

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.

Contents

Page

5	Question 1
6	Question 1(b)
7	Question 1(c)
8	Question 2
9	Question 2(b)
10	Question 3(a)(ii)
11	Question 3(c)(ii)
12	Question 4
13	Question 4(a)
14	Question 4(d)
15	Question 5
16	Question 5(d)
17	Question 5(f)
18	Question 6(b)(v)
19	Question 6(b)(vi)
20	Question 6(c)
21	Question 7(b)(i)
22	Question 7(b)(iii)
23	Question 8
24	Question 8(a) and 8(c)

(continued on the next page)

Contents continued.

25 Question 8(b)

26 Question 9

27 Question 10(b)

28 Question 10(c)

Spare Copies

29 Question 1(b)

30 Question 1(c)

31 Question 3(a)(ii)

32 Question 4(a)

33 Question 7(b)(i)

34 Question 8(a) and 8(c)

FIGURE 1

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

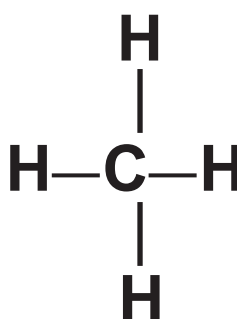
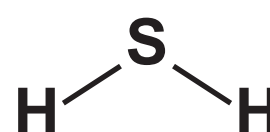
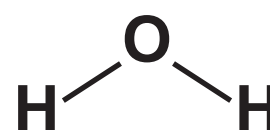
Question 1(b)

**name of
compound**

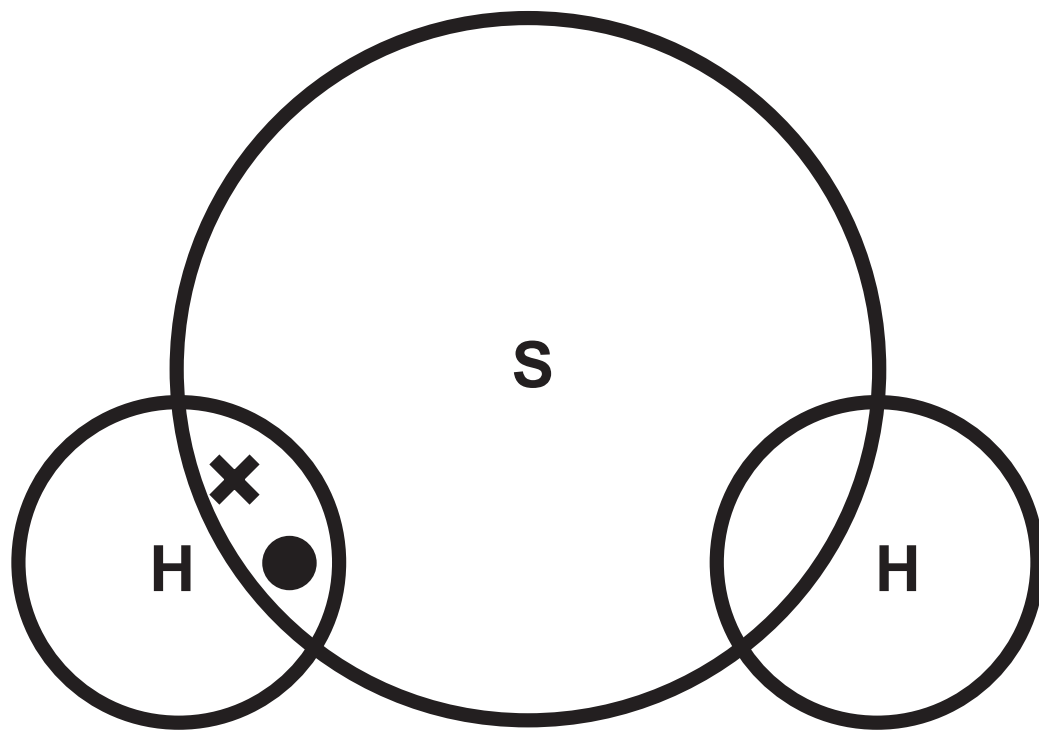
carbon dioxide

methane

**structure of
molecule**

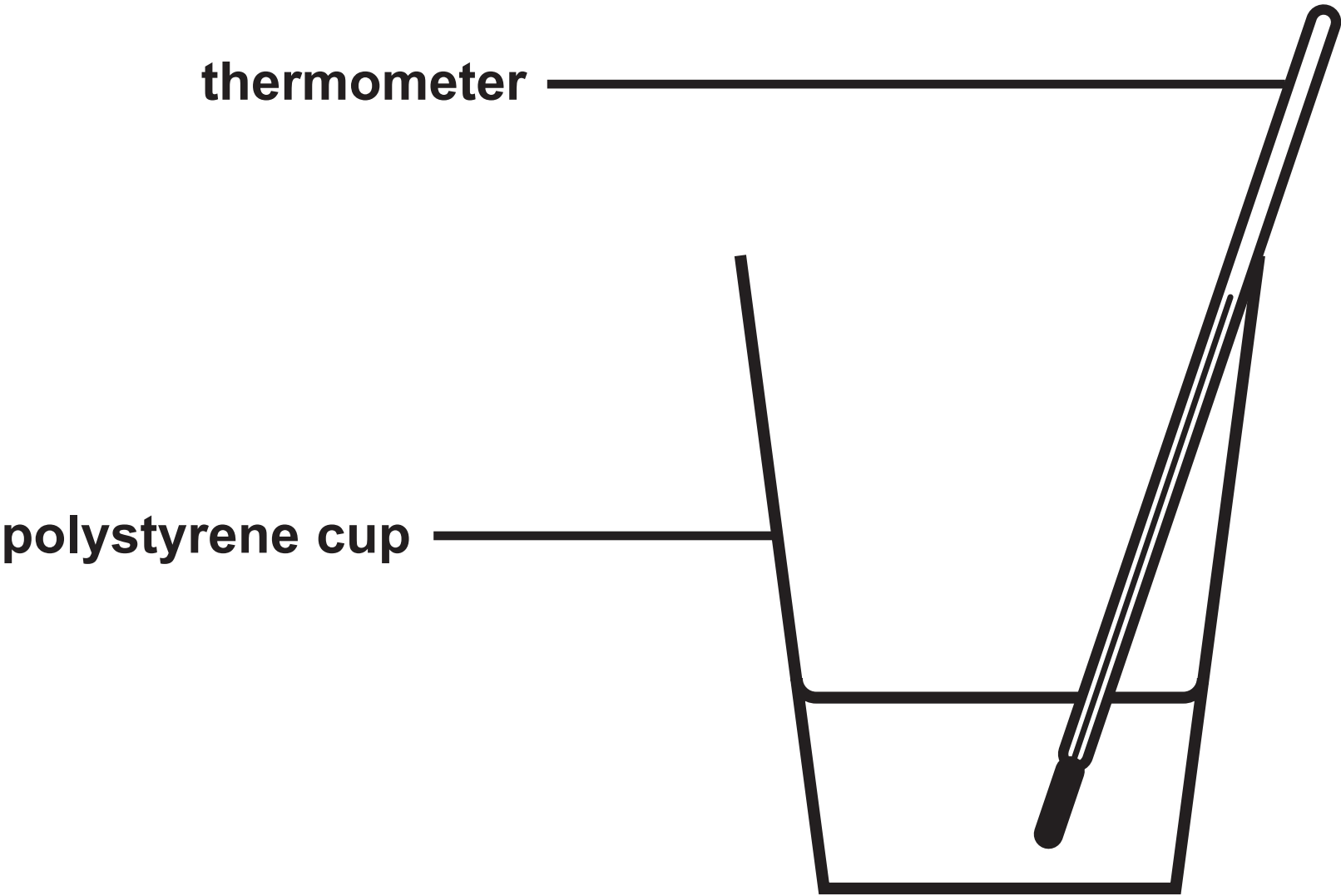


Question 1(c)



