

Paper Reference(s) 4CH1/1C 4SD0/1C  
Pearson Edexcel International GCSE (9–1)

Chemistry  
Science (Double Award) 4SD0  
PAPER: 1C

Time: 2 hours plus your additional time allowance

Diagram Booklet

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

Surname					
Other names					
Centre Number					
Candidate Number					

## 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.**

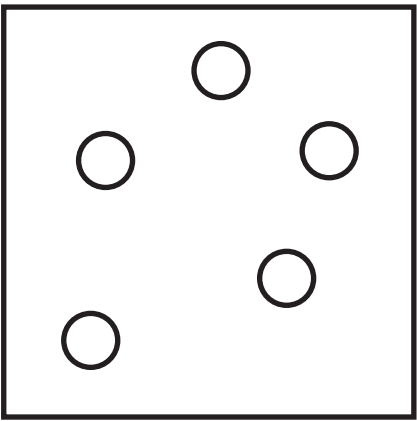
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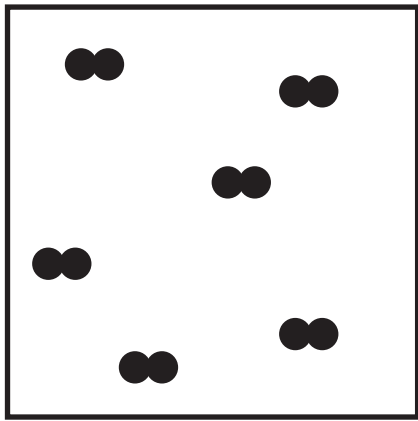
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## Question 1(a)

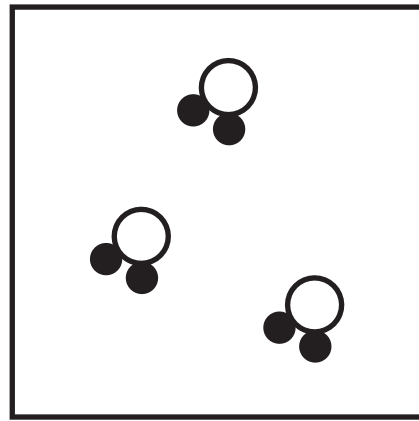
A



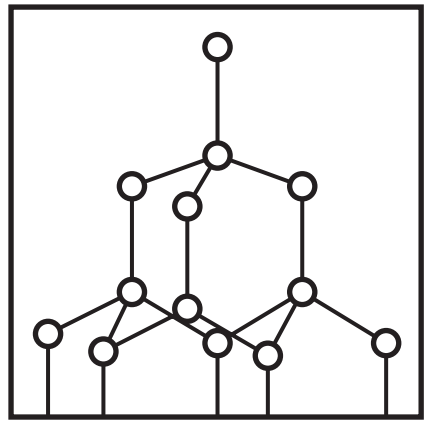
B



C



D

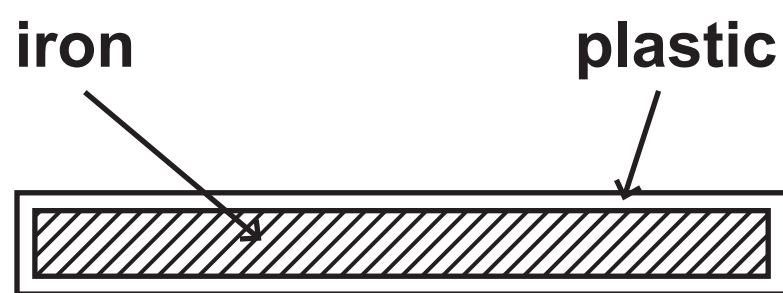
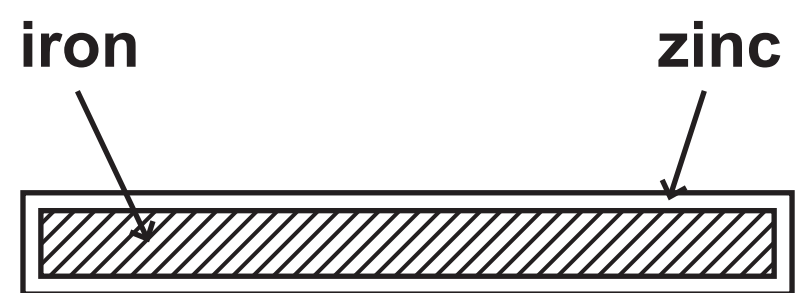


**Question 2(b)(i)**

<b>Element</b>	<b>Description of reaction with iron wool</b>
<b>fluorine</b>	
<b>chlorine</b>	does not need heating reacts quickly
<b>bromine</b>	needs heating reacts slowly
<b>iodine</b>	needs heating reacts very slowly

**Question 2(b)(i)**

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<b>fluorine</b>	
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**Question 3(b)****Method A****Method B**

Question 4(a)

