

Paper Reference(s) 1CH0/2F  
Pearson Edexcel Level 1/Level 2 GCSE (9–1)

Chemistry  
PAPER 2  
Foundation Tier

Tuesday 13 June 2023 – Morning

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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FIGURE 1

compound A	compound B	compound C	compound D
$\begin{array}{c} \text{H} \\   \\ \text{O} \\   \\ \text{H} \end{array}$	$\text{O}=\text{C}=\text{O}$	$\begin{array}{c} \text{H} \\   \\ \text{S} \\   \\ \text{H} \end{array}$	$\begin{array}{c} \text{H} \\   \\ \text{H}-\text{C}-\text{H} \\   \\ \text{H} \end{array}$

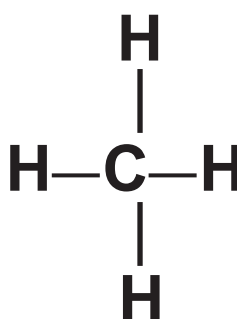
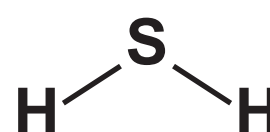
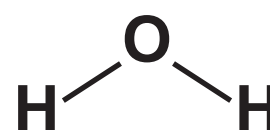
## Question 1(b)

**name of  
compound**

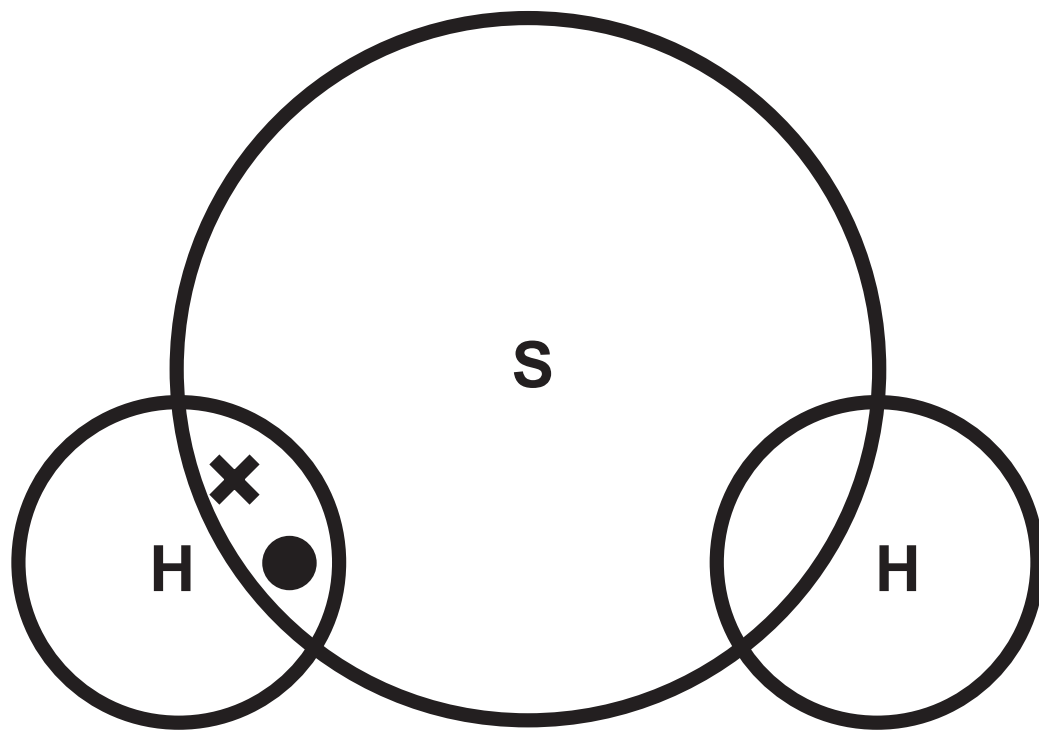
carbon dioxide

methane

**structure of  
molecule**

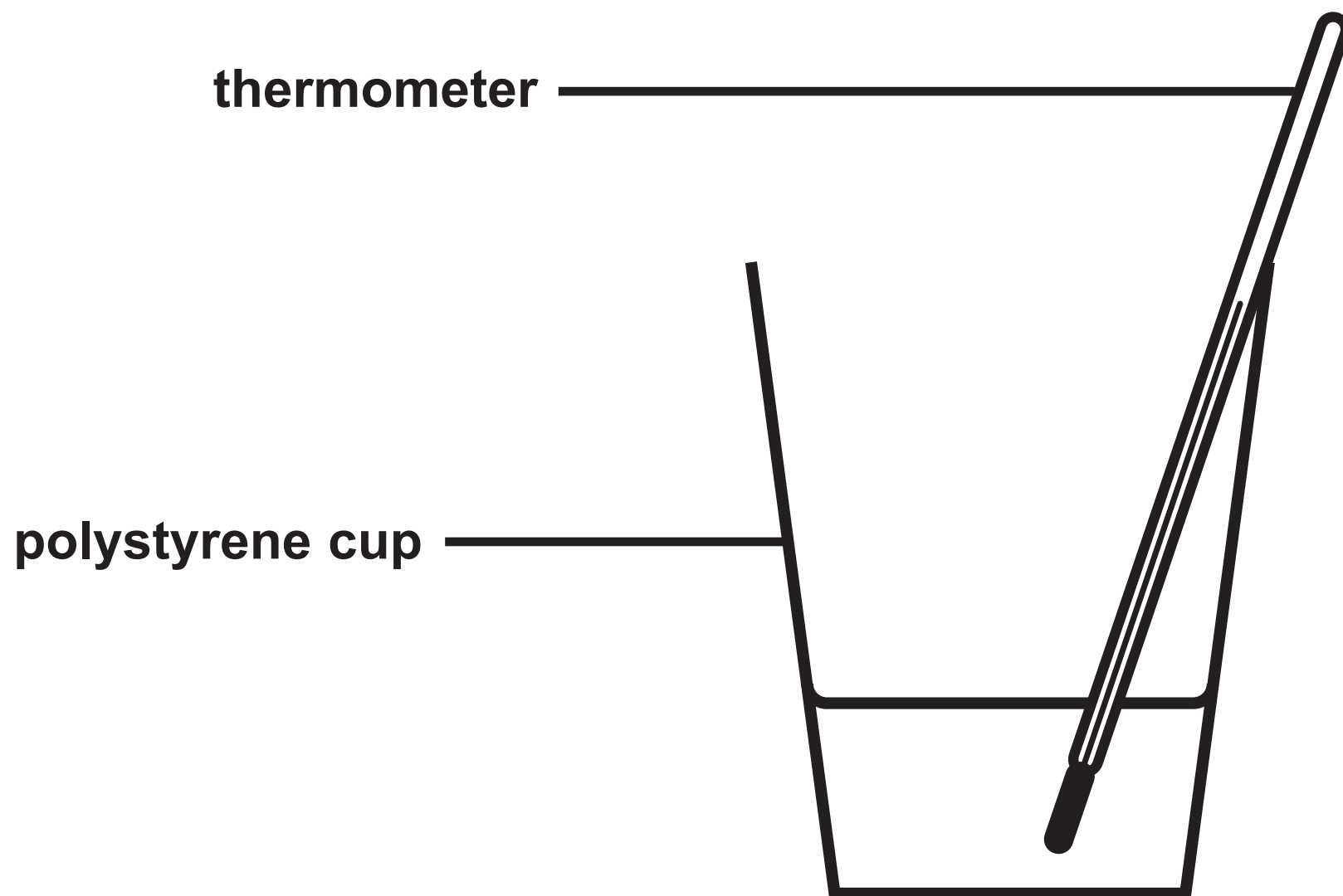


## Question 1(c)



## Question 2

**FIGURE 3**





Question 2(b)

