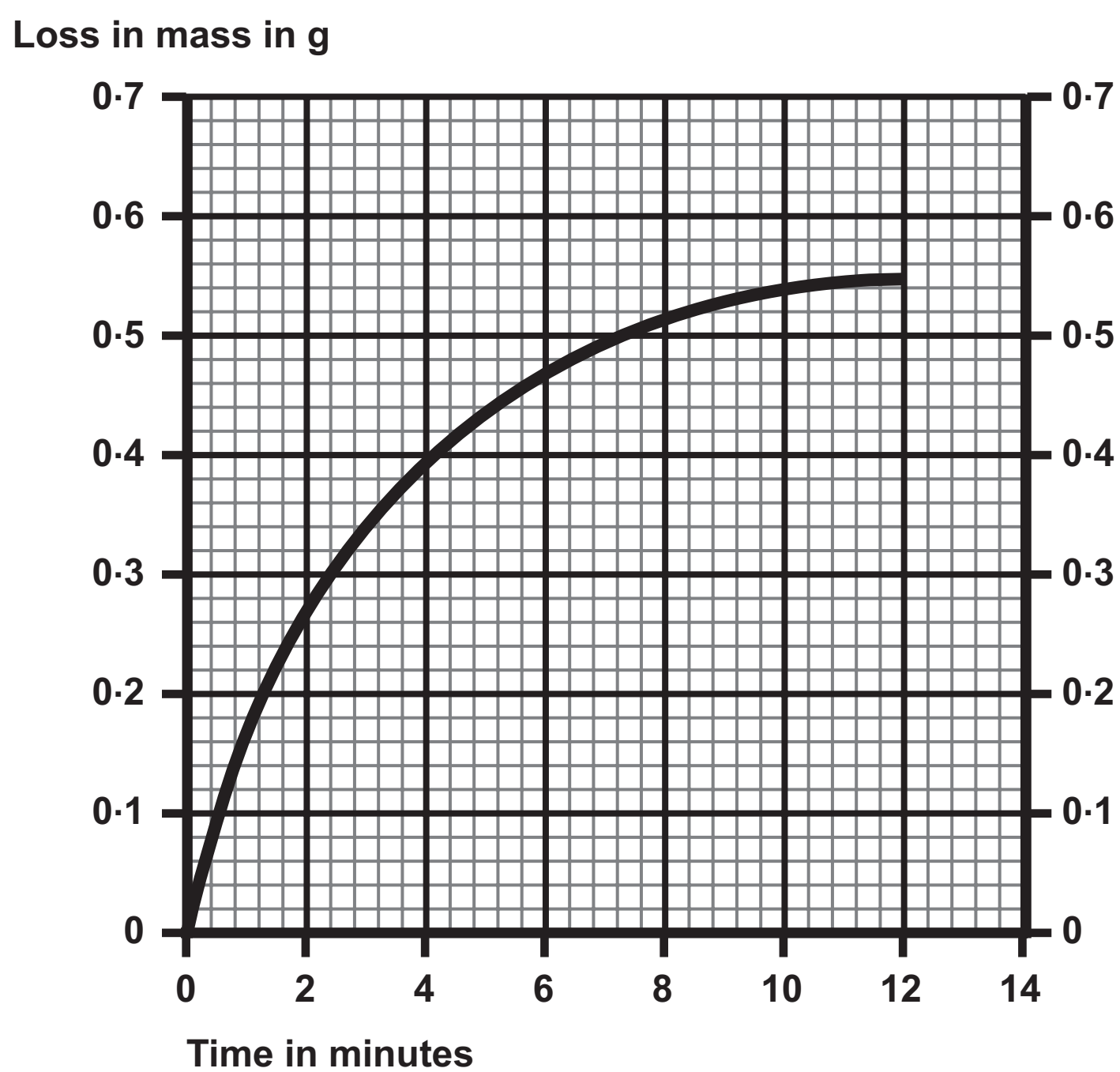
**Question 8(a)(ii)****alkene isomer 1****alkene isomer 2**



## Question 9(a)



## Question 9(b)



## Question 10(a)





## Question 10(b)

starting temperature of the acid in °C	
highest temperature reached in °C	
temperature rise in °C	16.4