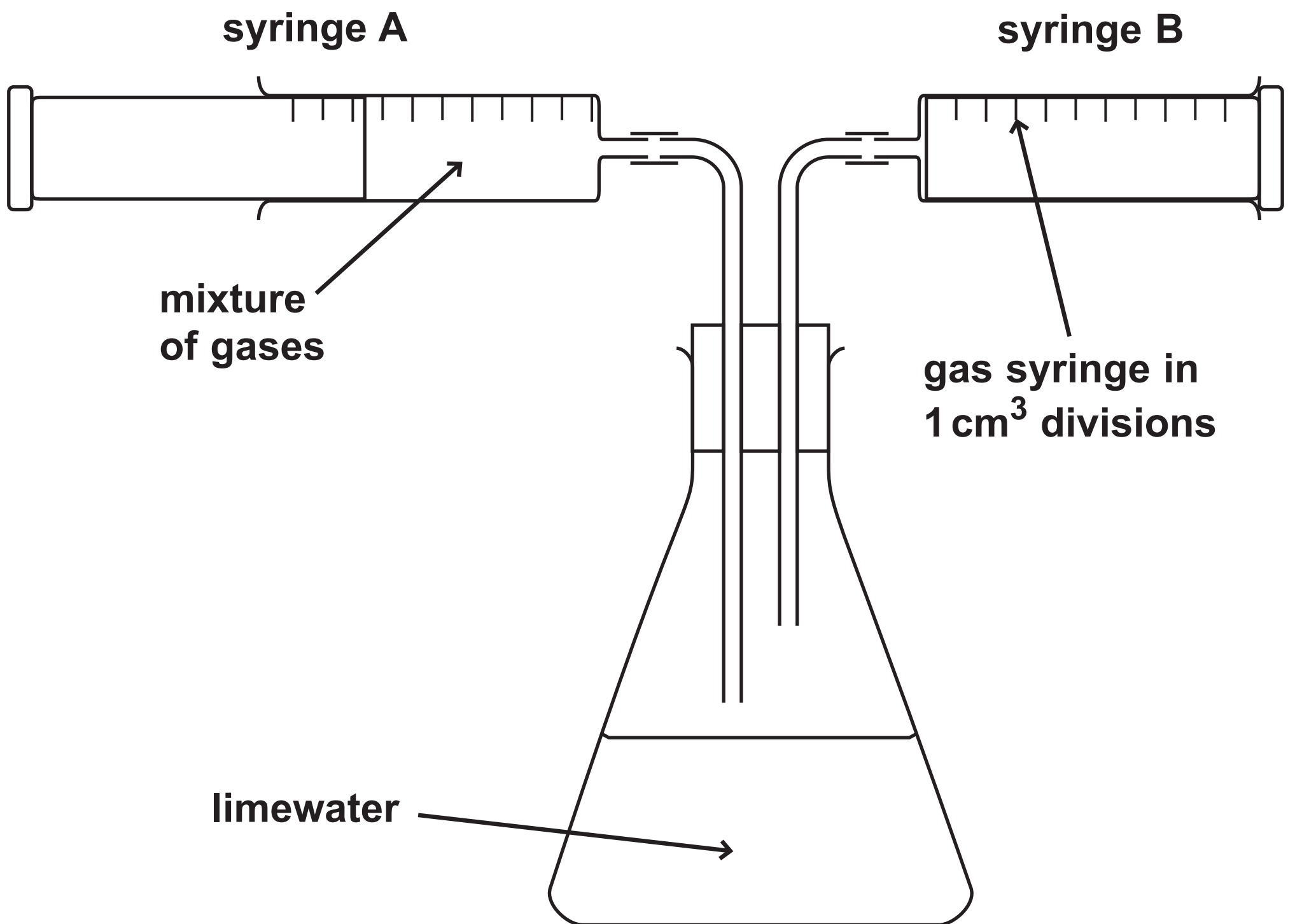
	Species F	Species G	Species H
number of protons	7	7	7
number of neutrons	7	8	7
number of electrons	7	7	10