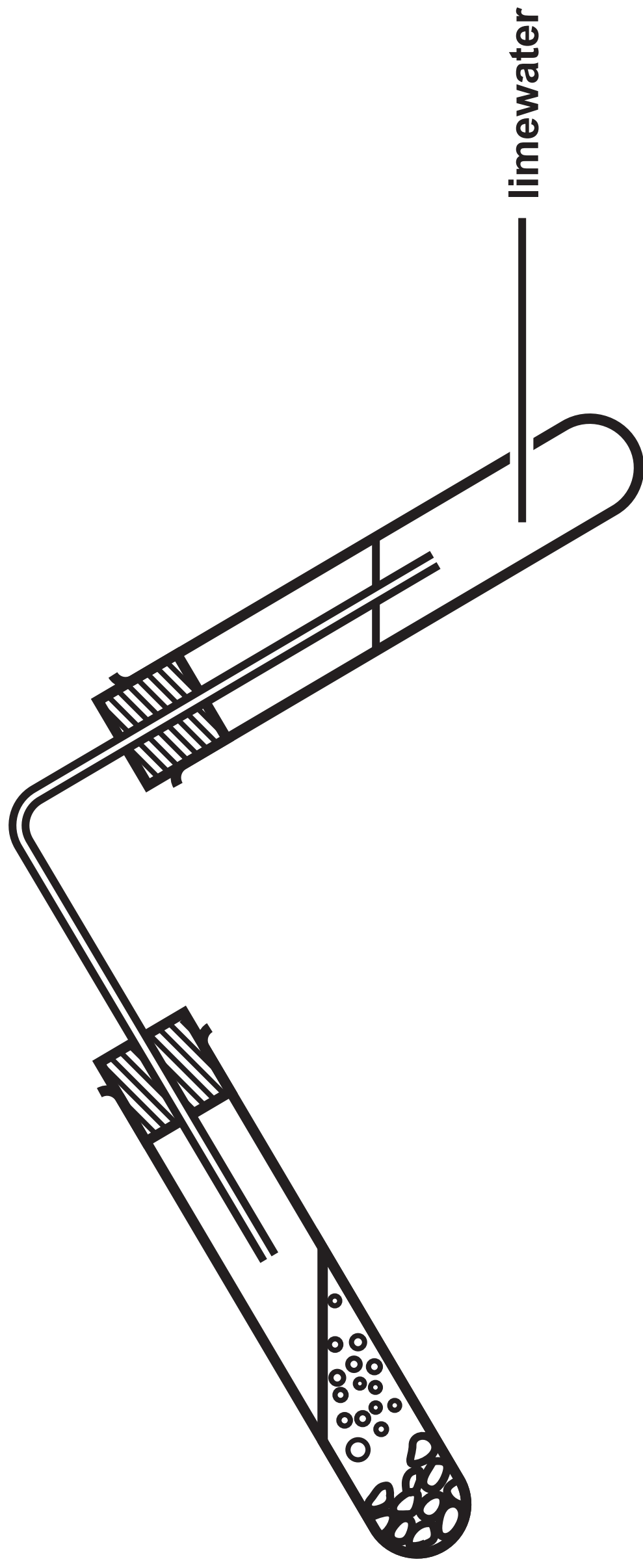
FIGURE 5

salt	starting temperature of the water in °C	temperature of the mixture after 2 minutes in °C	temperature change in °C
A	20·5	25·6	+5·1
B	20·5	19·8	−0·7
C	20·5	29·2	

## Question 3(a)(ii)

**metal ion****copper ion****potassium ion****sodium ion****flame colour****blue-green****lilac****orange-red****red****yellow**

FIGURE 6



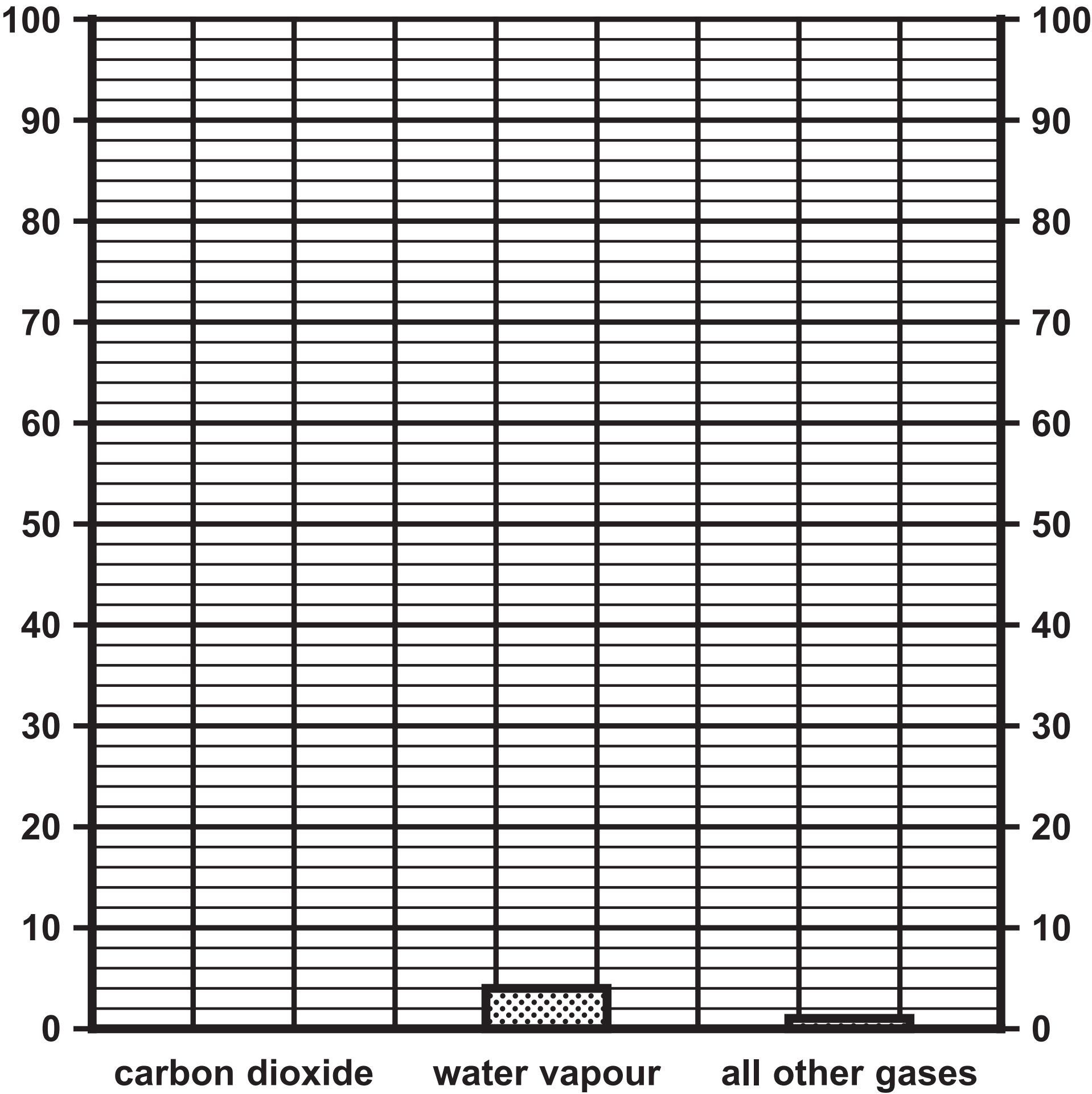
Question 4

FIGURE 7

Earth’s atmosphere 3 billion years ago		Earth’s atmosphere today	
gas	%	gas	%
carbon dioxide	95	nitrogen	78·00
water vapour	4	oxygen	21·00
all other gases	1	carbon dioxide	0·04
		all other gases including water vapour	0·96
average surface temperature 3 billion years ago		average surface temperature today	
above 400 °C		20 °C	

