

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

**Chemistry**  
**PAPER 2**  
**Higher Tier**

**Tuesday 13 June 2023 – Morning**

**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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## **Spare Copies**

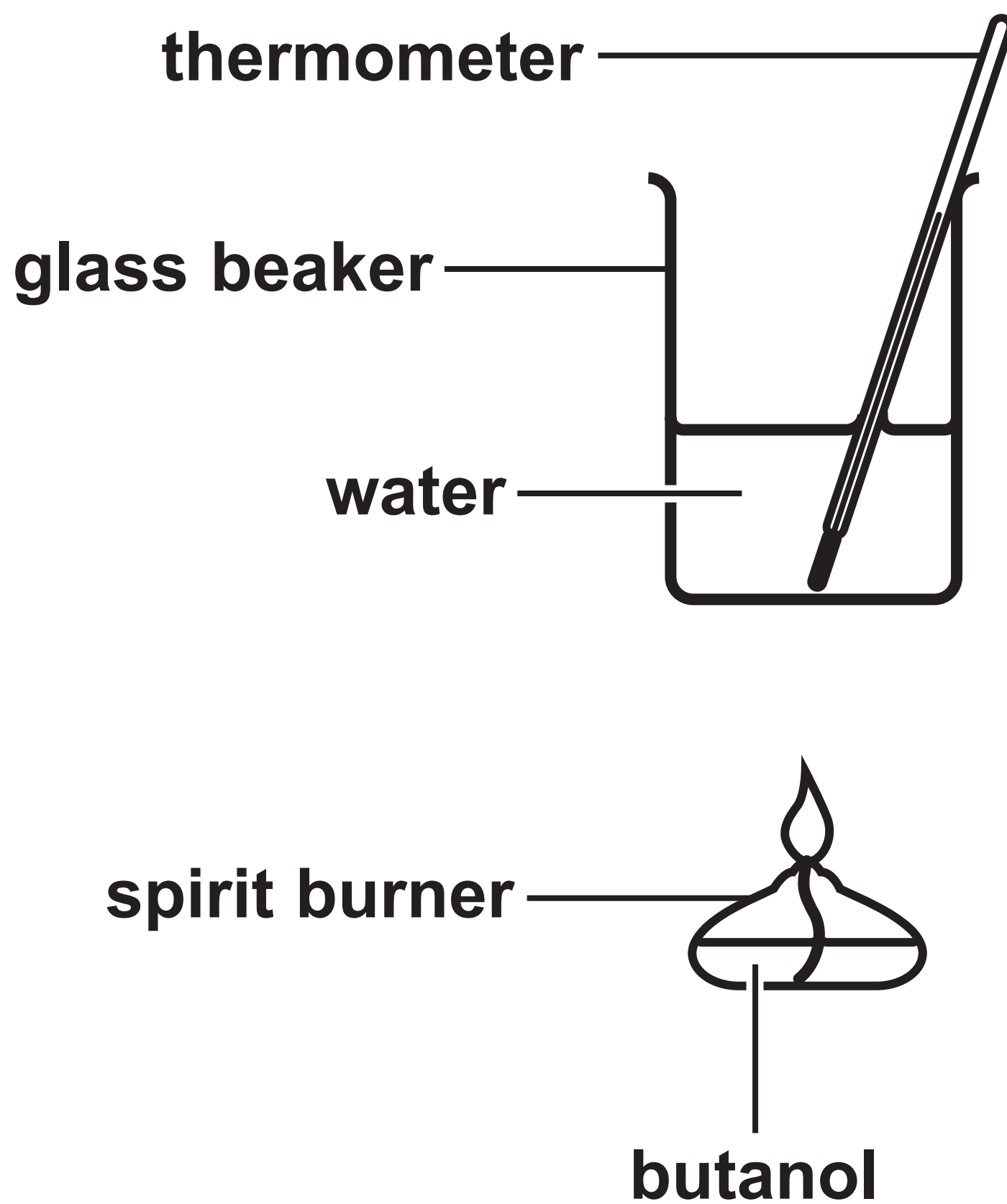
**21 Question 2(a) and 2(c)**

**22 Question 7(a)(i)**

**23 Question 7(a)(ii)**

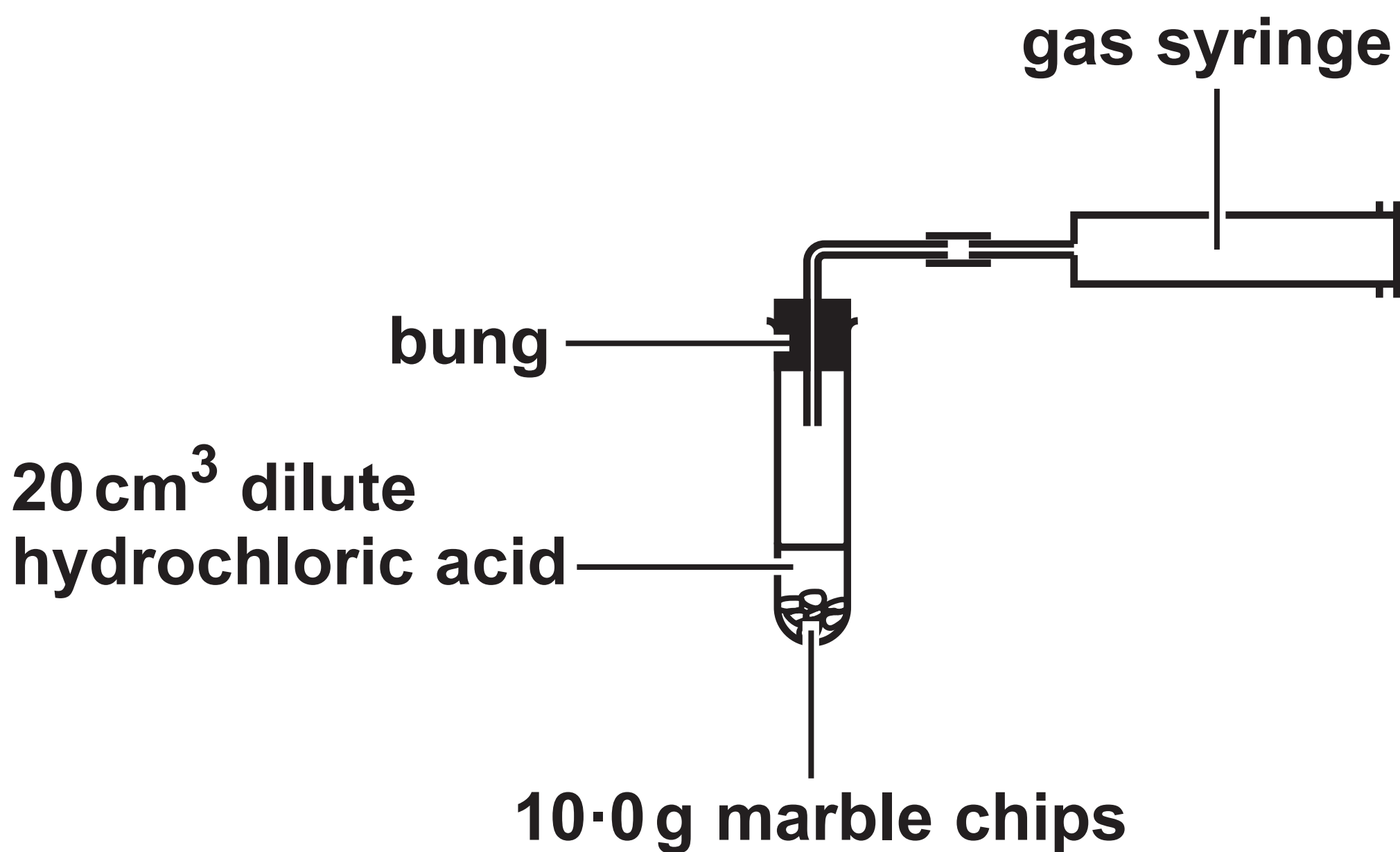
# Question 1

**FIGURE 1**



## Question 2

**FIGURE 3**



# Question 