Question 2

FIGURE 3



Question 2(b)

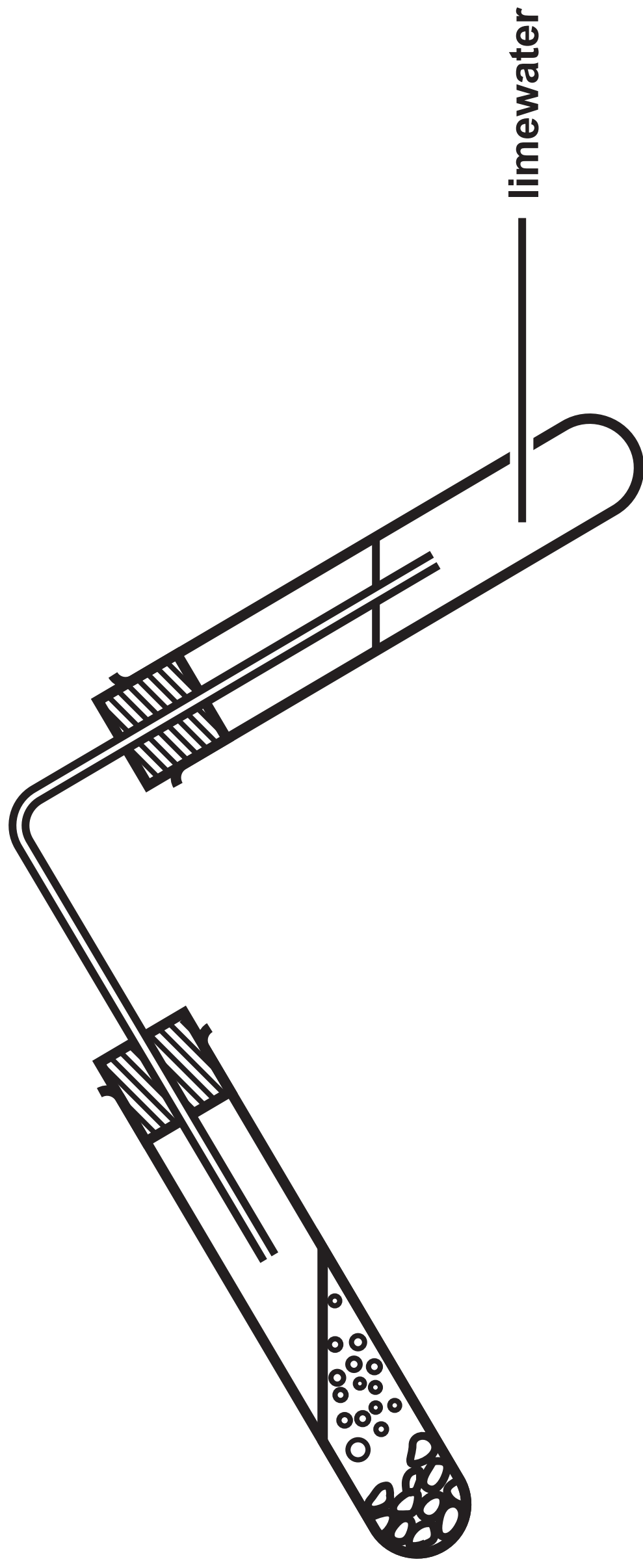
FIGURE 5

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



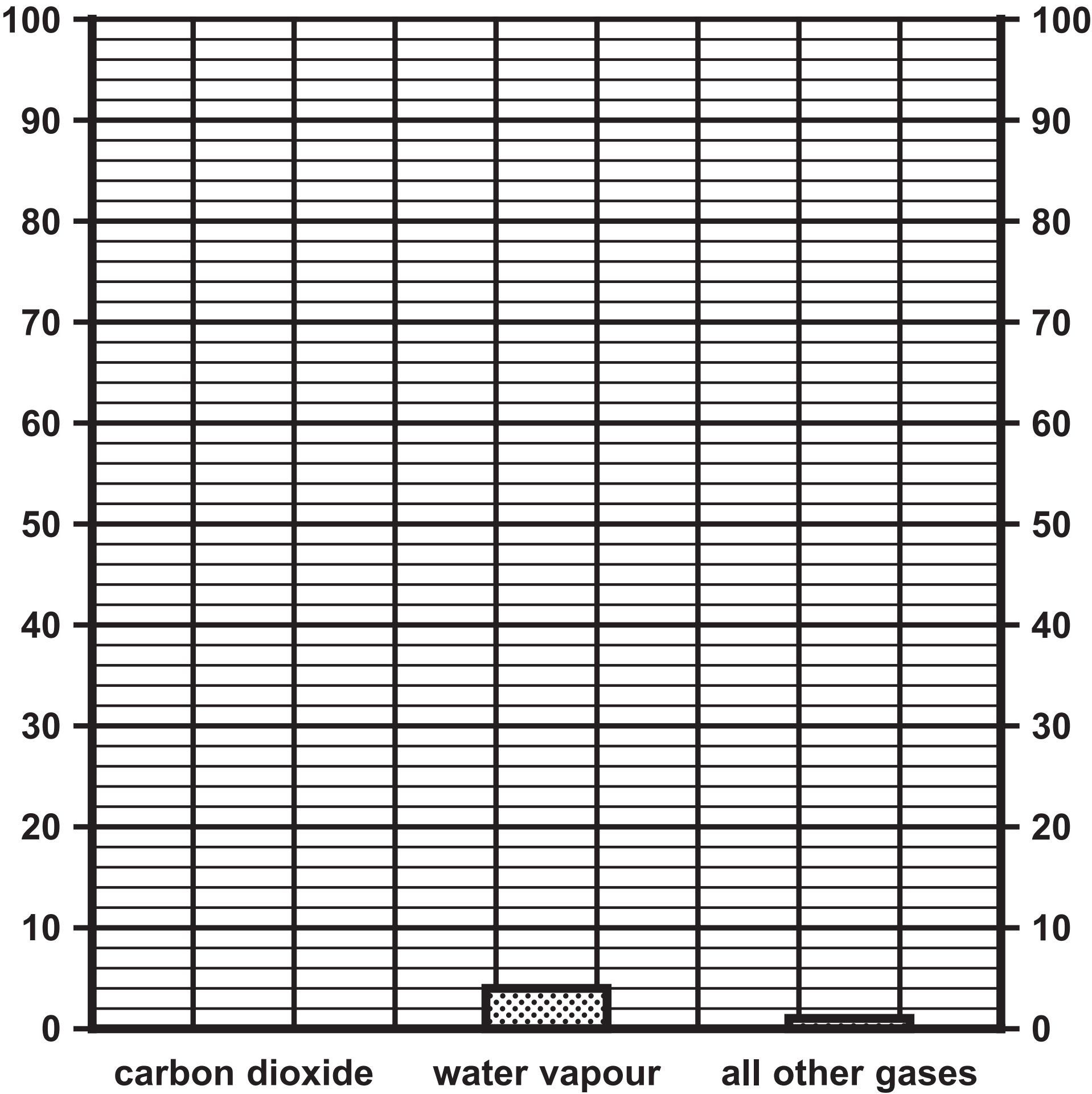
Question 4

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



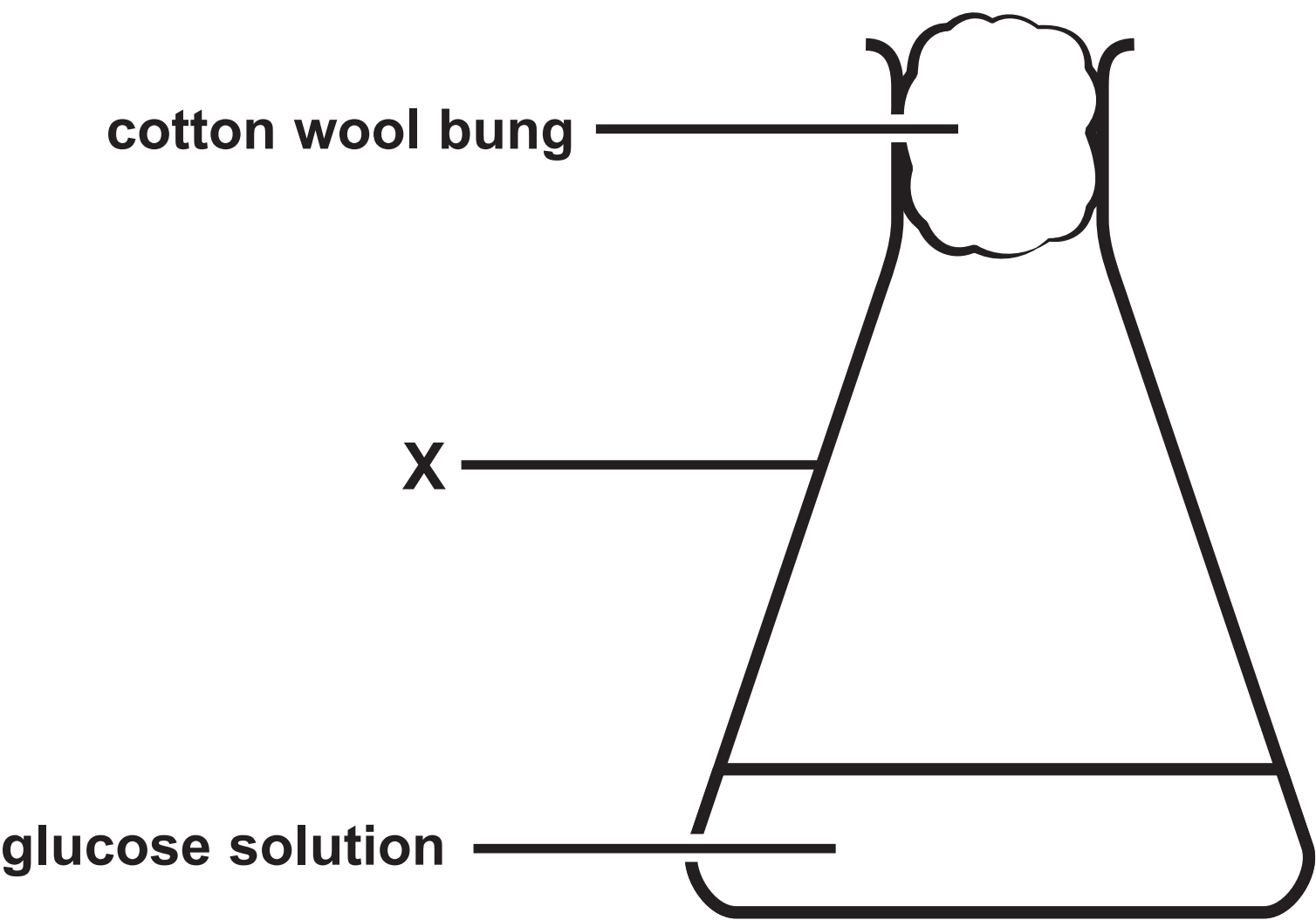
Question 4(d)