Question 4(a)

percentage of gas in  
Earth’s early atmosphere



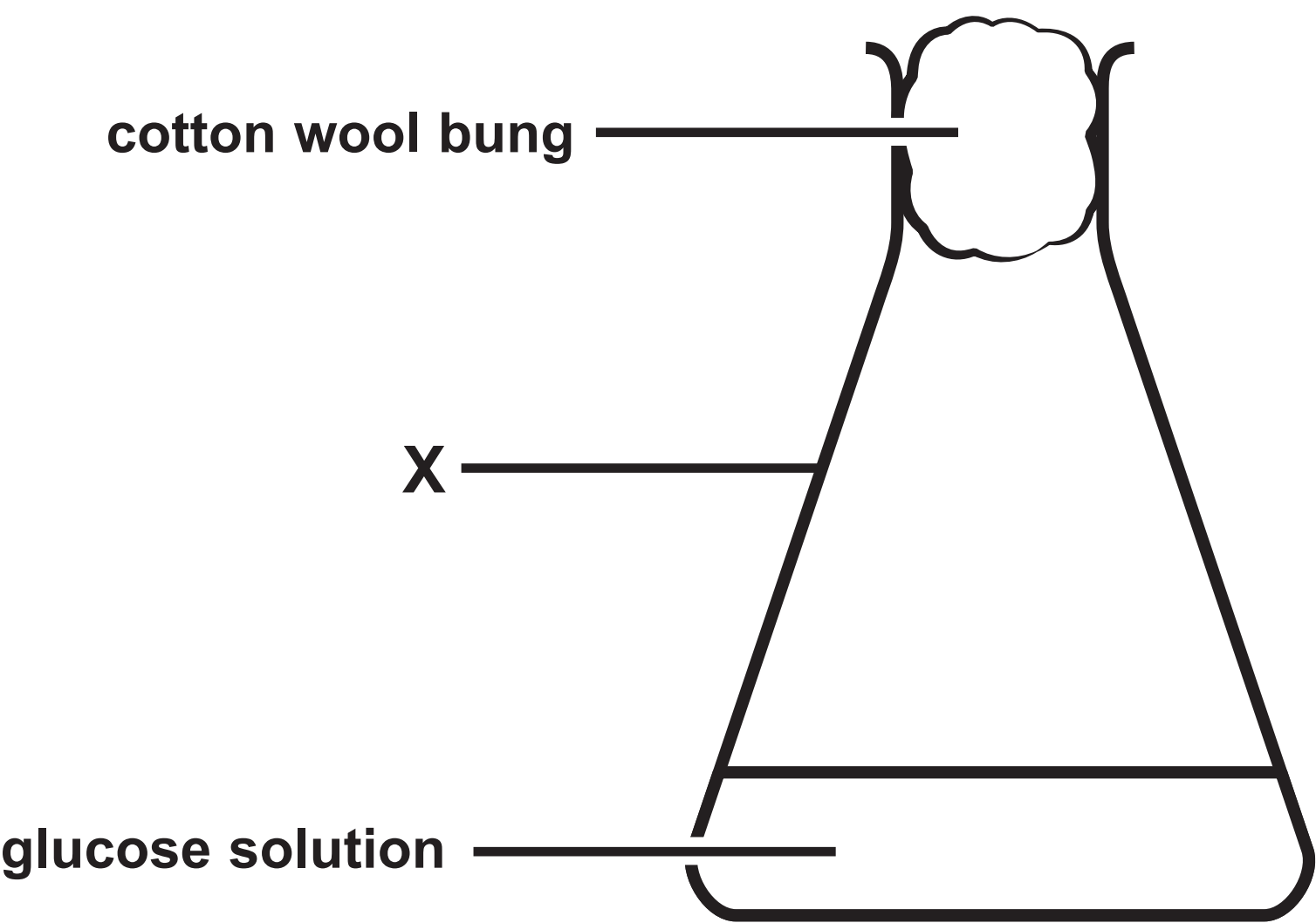
Question 4(d)

FIGURE 8

	amount of carbon dioxide in ppm
June 2001	371·17
June 2021	416·56

Question 5

FIGURE 9



Question 5(d)