2(a) and 2(c)

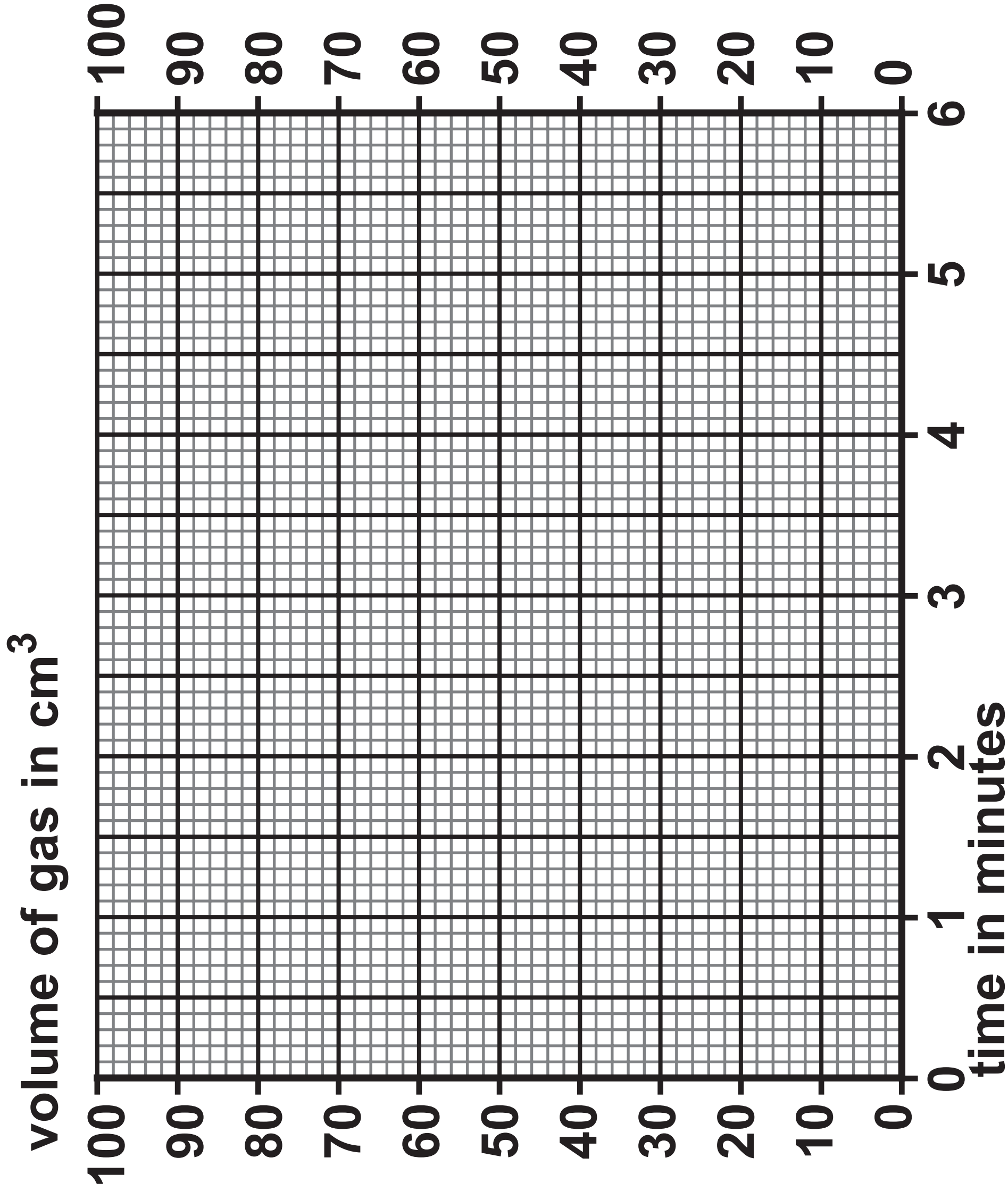


FIGURE 5

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

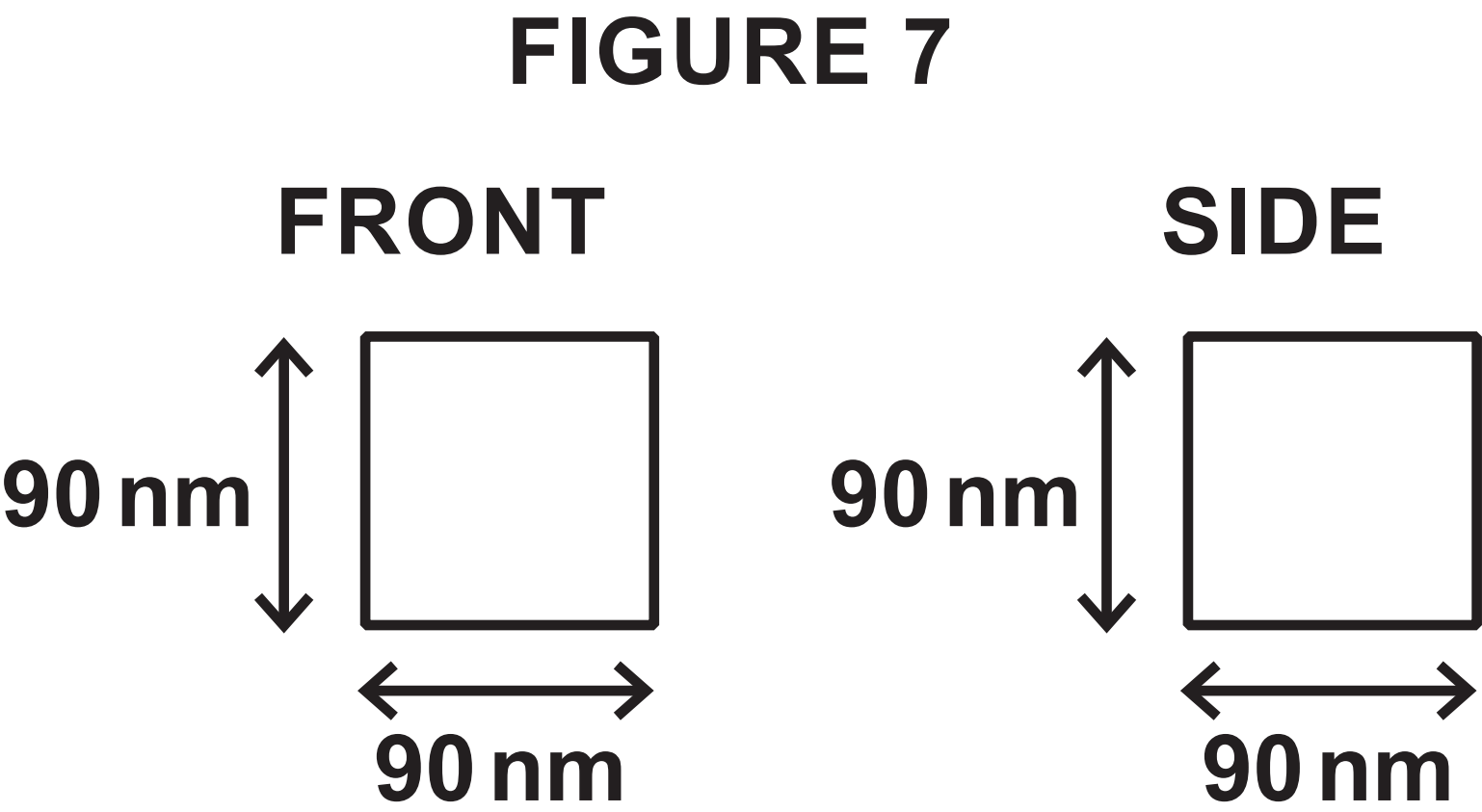


## Question 3

**FIGURE 6**

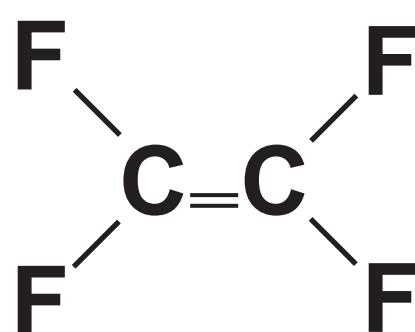
<b>group 1 metal</b>	<b>atomic number</b>	<b>relative atomic mass</b>
<b>lithium</b>	<b>3</b>	<b>7</b>
<b>sodium</b>	<b>11</b>	<b>23</b>
<b>potassium</b>	<b>19</b>	<b>39</b>
<b>rubidium</b>	<b>37</b>	<b>85</b>
<b>caesium</b>	<b>55</b>	<b>133</b>

Question 4(b)