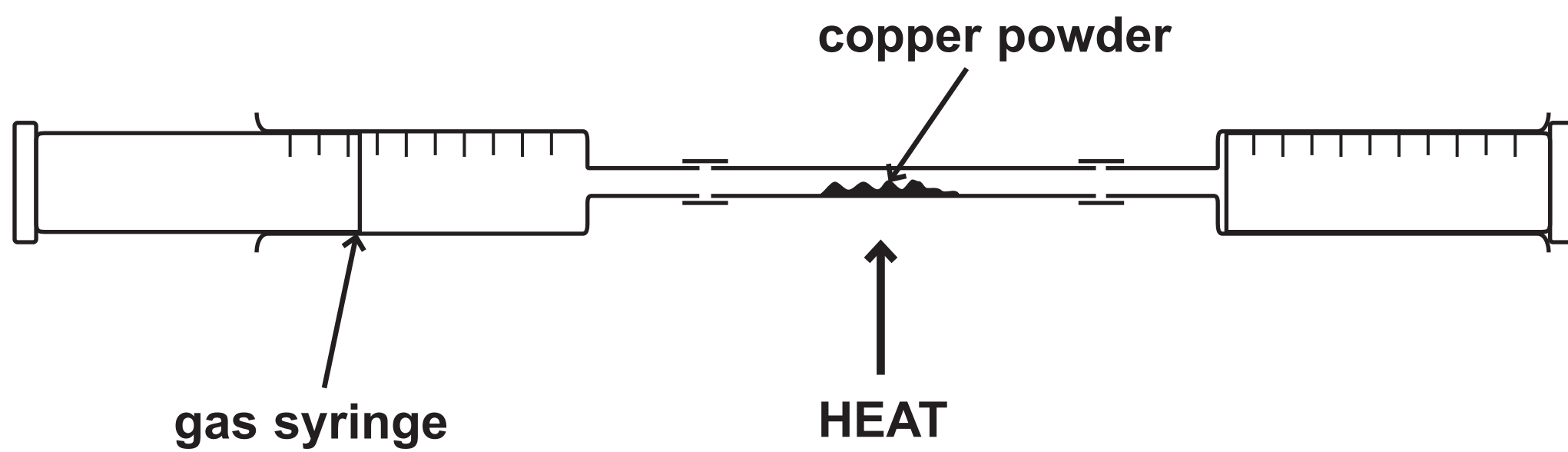
**Question 4(b)**

<b>Mass number</b>	<b>Percentage (%)</b>
<b>12</b>	<b>98·930</b>
<b>13</b>	<b>1·070</b>