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

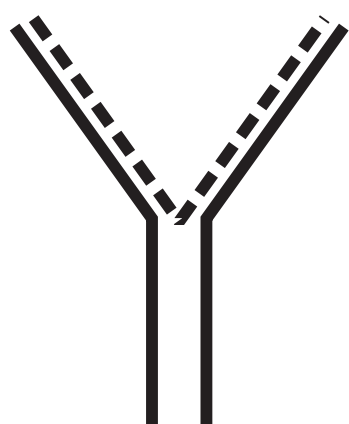


Diagram B

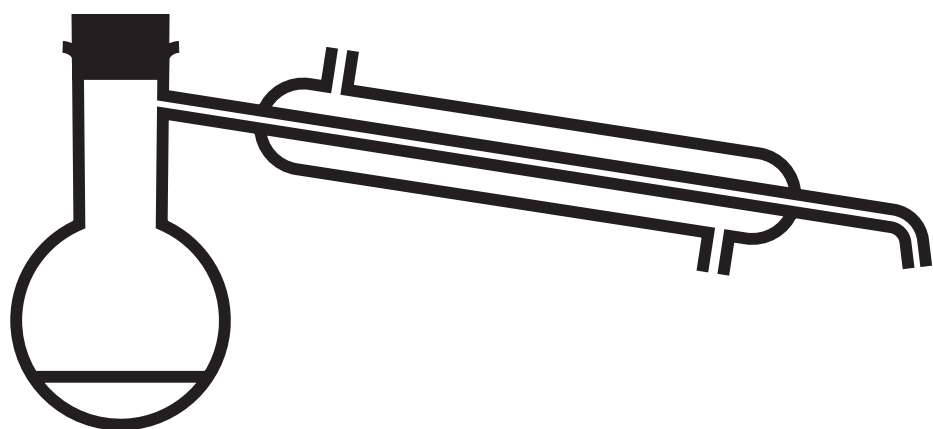


Diagram C

dilute solution of ethanol

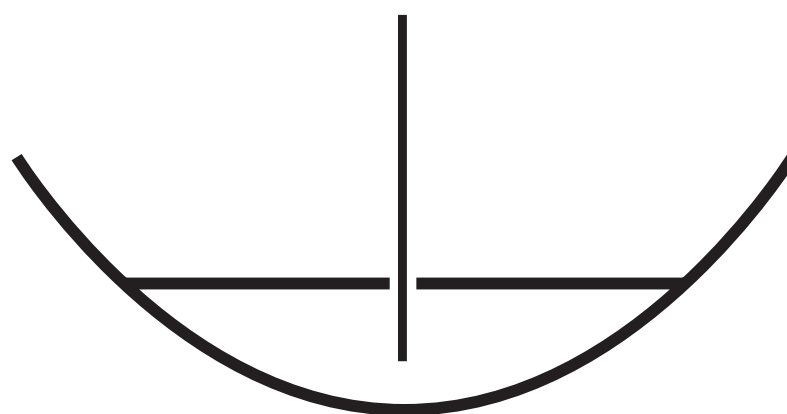
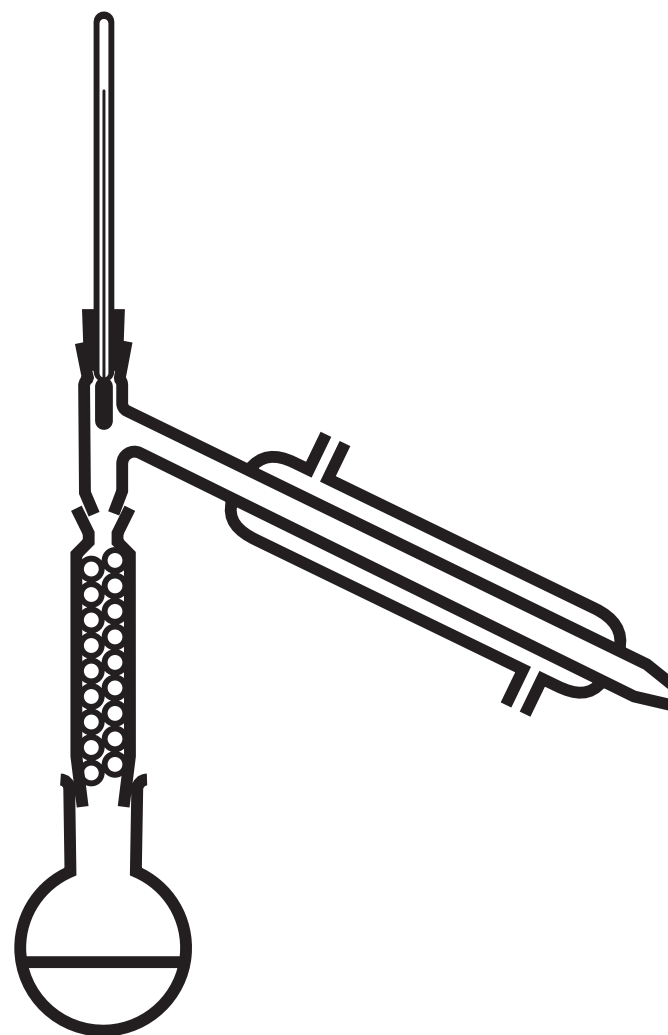
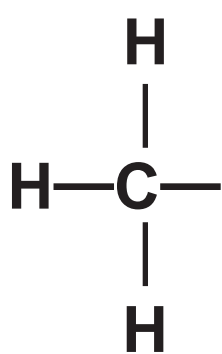


Diagram D

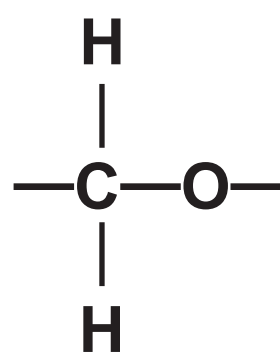