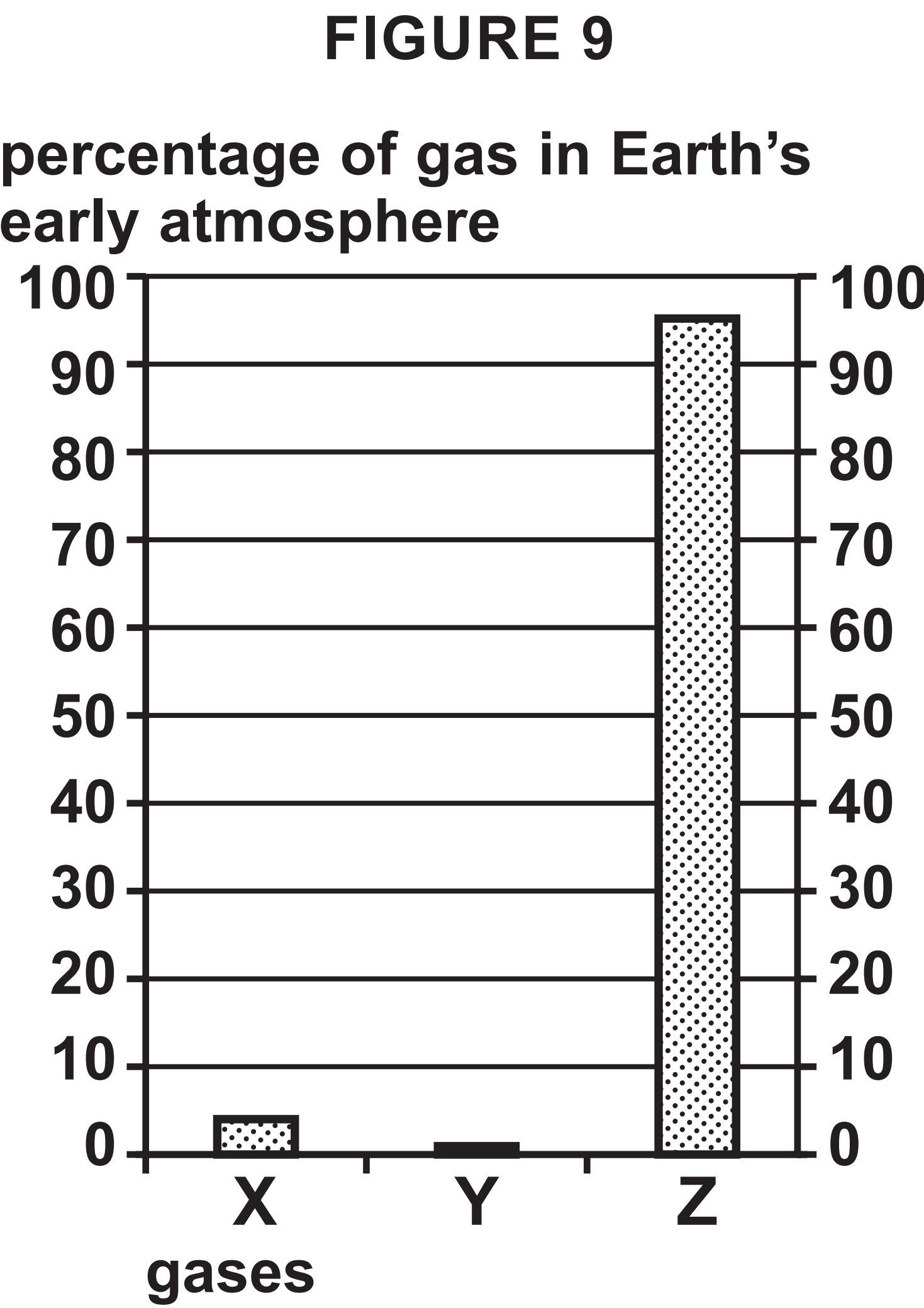


## Question 4(c)

**FIGURE 8**

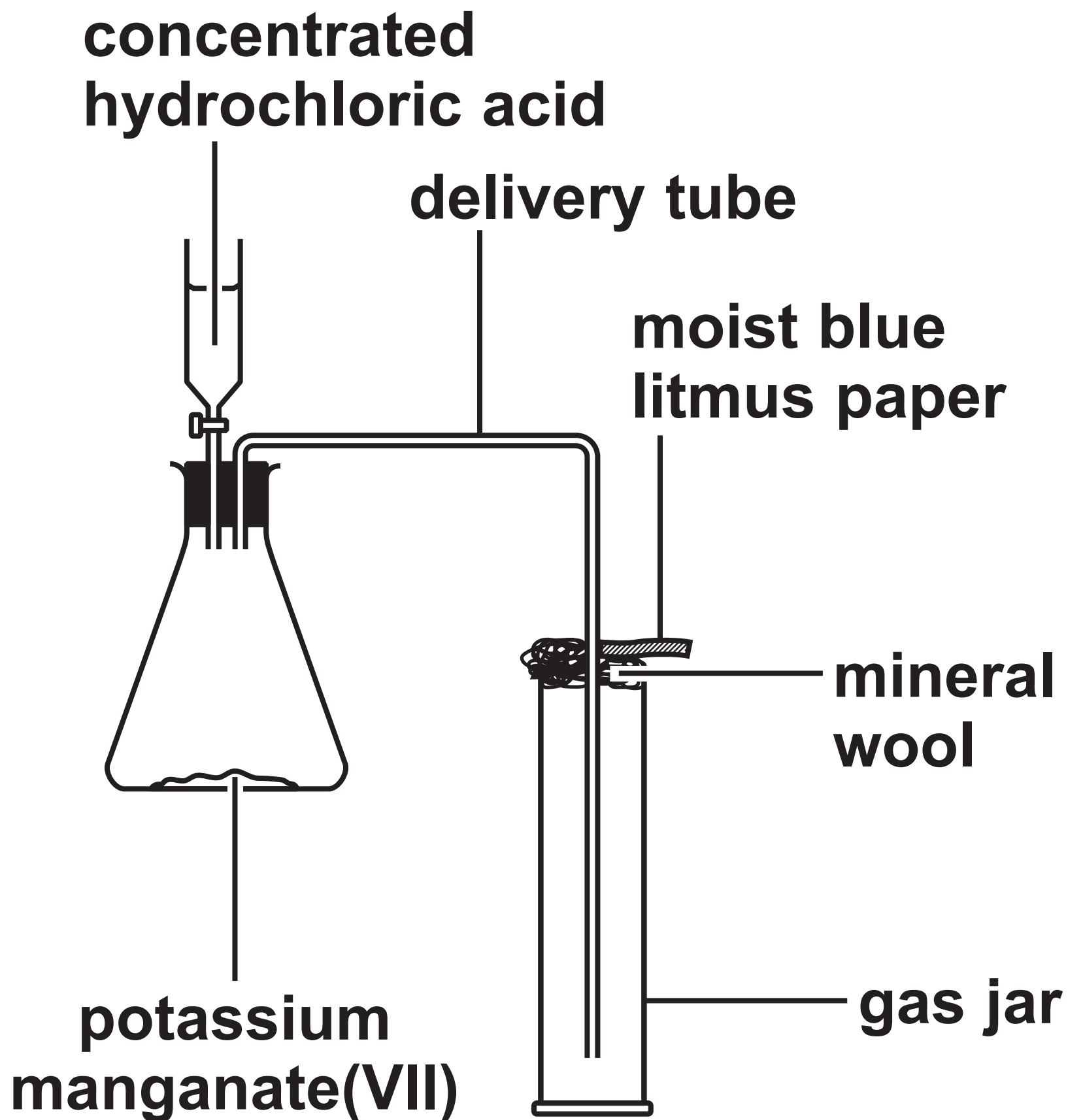


Question 5(a)



## Question 6

FIGURE 10



## Question 6(a)

FIGURE 11