Diagram A

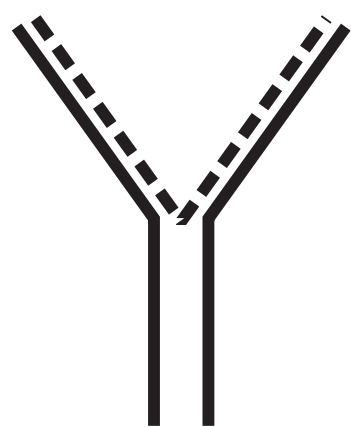


Diagram C

dilute solution of ethanol

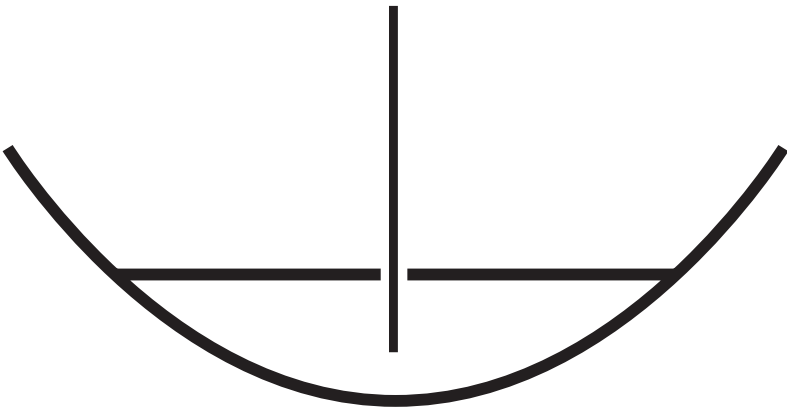


Diagram B

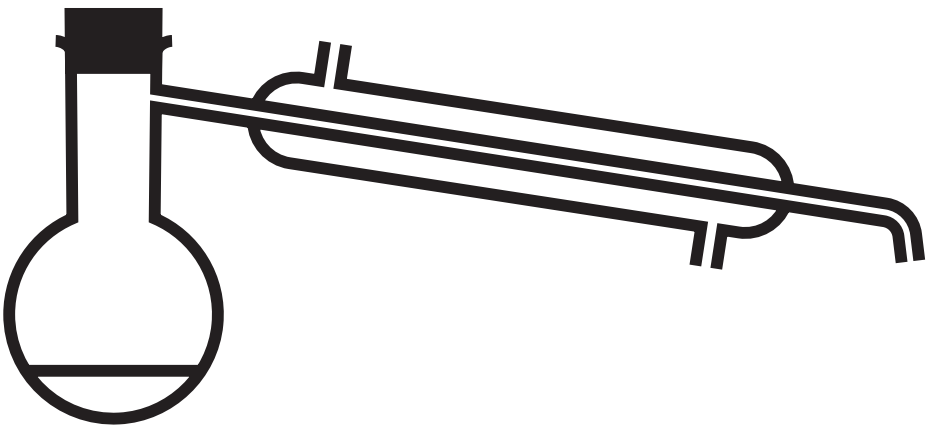
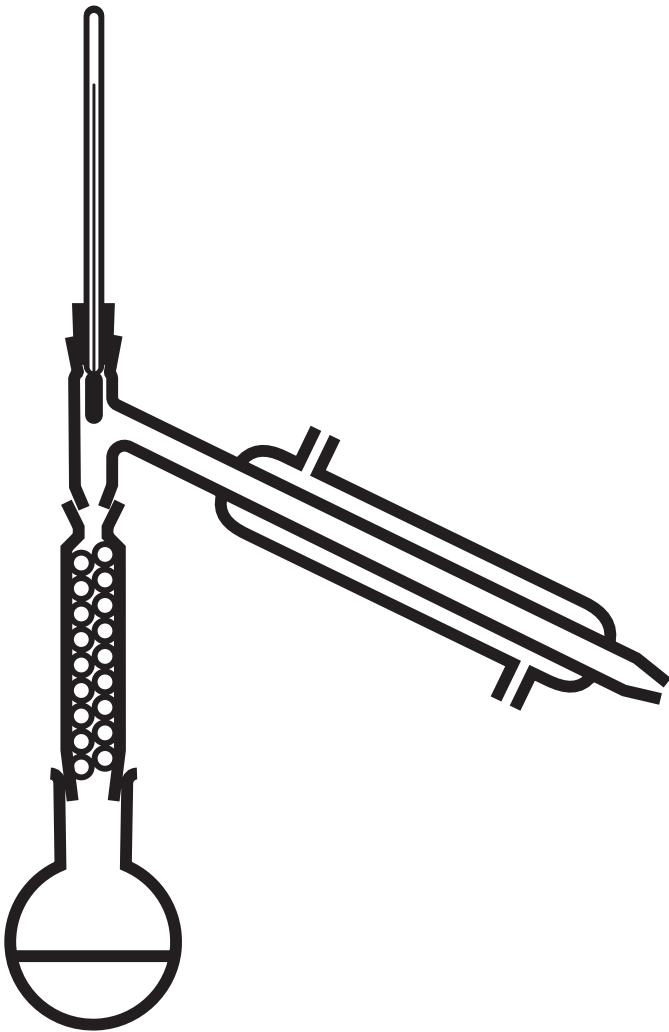


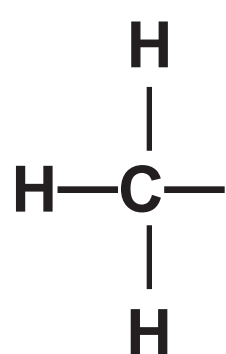
Diagram D



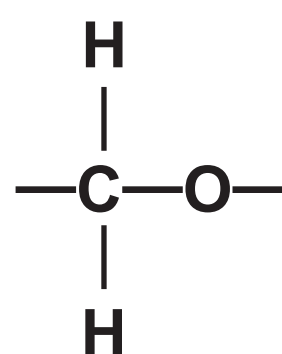


## Question 5(f)

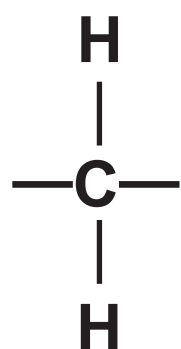
Structure A



Structure C



Structure B



Structure D



Question 6(b)(v)

Diagram A

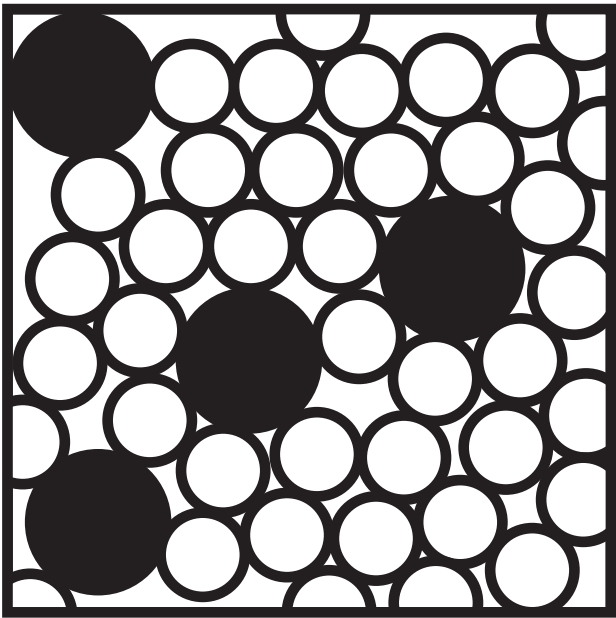


Diagram B

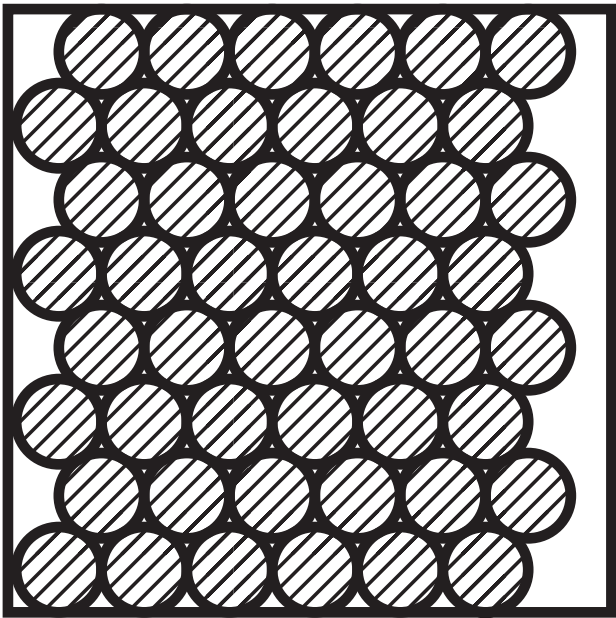


Diagram C

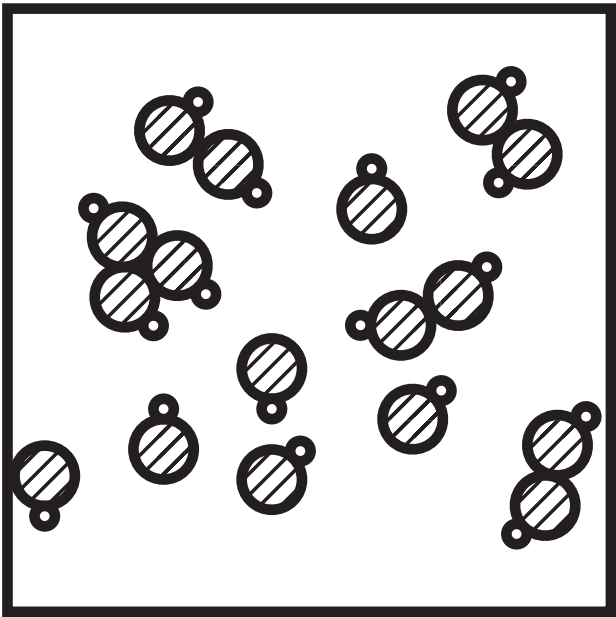
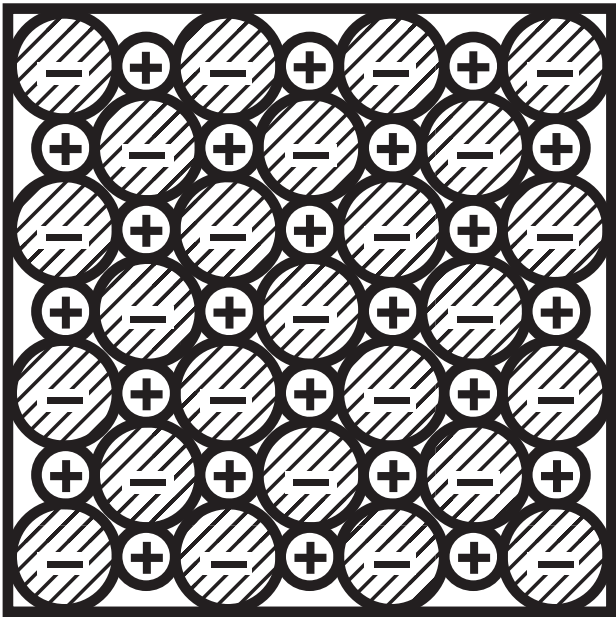