Question 5(f)

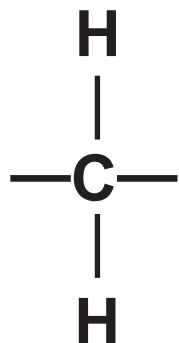
Structure A



Structure C



Structure B



Structure D



Question 6(b)(v)

Diagram A

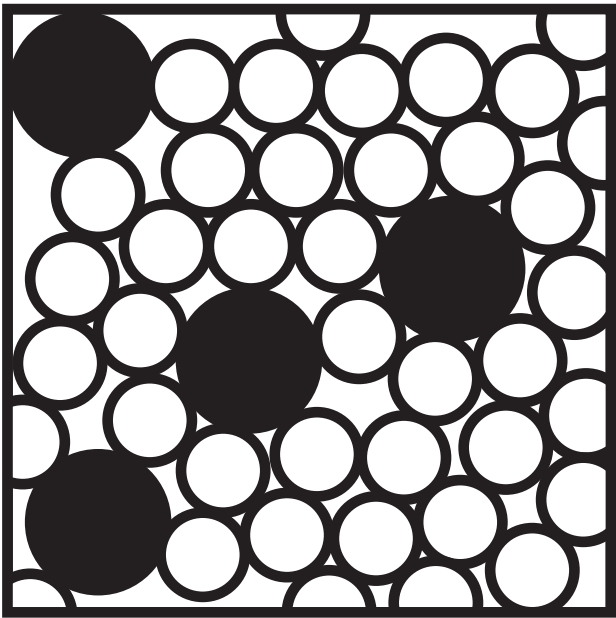


Diagram B

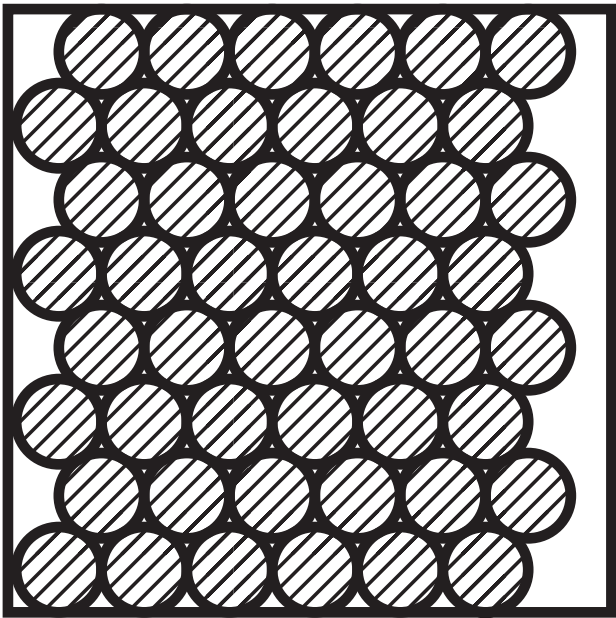


Diagram C

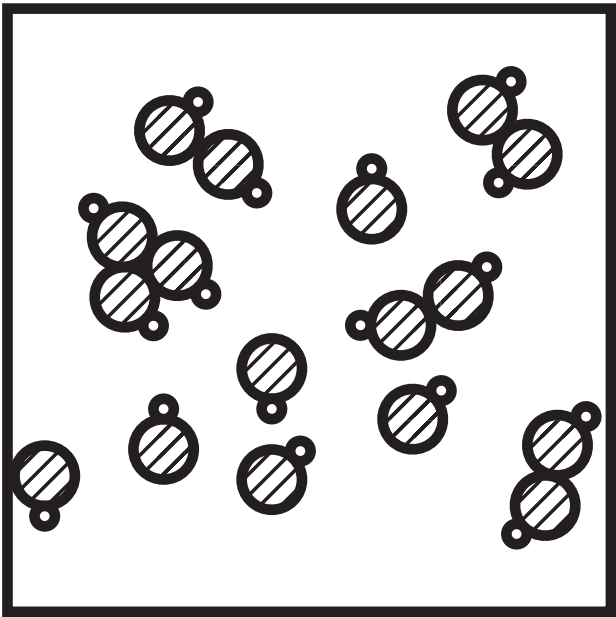
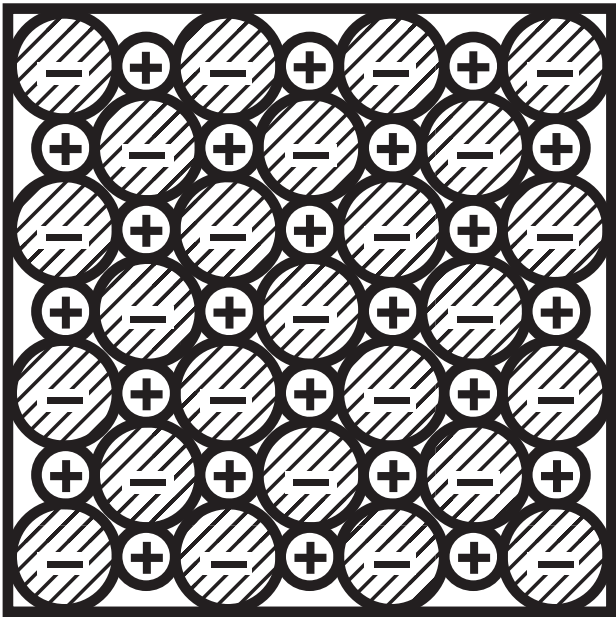