## Question 5

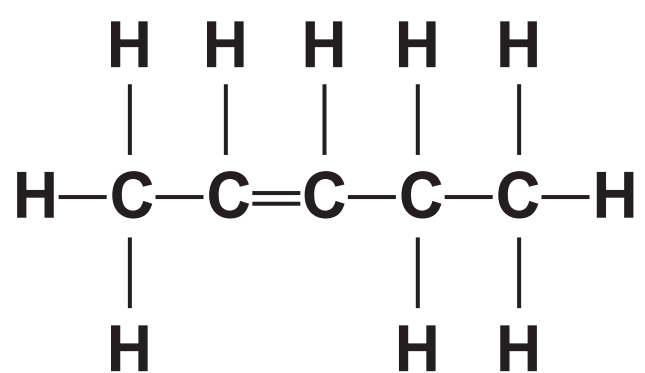


## Question 5(c)

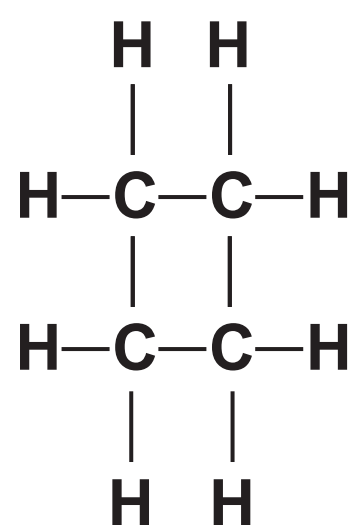


## Question 6(a)

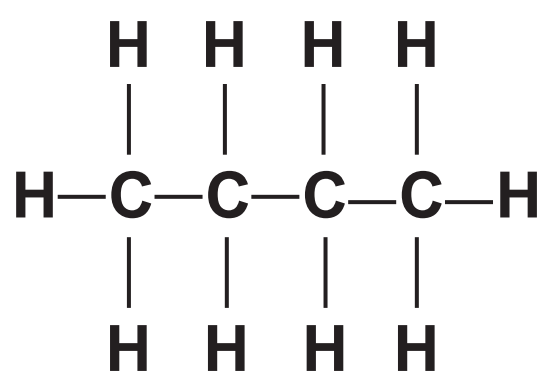
Compound U



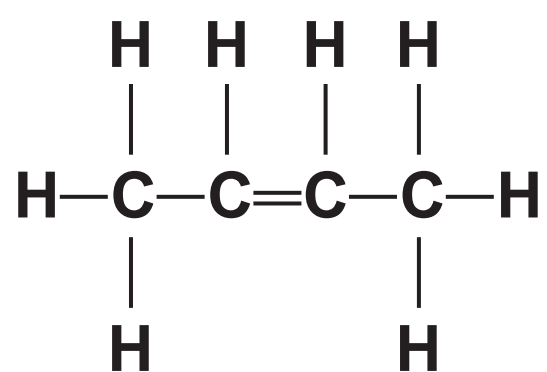
Compound V



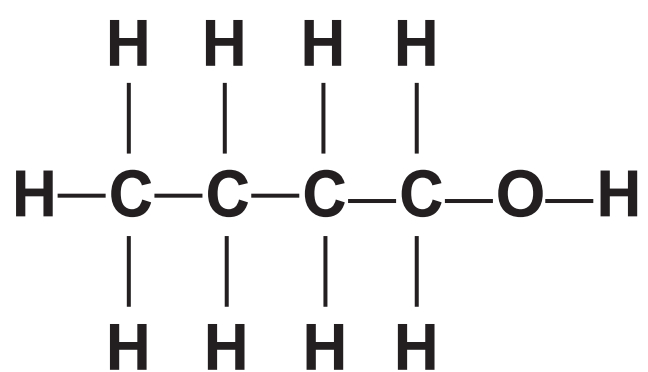
Compound W



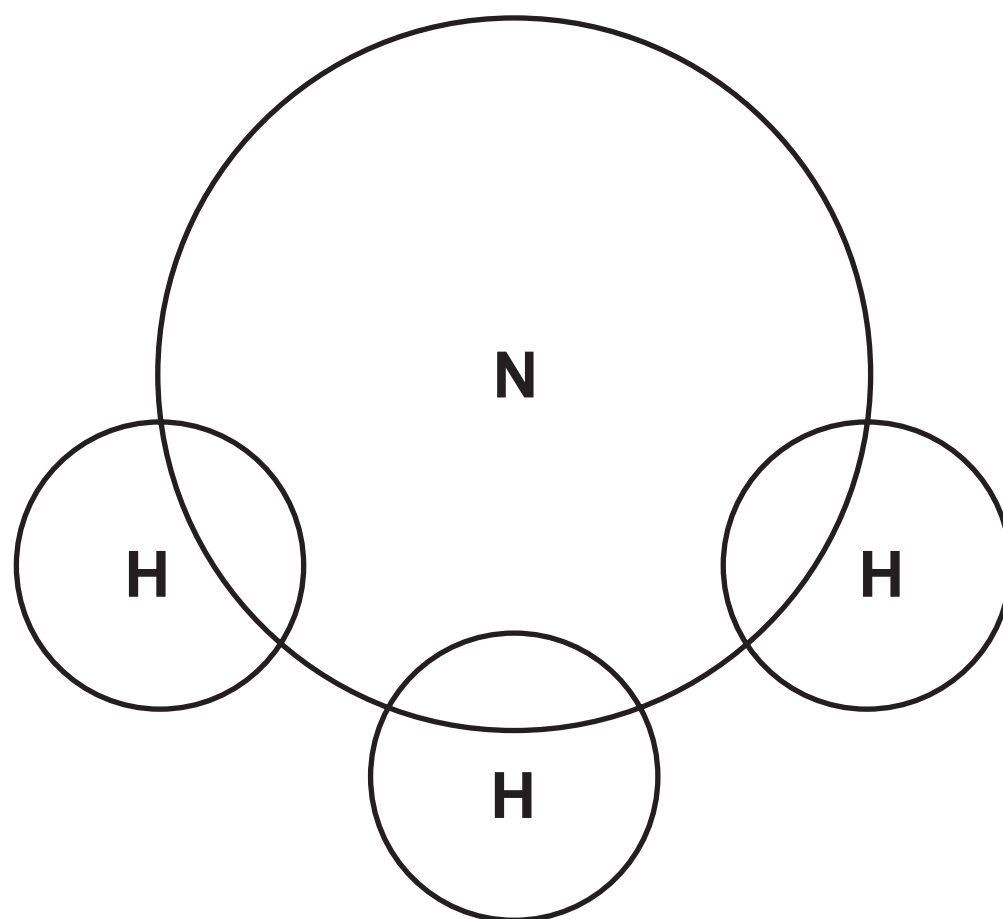