## Question 1(a)

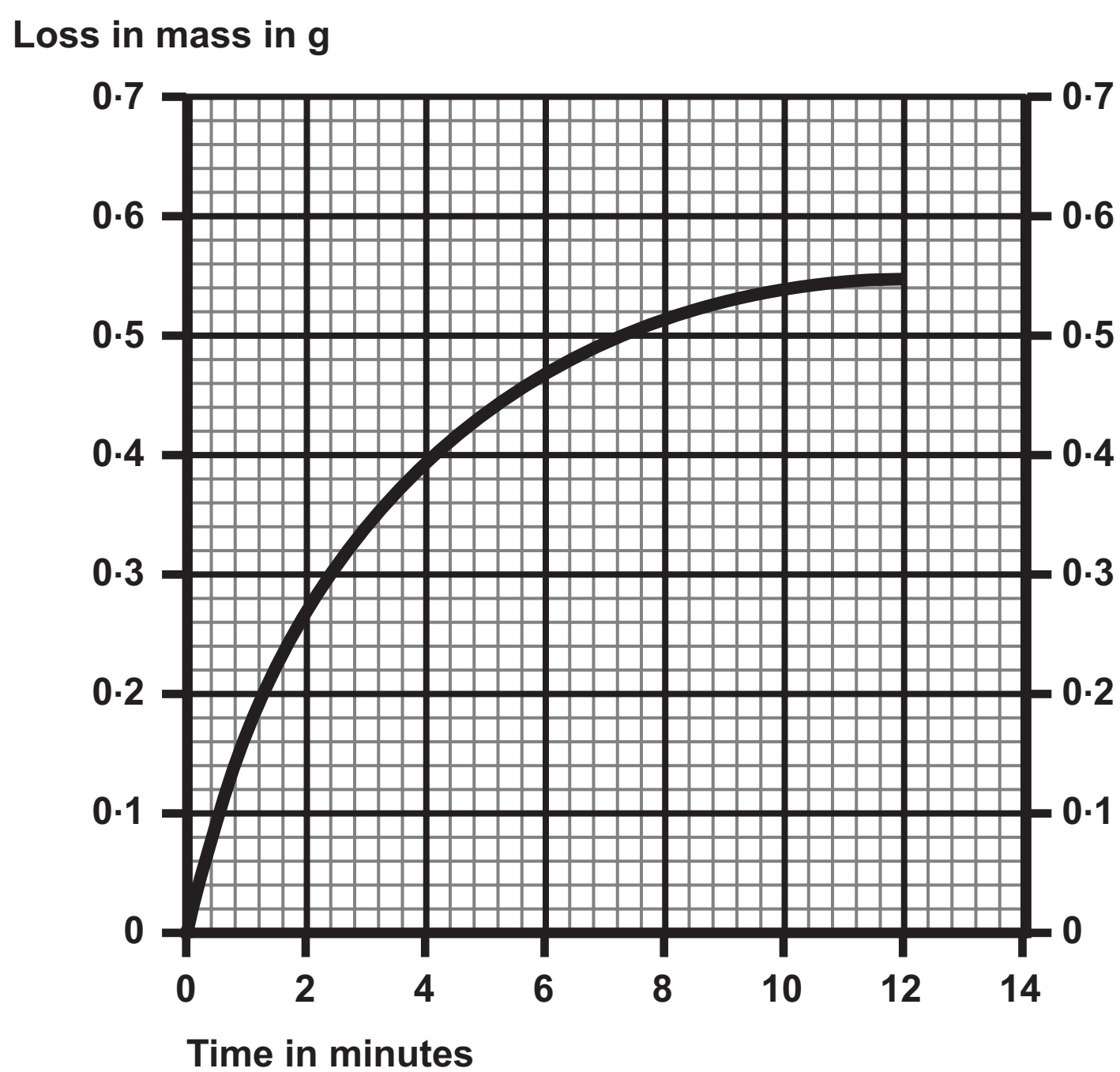
Description	Substance
a good conductor of electricity	
an element that is a liquid at room temperature	
a substance that can be used to form a polymer	
an element that forms a basic oxide	
a substance that has a giant covalent structure	

**Question 7(b)****N****N**

**Question 8(a)(ii)****alkene isomer 1****alkene isomer 2**



## Question 9(b)



## Question 10(a)



Question 10(b)

starting temperature of the acid in °C	
highest temperature reached in °C	
temperature rise in °C	16.4