Diagram D



Question 6(b)(vi)

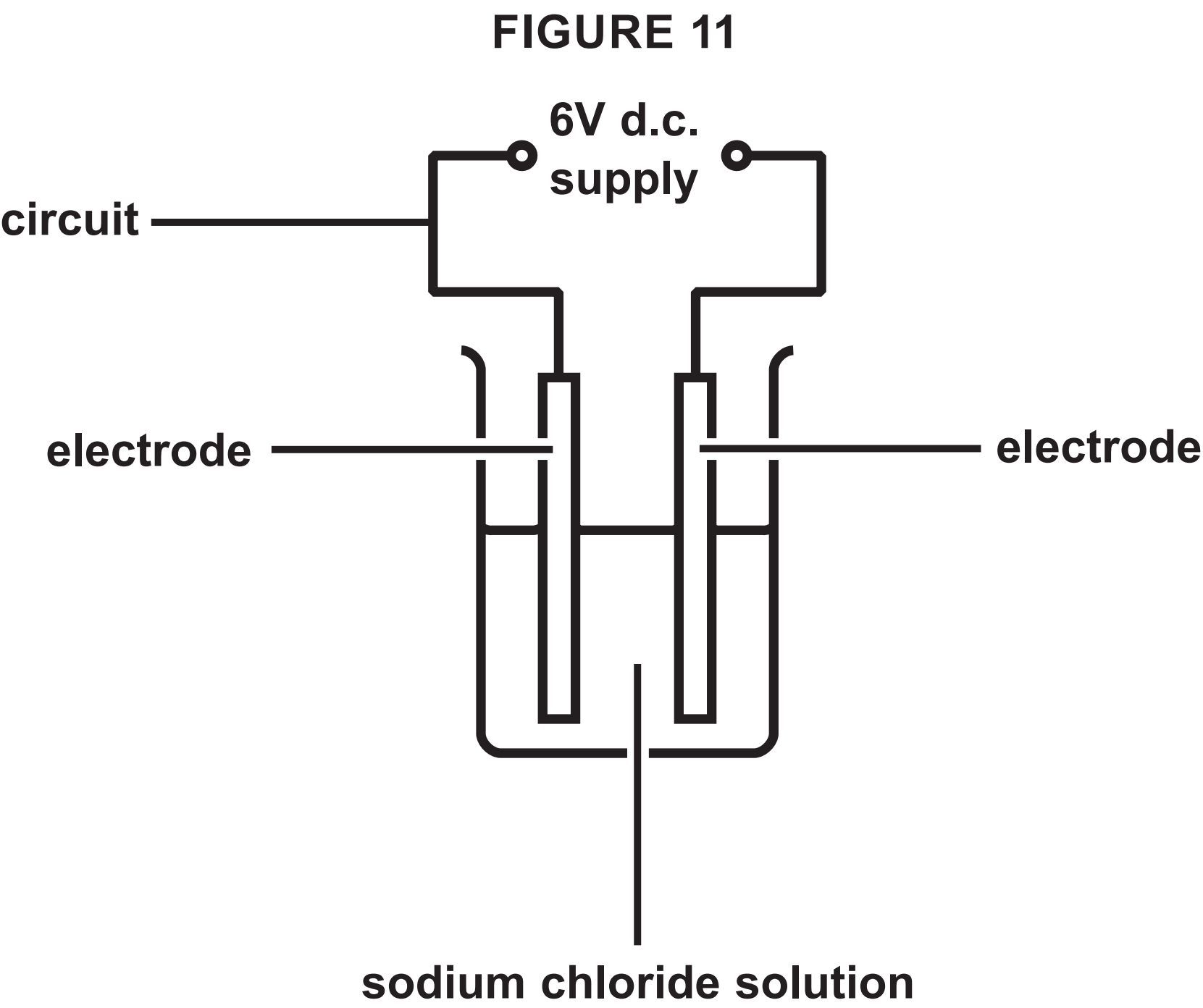
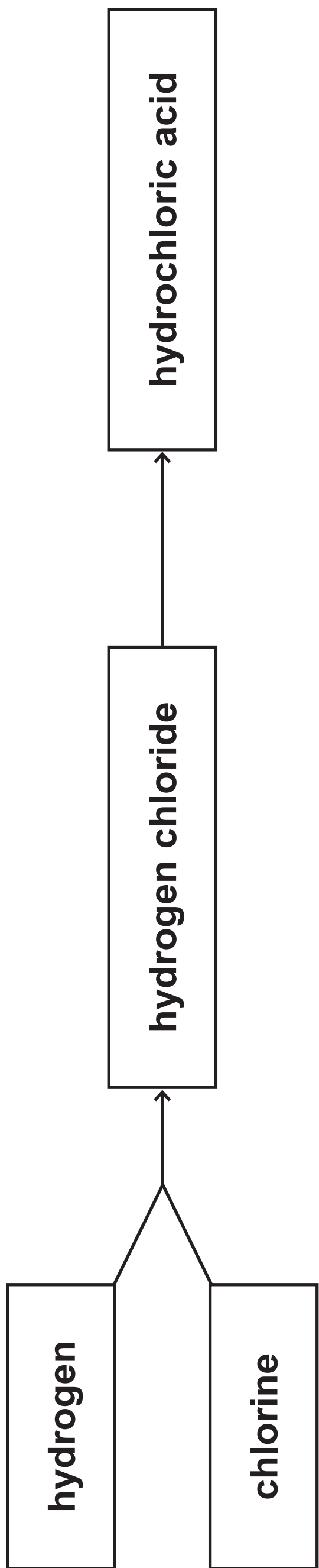