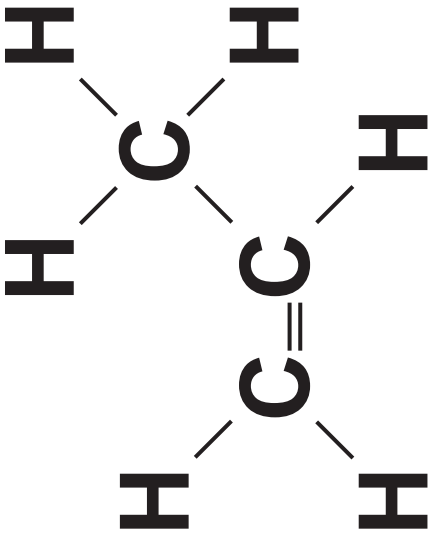
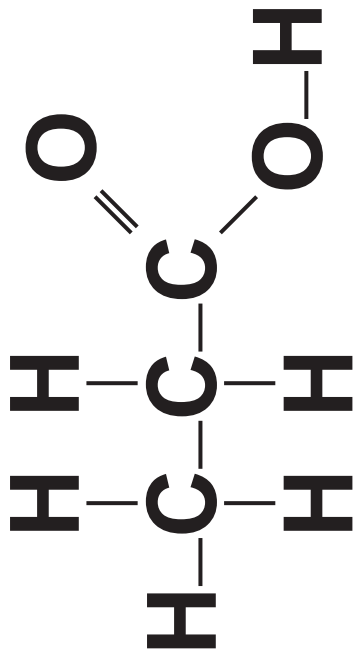
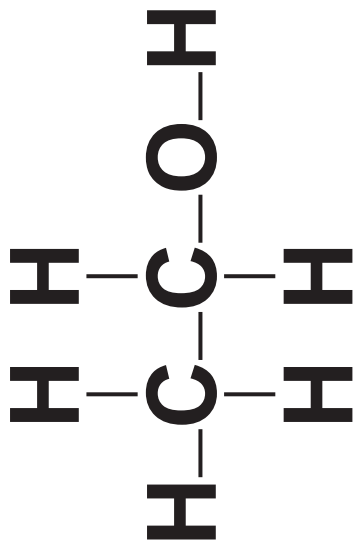
substance	hazard symbol
concentrated hydrochloric acid	 
potassium manganate(VII)	  
chlorine gas	  