Diagram D



Question 6(b)(vi)

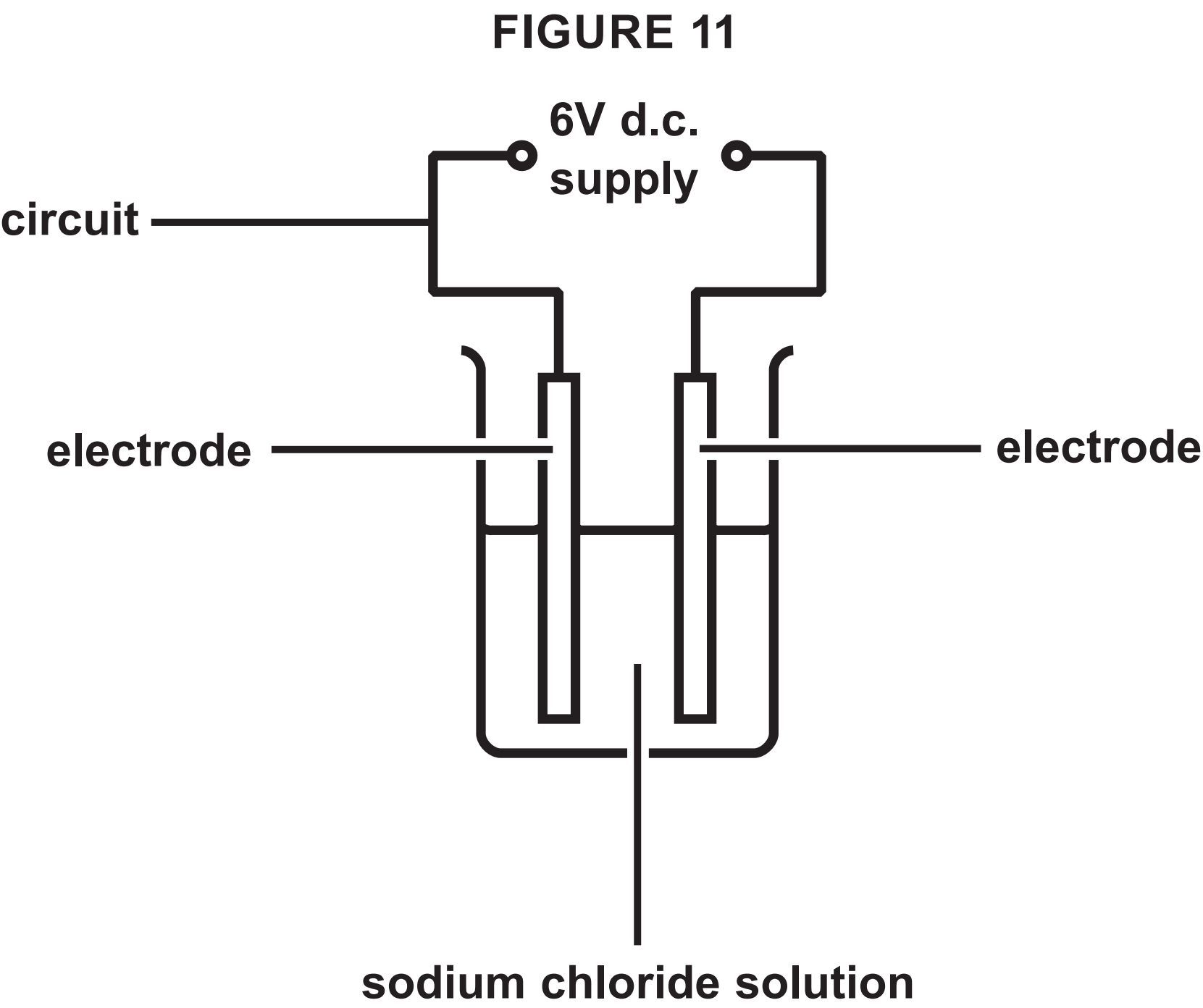
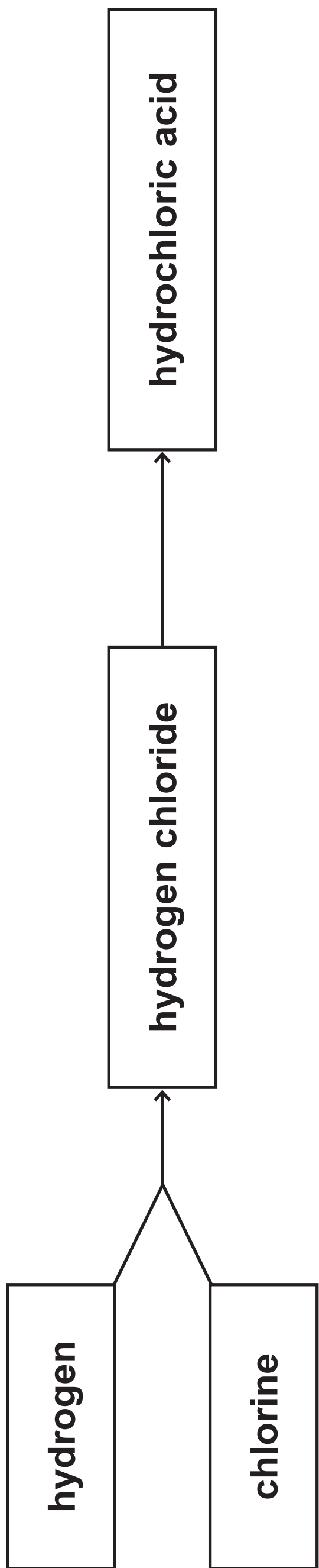