FIGURE 12

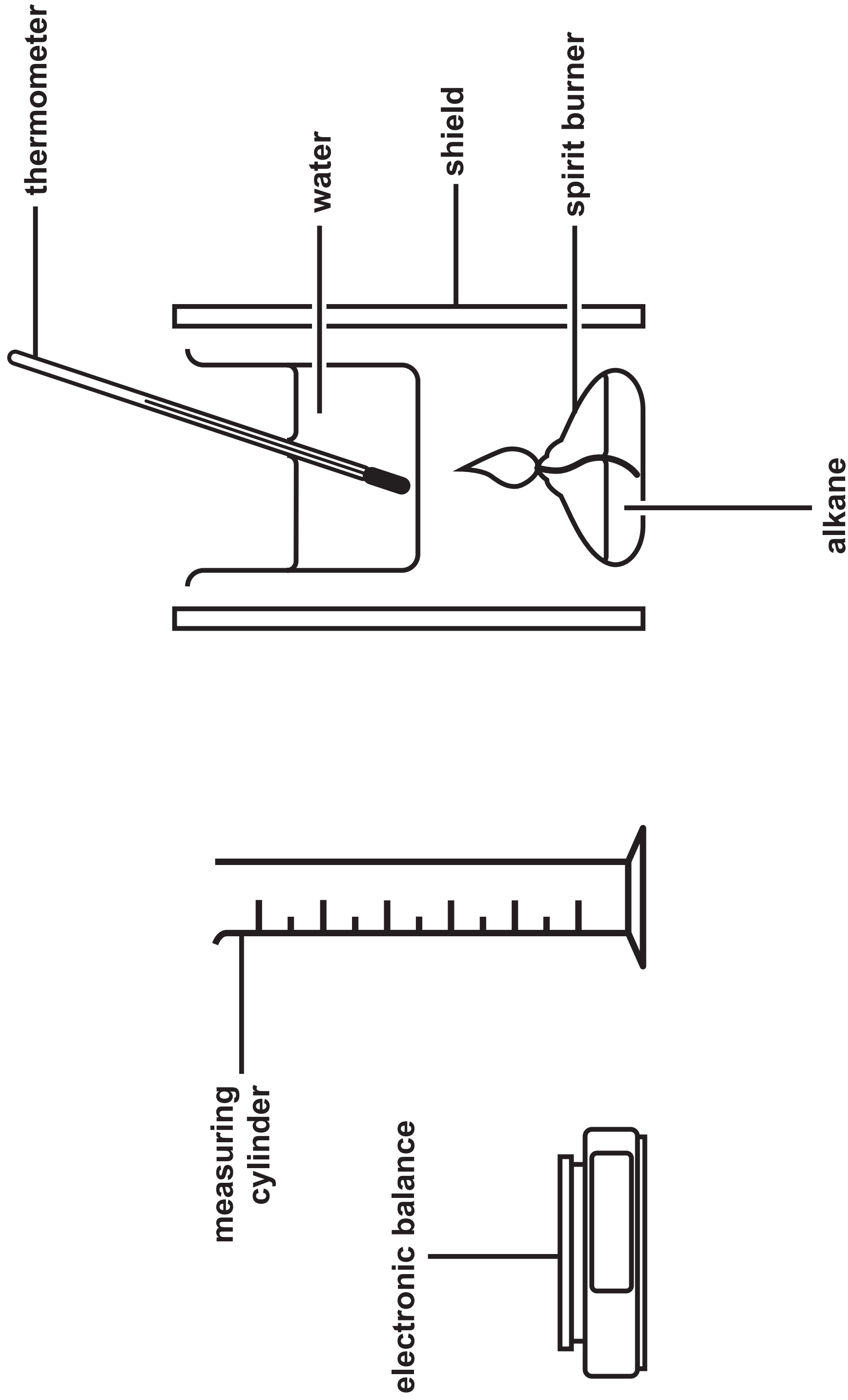


Question 7(b)(i)

FIGURE 13

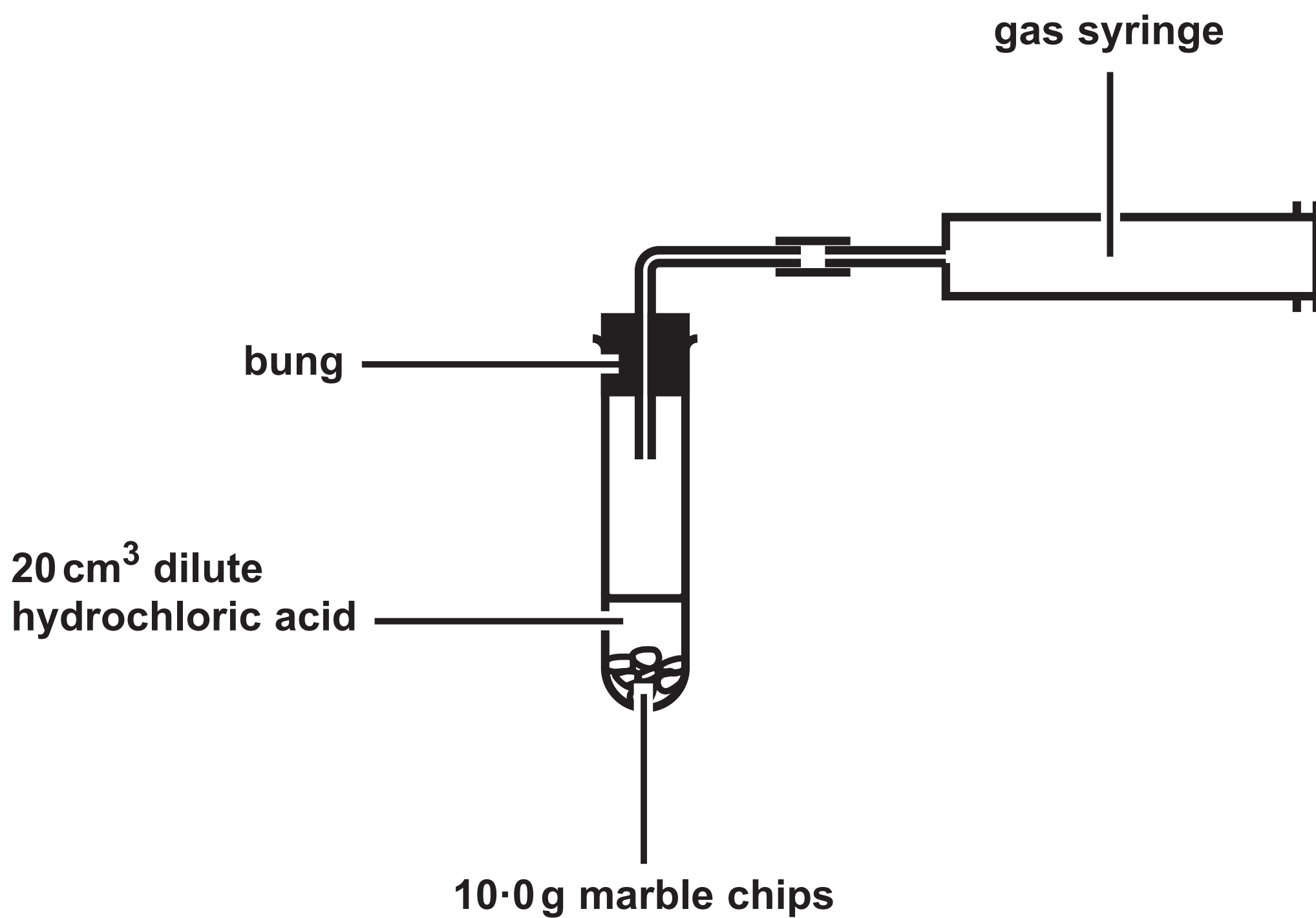
alkane	formula	structure of one molecule
propane	C ₃ H ₈	
butane		<pre> H H H H H — C — C — C — C — H H H H H</pre>
pentane	C ₅ H ₁₂	<pre> H H H H H H — C — C — C — C — C — H H H H H H</pre>
hexane	C ₆ H ₁₄	<pre> H H H H H H H — C — C — C — C — C — C — H H H H H H H</pre>