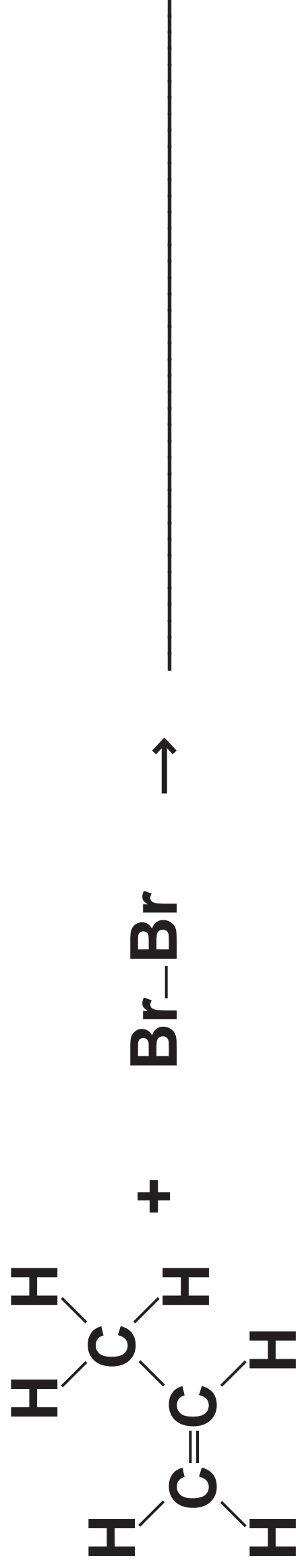
FIGURE 12

propene	propanoic acid	ethanol
		

## Question 7(a)(ii)

16

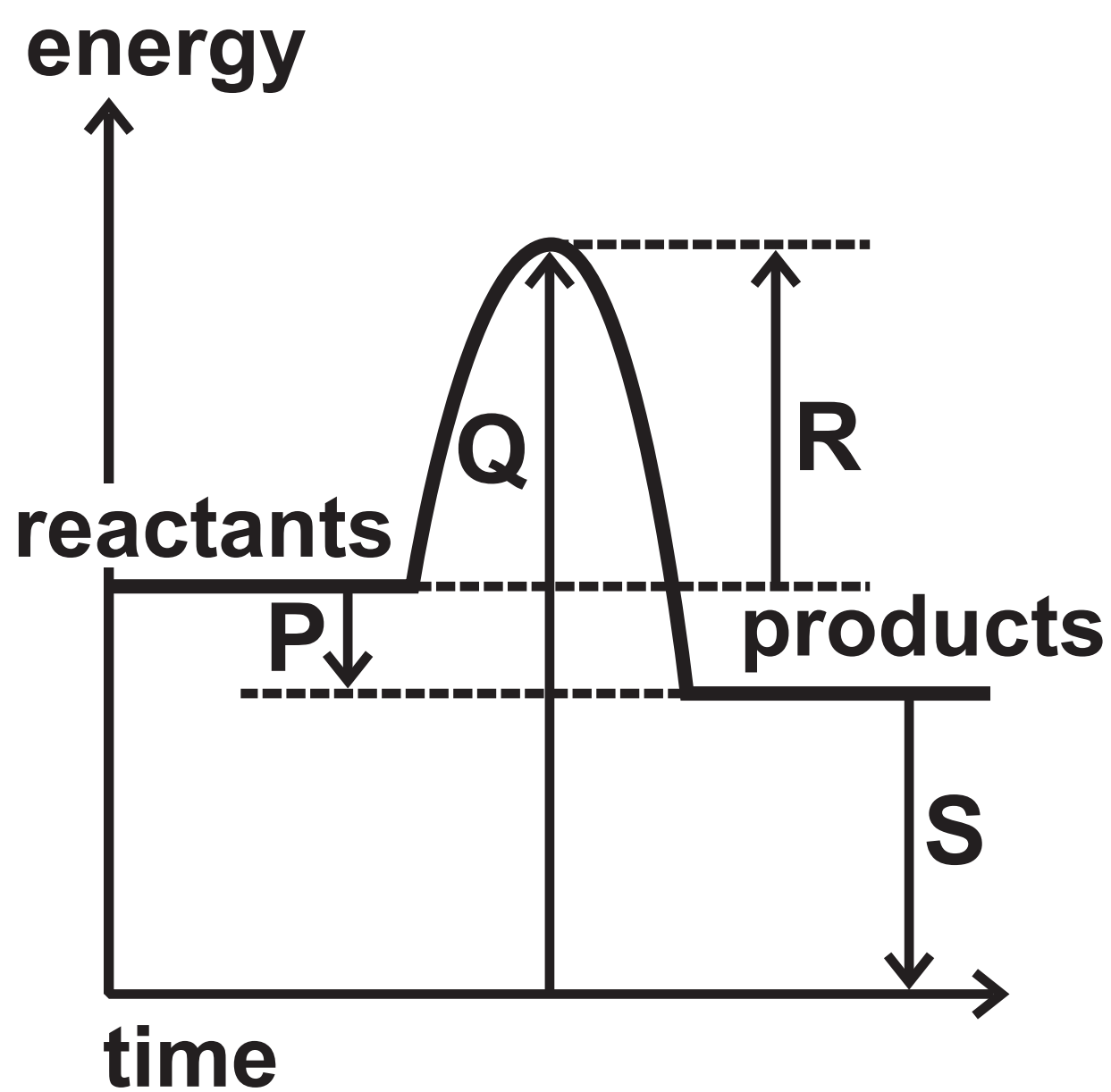
PROPENE	BROMINE	PRODUCT
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## Question 8(b)