Compound X



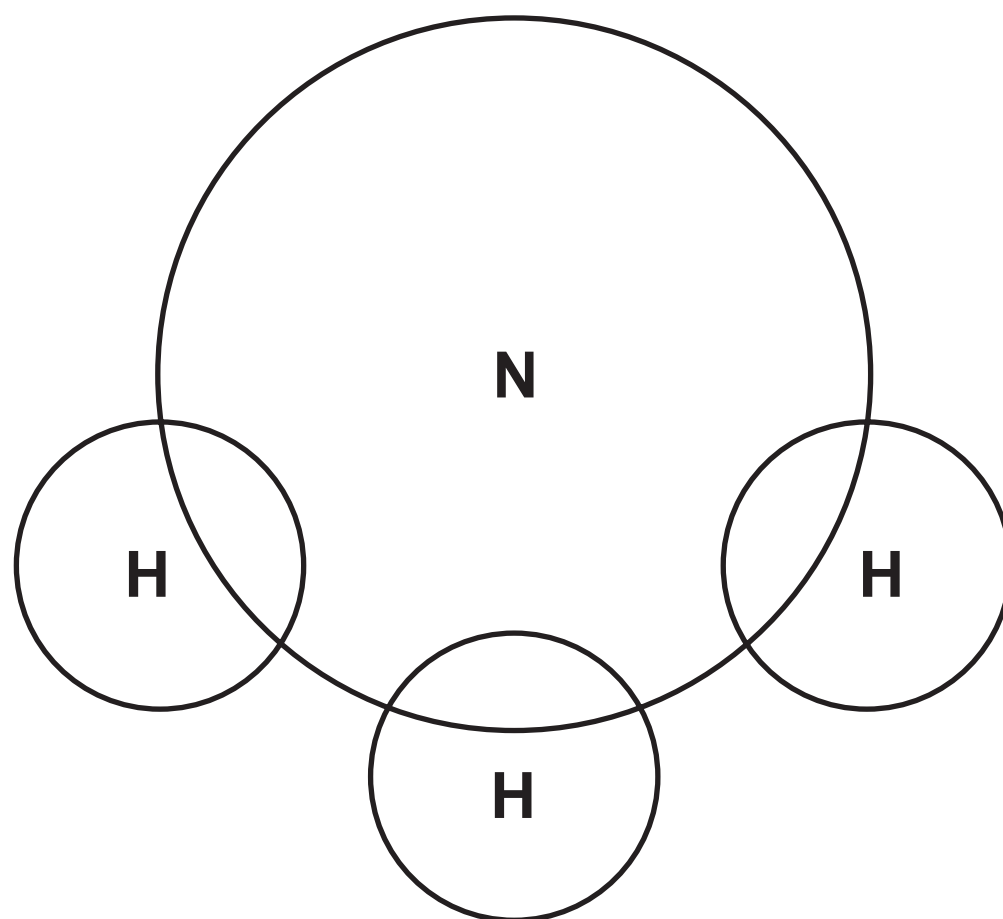
Compound Y



## Question 7(c)(i)



## Question 7(c)(i)

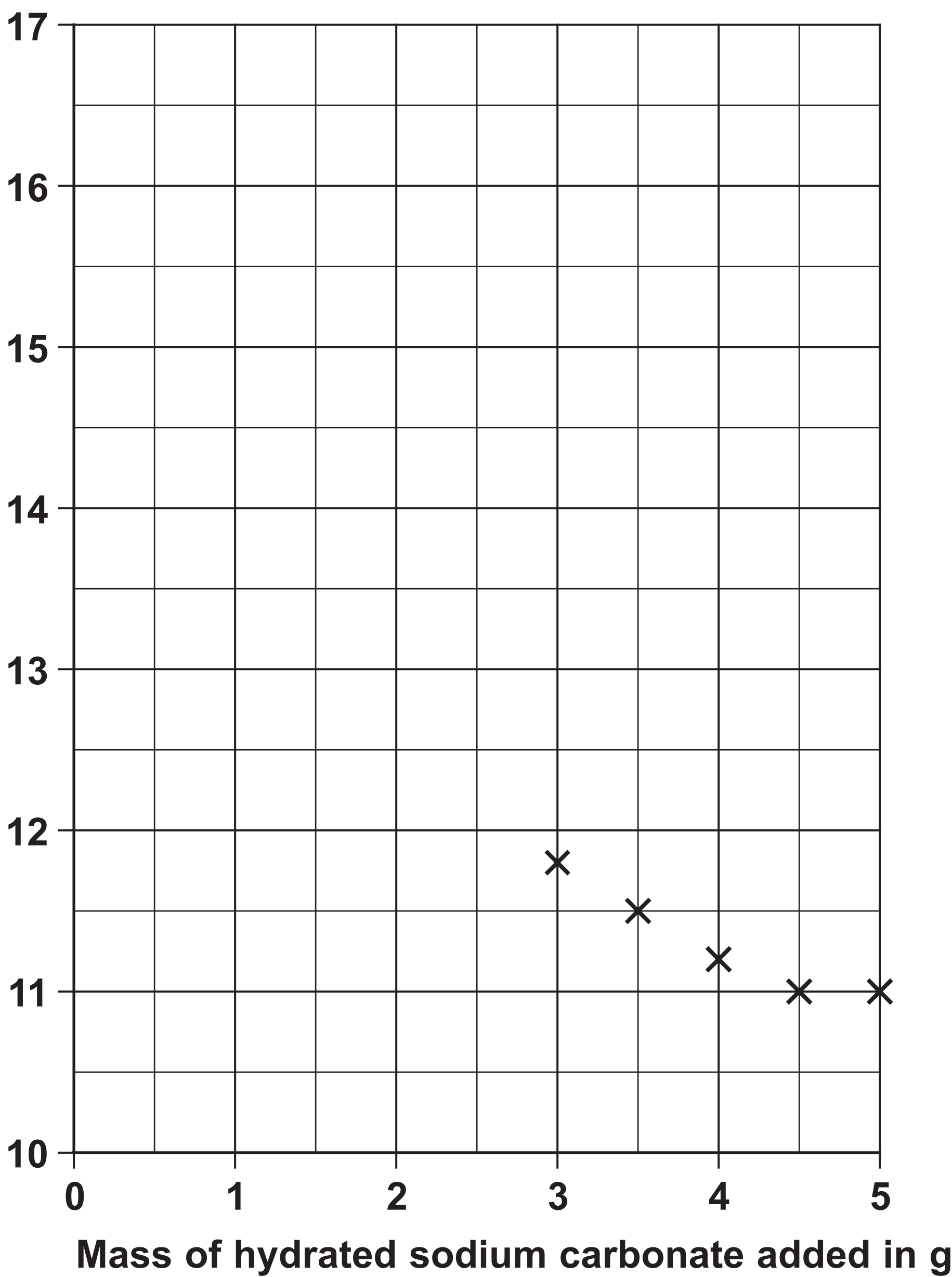


Question 9(a)

Mass of sodium carbonate added in g	Temperature in °C
0·0	17·0
0·5	15·6
1·0	14·1
1·5	13·0
2·0	12·9
2·5	12·2
3·0	11·8
3·5	11·5
4·0	11·2
4·5	11·0
5·0	11·0

Question 9(a)