FIGURE 14



Question 8

FIGURE 15



Question 8(a) and 8(c)

volume of
gas in cm³

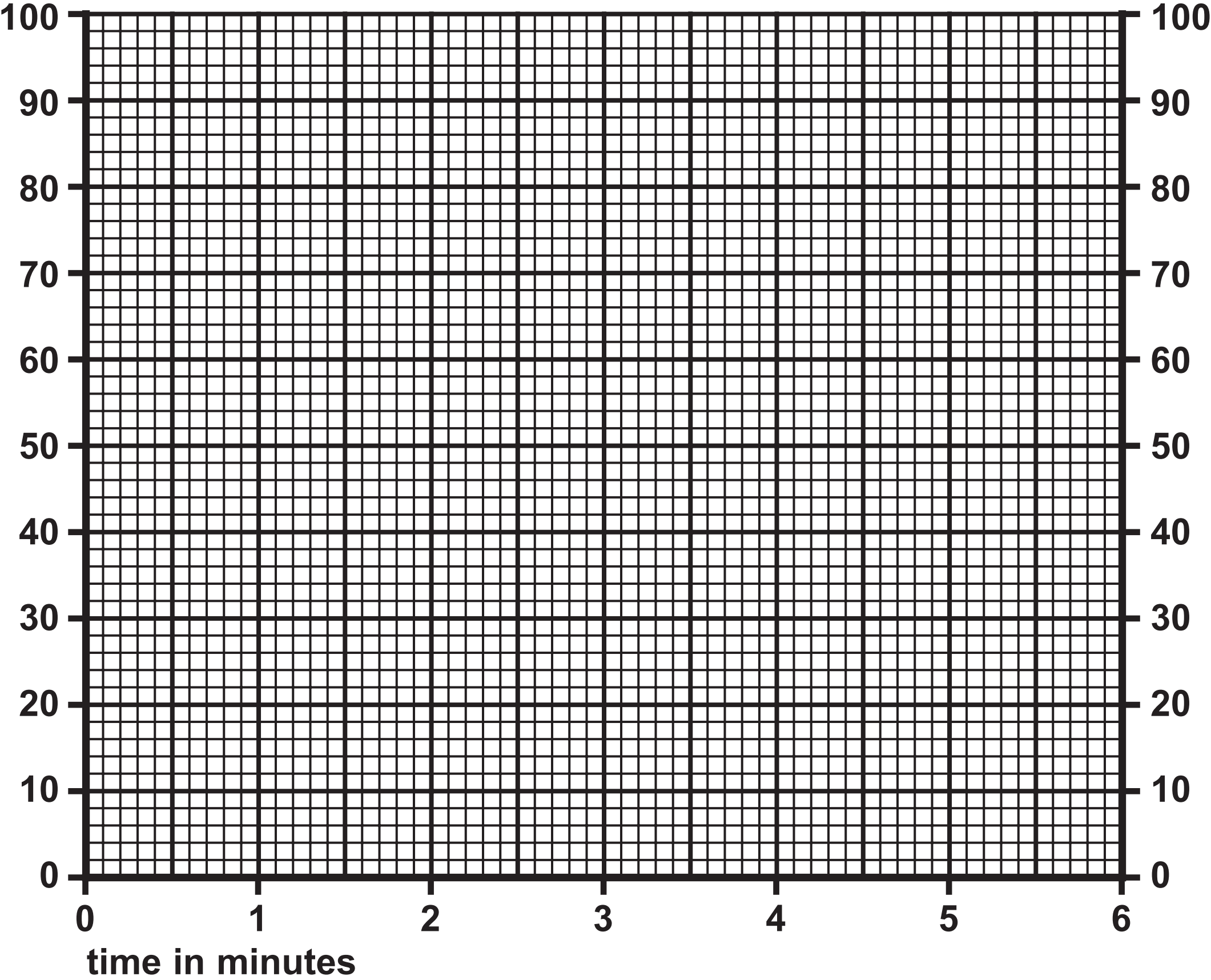


FIGURE 17

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

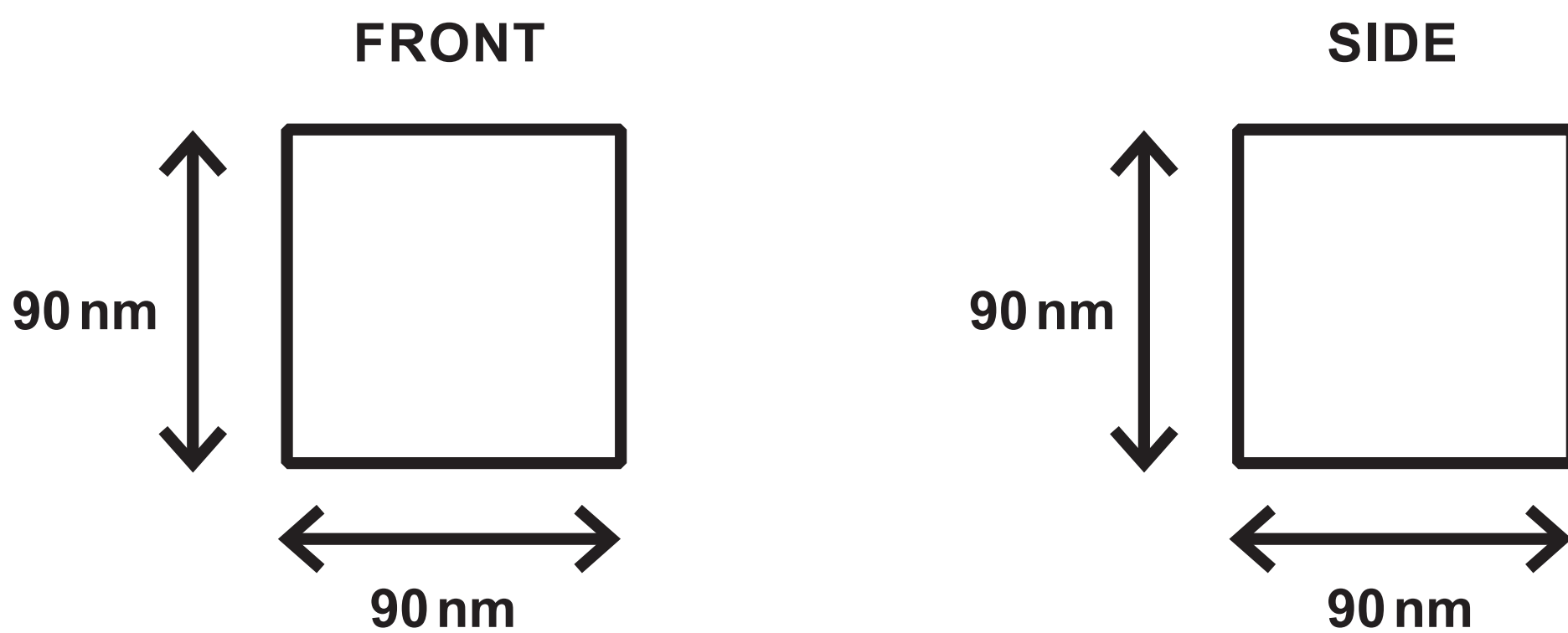
Question 9

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

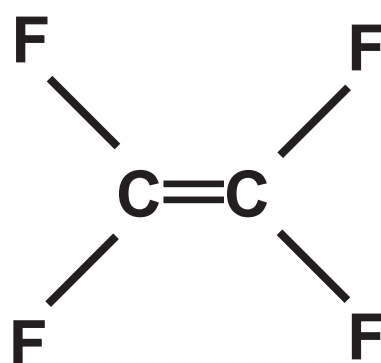
Question 10(b)

FIGURE 19



Question 10(c)