FIGURE 12

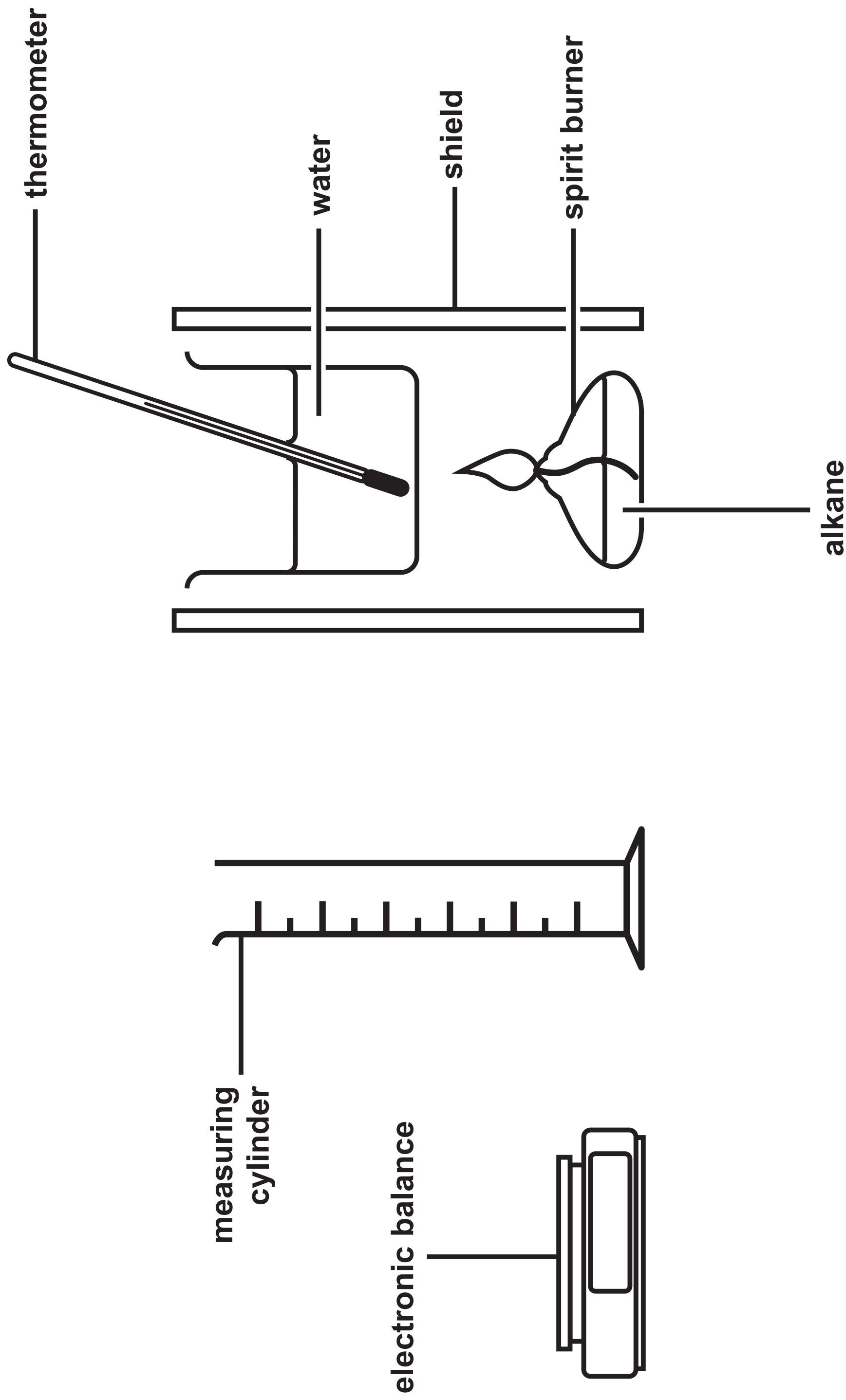


### Question 7(b)(i)

### FIGURE 13

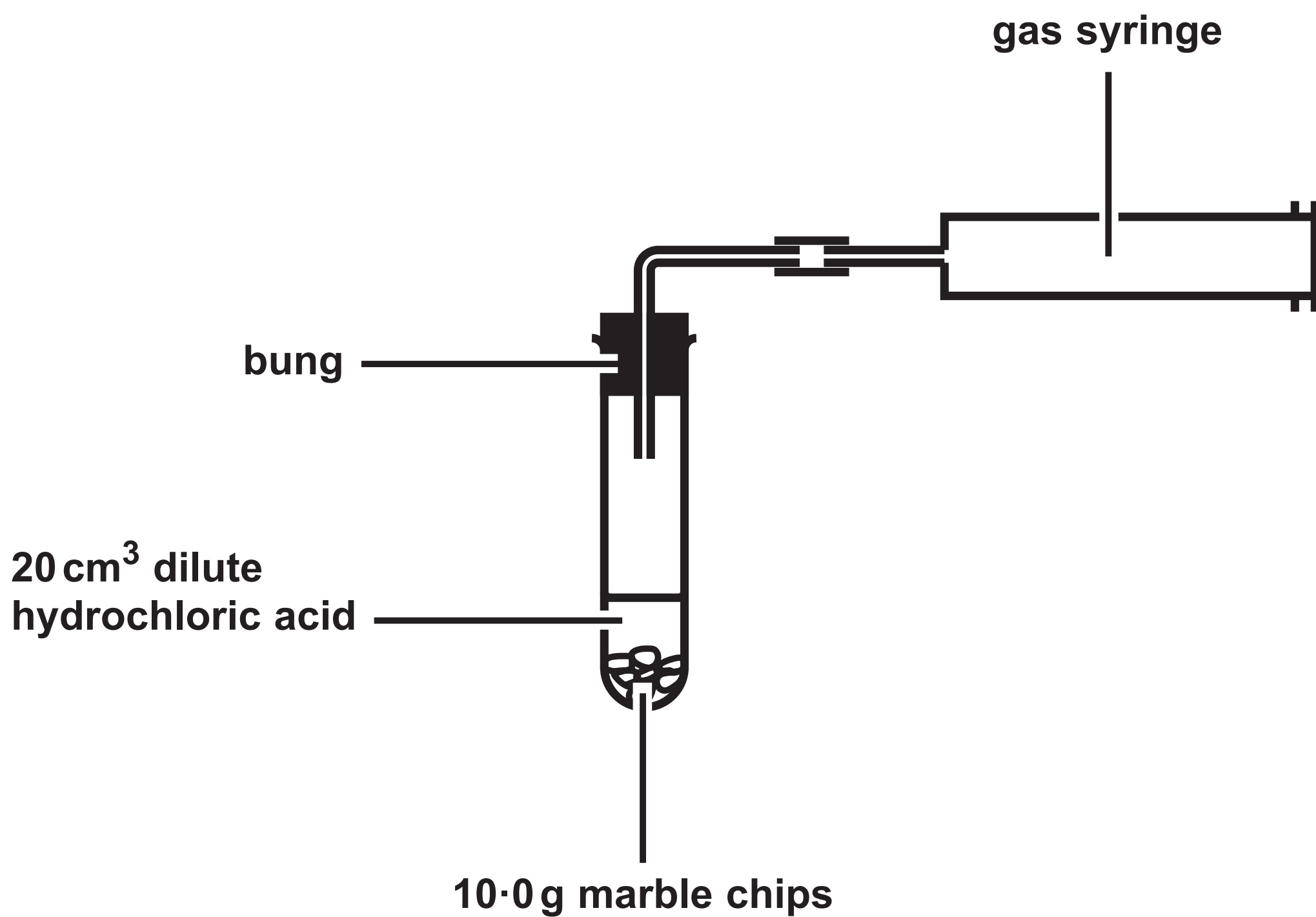
alkane	formula	structure of one molecule
propane	C <sub>3</sub> H <sub>8</sub>	
butane		<pre>      H   H   H   H                     H — C — C — C — C — H                           H   H   H   H</pre>
pentane	C <sub>5</sub> H <sub>12</sub>	<pre>      H   H   H   H   H                         H — C — C — C — C — C — H                               H   H   H   H   H</pre>
hexane	C <sub>6</sub> H <sub>14</sub>	<pre>      H   H   H   H   H   H                             H — C — C — C — C — C — C — H                                   H   H   H   H   H   H</pre>