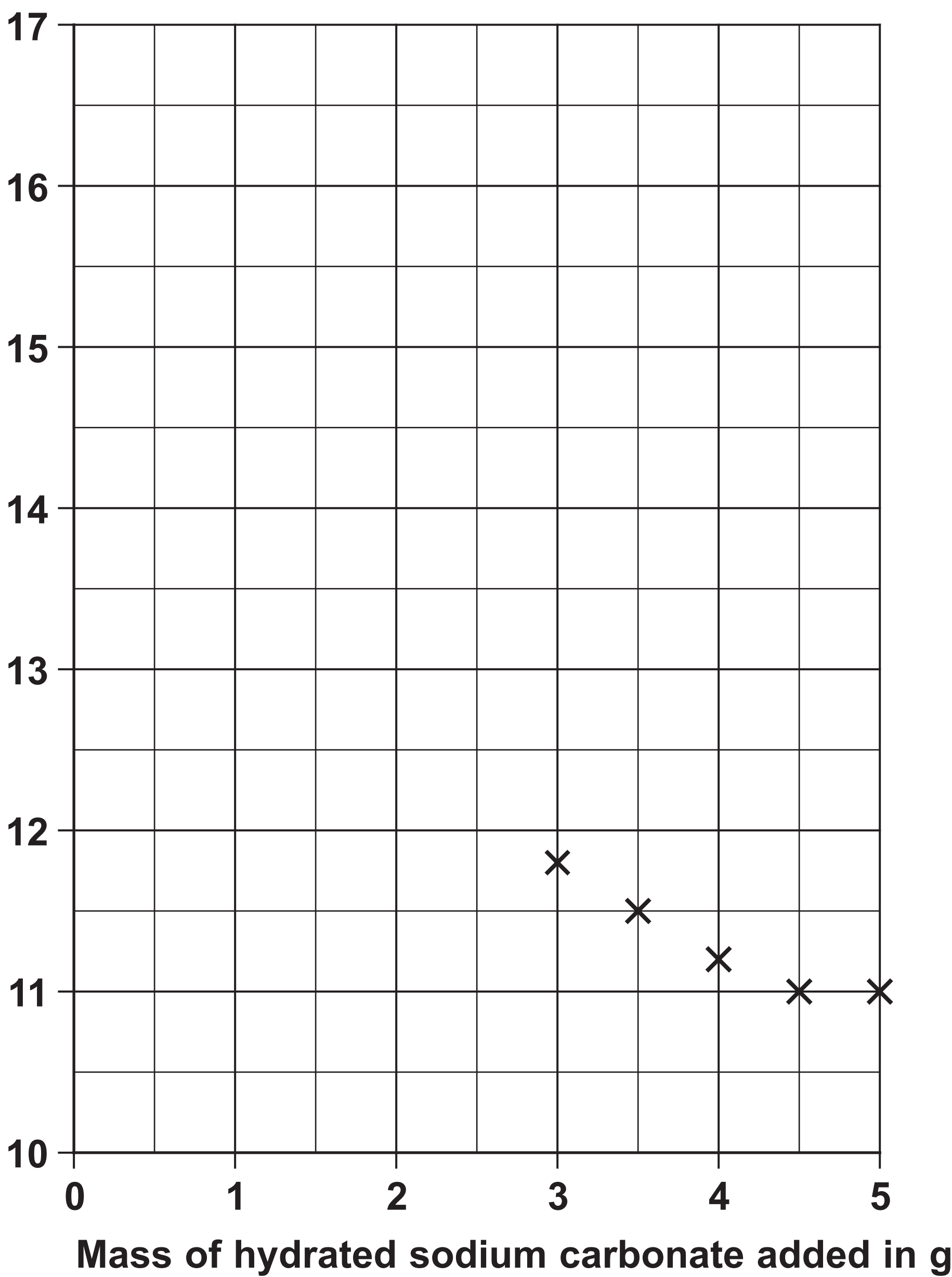
Temperature in °C



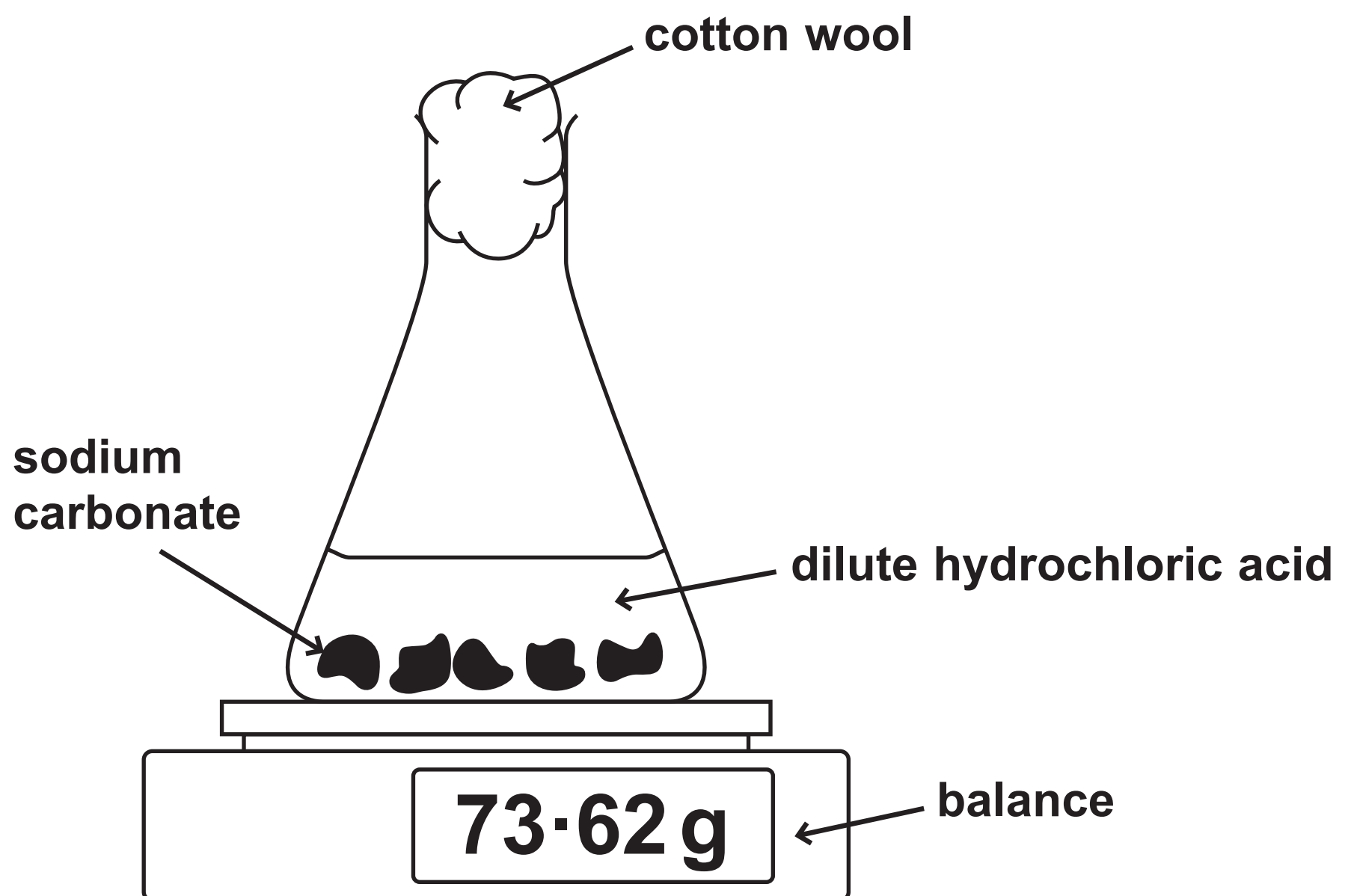


Question 9(a)