FIGURE 20



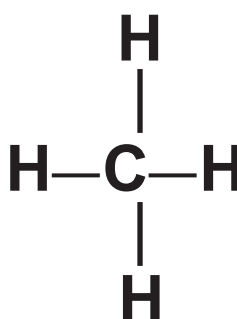
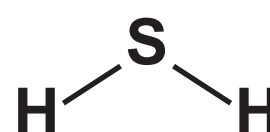
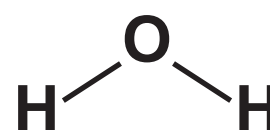
Question 1(b)

**name of
compound**

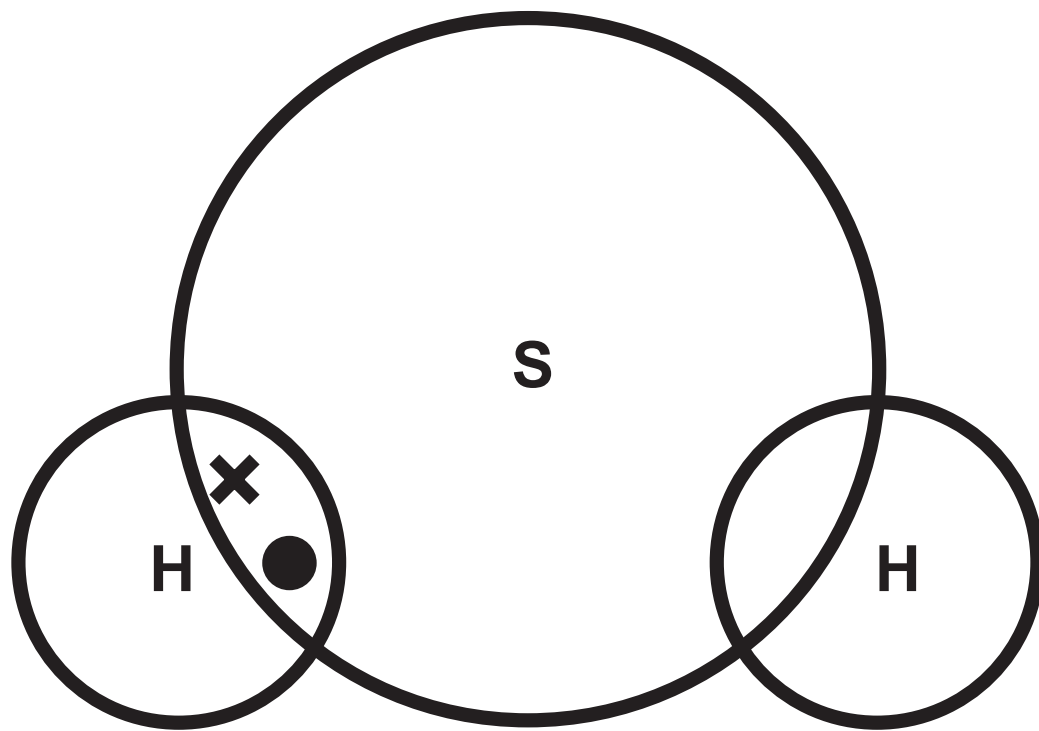
carbon dioxide

methane

**structure of
molecule**



Question 1(c)

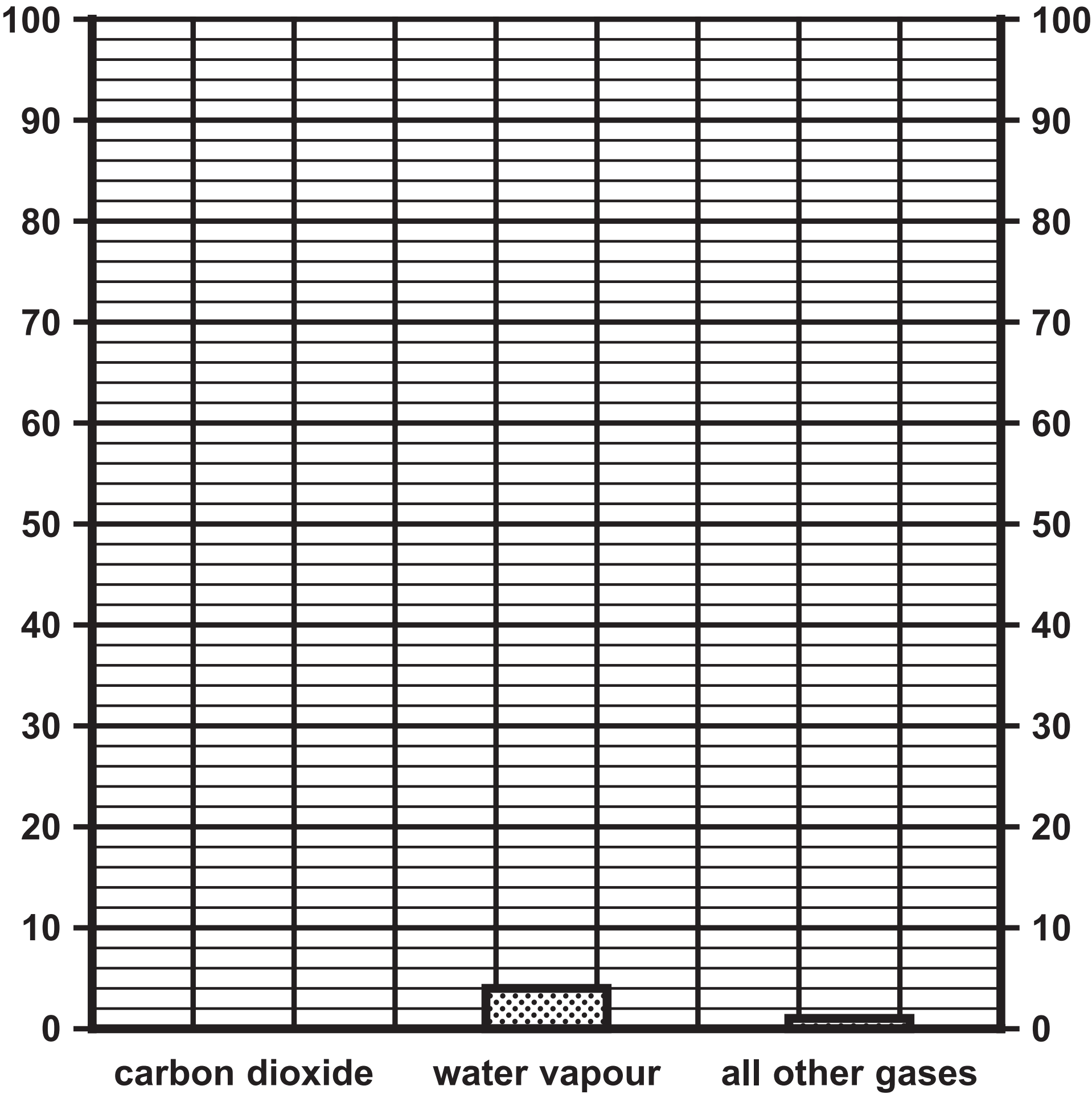


Question 3(a)(ii)

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 ₃ H ₈	
butane		<pre> H H H H H — C — C — C — C — H H H H H</pre>
pentane	C ₅ H ₁₂	<pre> H H H H H H — C — C — C — C — C — H H H H H H</pre>
hexane	C ₆ H ₁₄	<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)