FIGURE 14



## Question 8

FIGURE 15



Question 8(a) and 8(c)

volume of  
gas in cm<sup>3</sup>

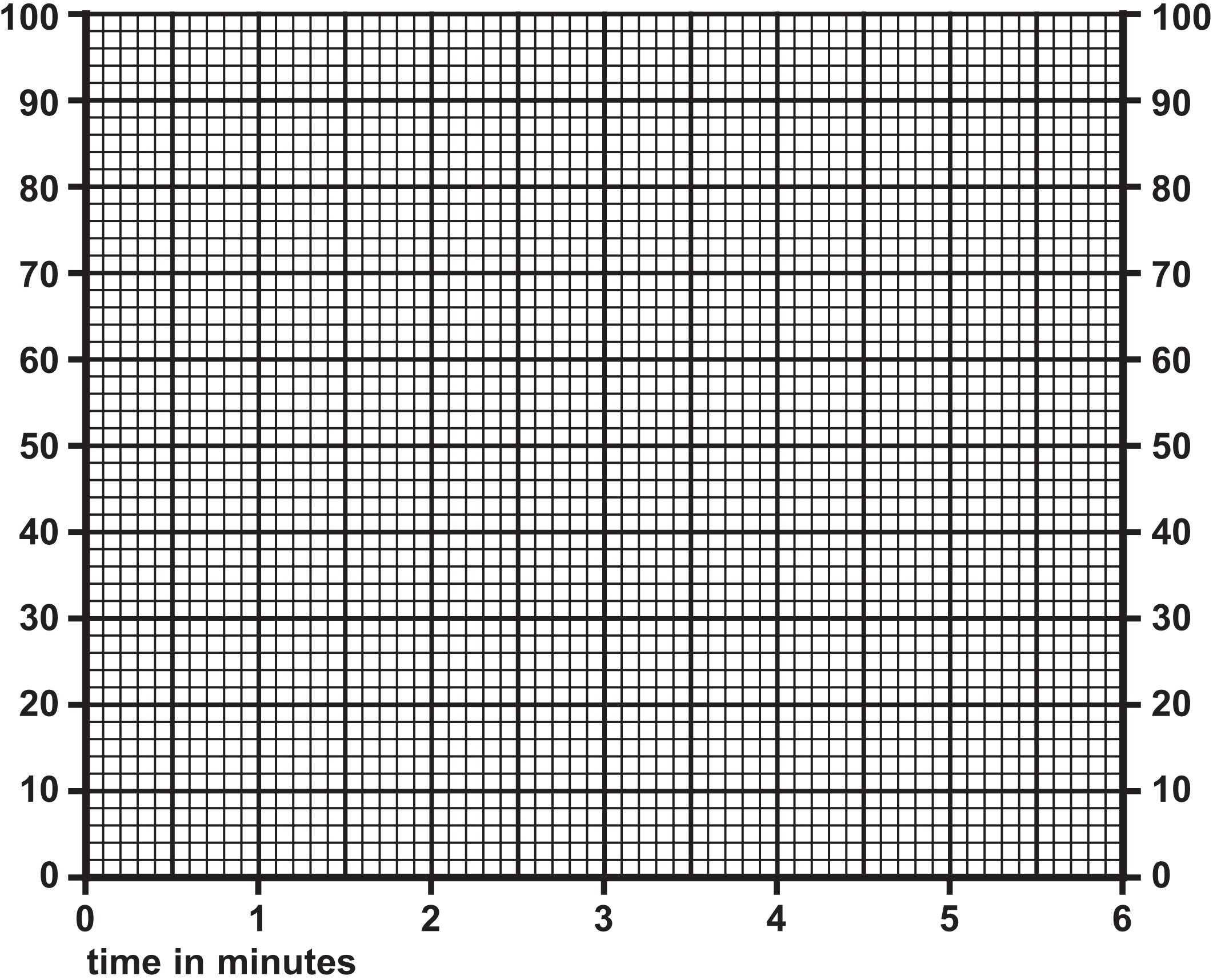




FIGURE 17

time interval	0 to 1 minute	1 to 2 minutes	2 to 3 minutes	3 to 4 minutes	4 to 5 minutes
rate of reaction in $\text{cm}^3 \text{min}^{-1}$	52	26		6	3

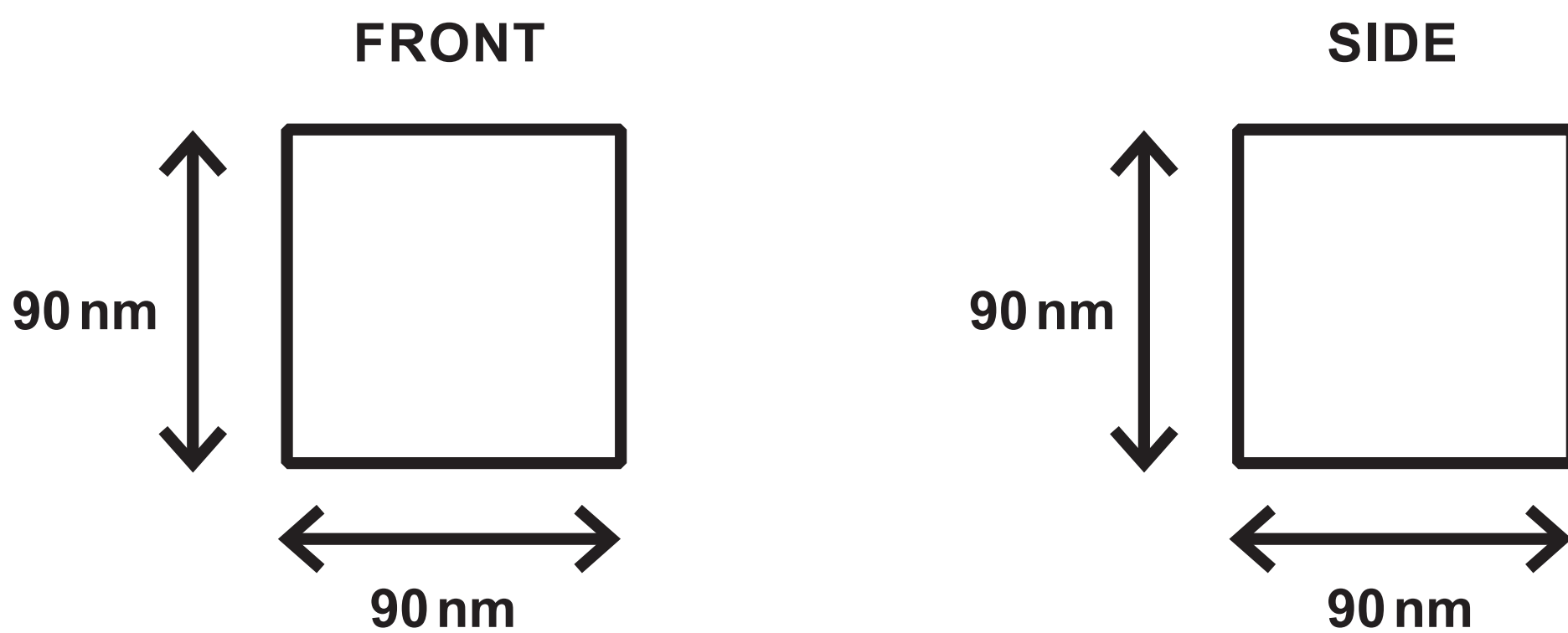
Question 9

FIGURE 18

group 1 metal	atomic number	relative atomic mass
lithium	3	7
sodium	11	23
potassium	19	39
rubidium	37	85
caesium	55	133

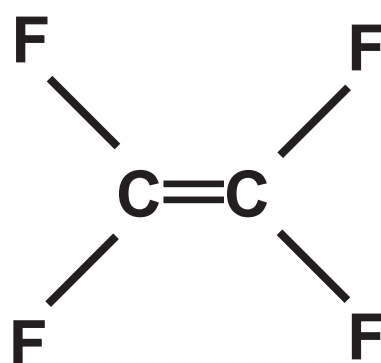
## Question 10(b)

FIGURE 19



## Question 10(c)

FIGURE 20



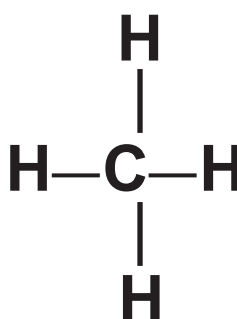
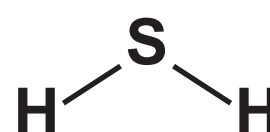
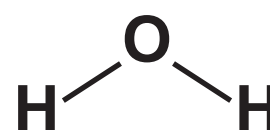
## Question 1(b)