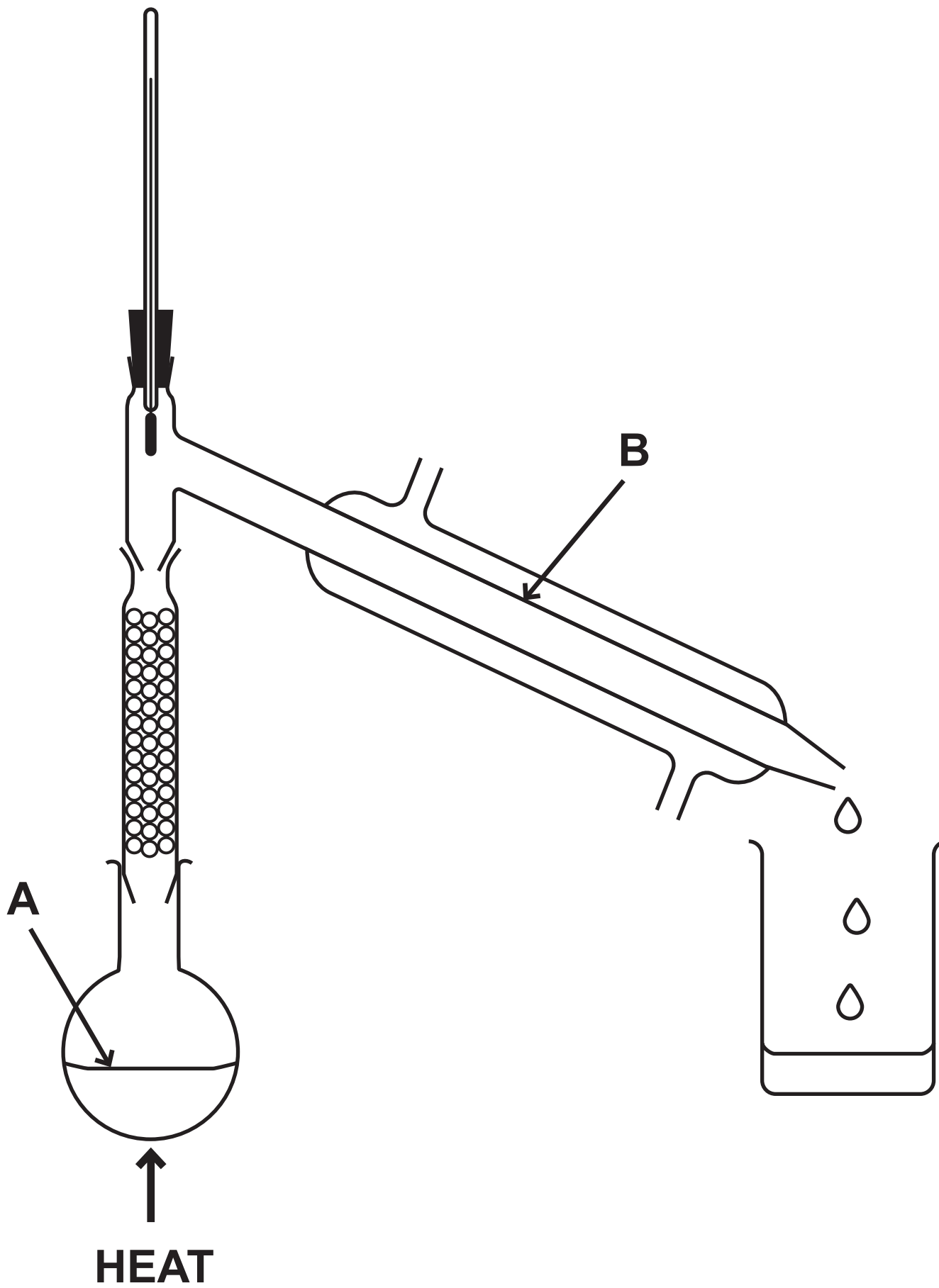
Temperature in °C



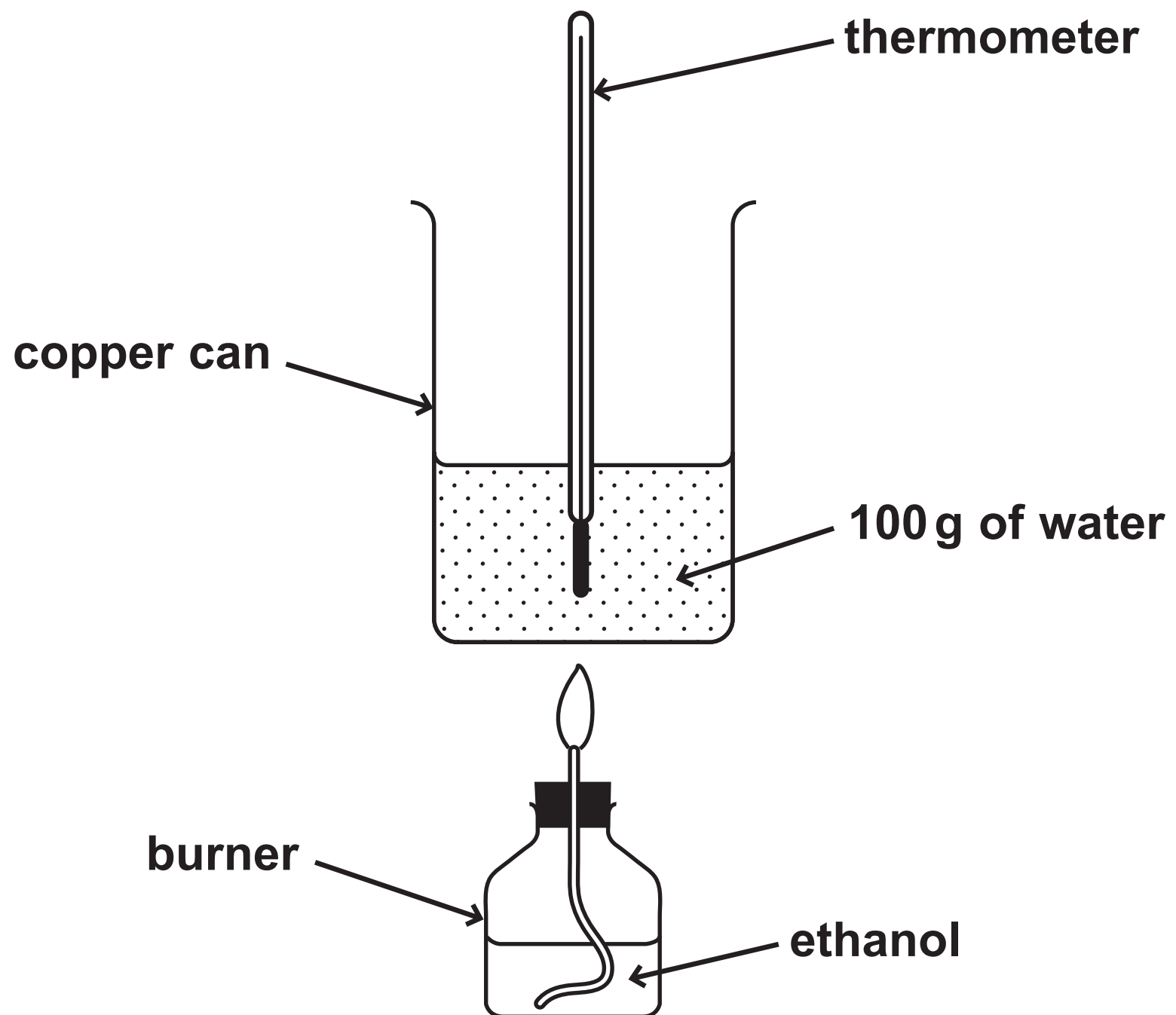
## Question 9(b)



## Question 10



## Question 10(d)



Question 11(a) and 11(a)(ii)

Table 1

Metal	Metal sulfate	Does a reaction occur?
manganese	chromium sulfate	yes
tin	cadmium sulfate	no
chromium	cadmium sulfate	yes

most reactive



least reactive

manganese

Question 11(a) and 11(a)(ii)

Table 1

Metal	Metal sulfate	Does a reaction occur?
manganese	chromium sulfate	yes
tin	cadmium sulfate	no
chromium	cadmium sulfate	yes

most reactive



least reactive

manganese

## Question 11(b)

Table 2

<b>Metal</b>	<b>Colour of metal</b>	<b>Colour of metal sulfate solution</b>
<b>copper</b>	<b>brown</b>	<b>blue</b>
<b>iron</b>	<b>dark grey</b>	<b>green</b>
<b>magnesium</b>	<b>silvery</b>	<b>colourless</b>
<b>zinc</b>	<b>light grey</b>	<b>colourless</b>