**name of  
compound**

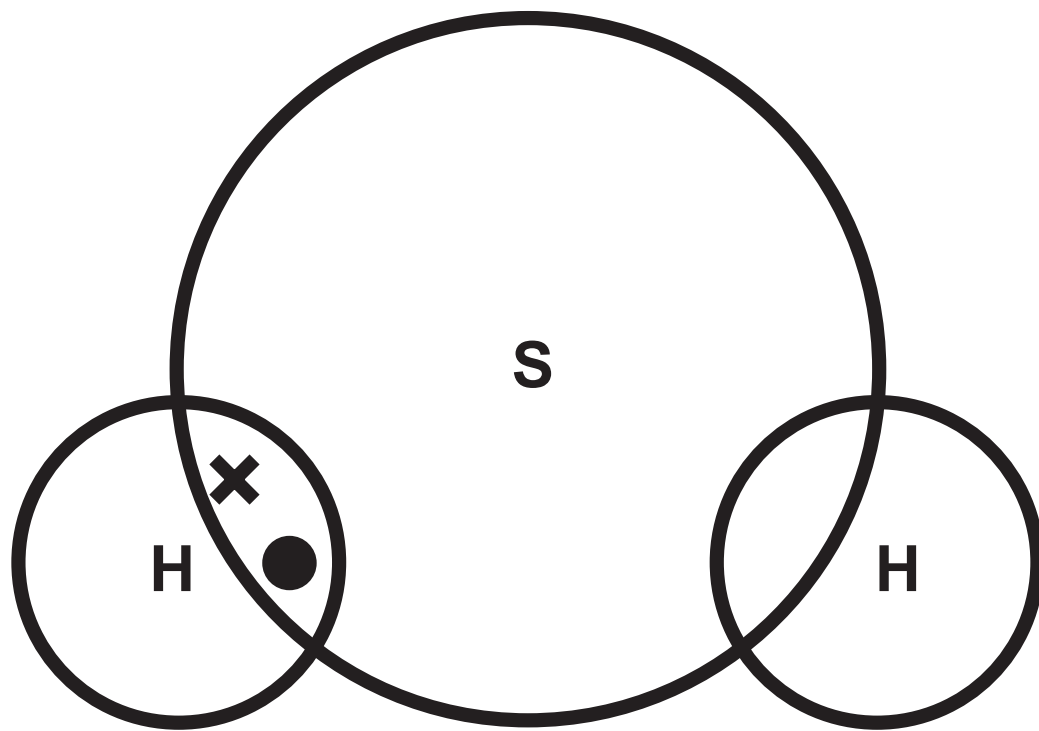
carbon dioxide

methane

**structure of  
molecule**



## Question 1(c)

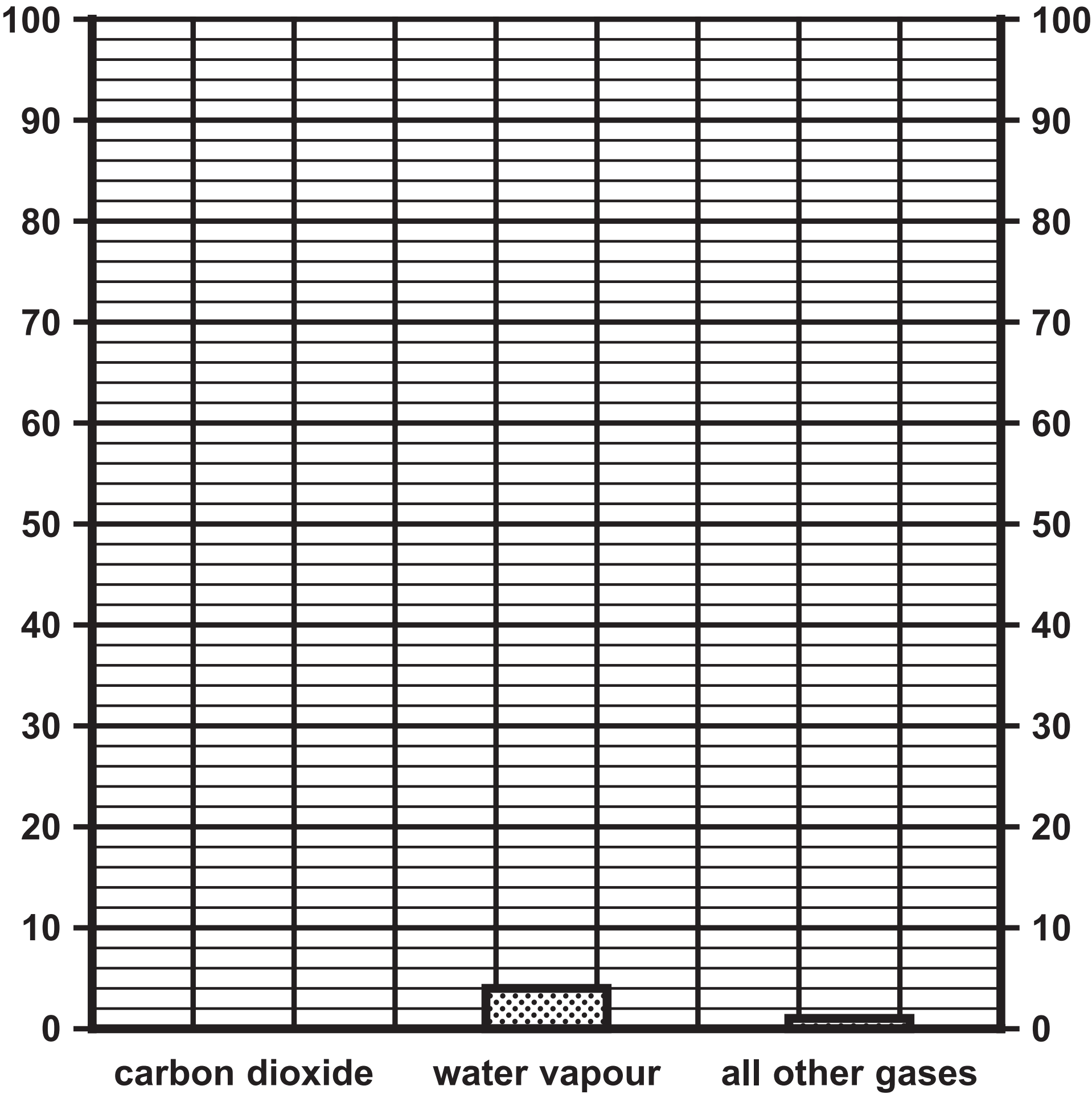


## Question 3(a)(ii)

**metal ion****copper ion****potassium ion****sodium ion****flame colour****blue-green****lilac****orange-red****red****yellow**

Question 4(a)

percentage of gas in  
Earth’s early atmosphere





### Question 7(b)(i)

### FIGURE 13

alkane	formula	structure of one molecule
propane	C <sub>3</sub> H <sub>8</sub>	
butane		<pre>      H   H   H   H                     H — C — C — C — C — H                           H   H   H   H</pre>
pentane	C <sub>5</sub> H <sub>12</sub>	<pre>      H   H   H   H   H                         H — C — C — C — C — C — H                               H   H   H   H   H</pre>
hexane	C <sub>6</sub> H <sub>14</sub>	<pre>      H   H   H   H   H   H                             H — C — C — C — C — C — C — H                                   H   H   H   H   H   H</pre>

## Question 8(a) and 8(c)