FIGURE 13



**Question 8(b)(iii)****FIGURE 14**

<b>bond</b>	<b>bond energy in kJ mol<sup>-1</sup></b>
<b>N≡N</b>	<b>944</b>
<b>H-H</b>	<b>436</b>
<b>H-N</b>	<b>388</b>

Question 9(a)

FIGURE 15

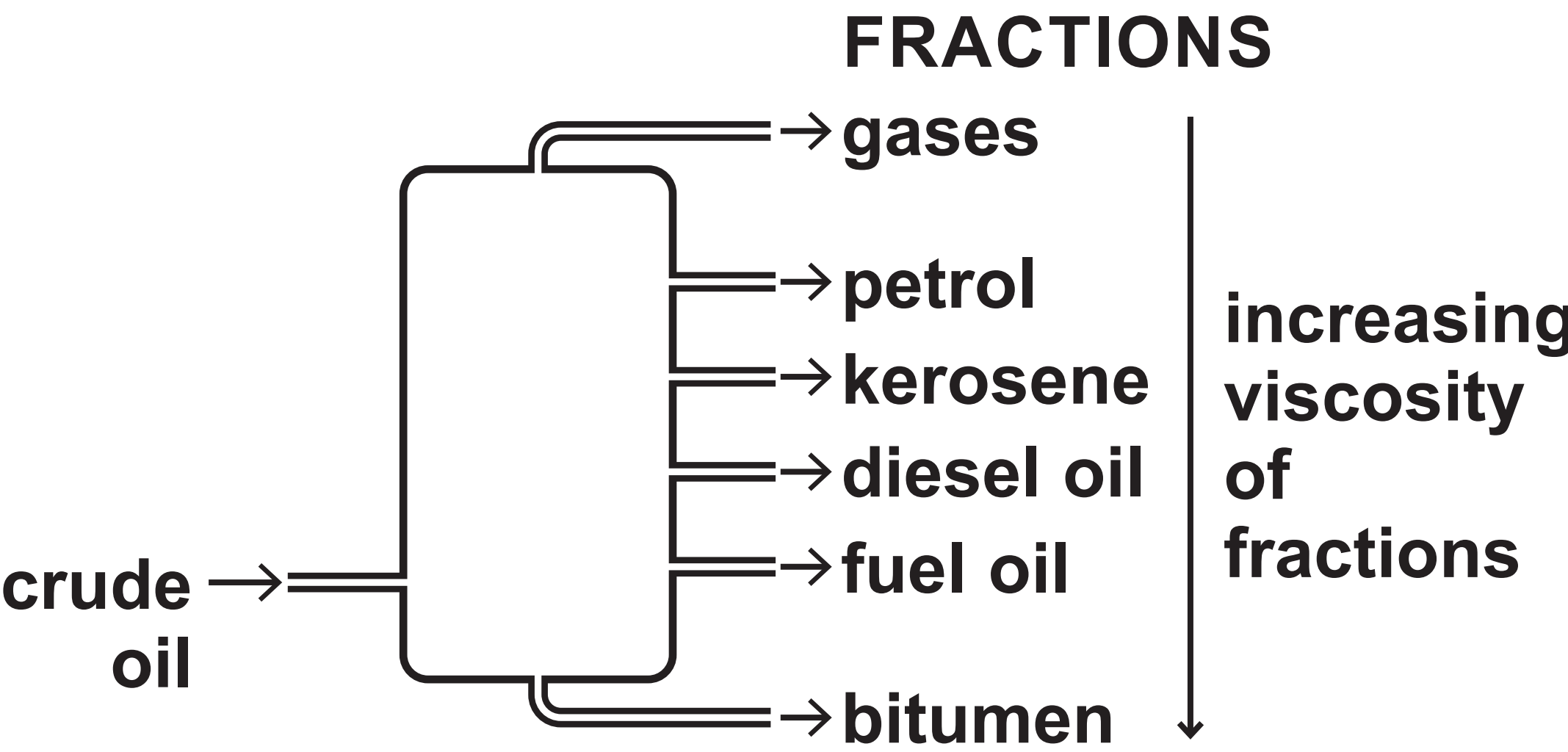
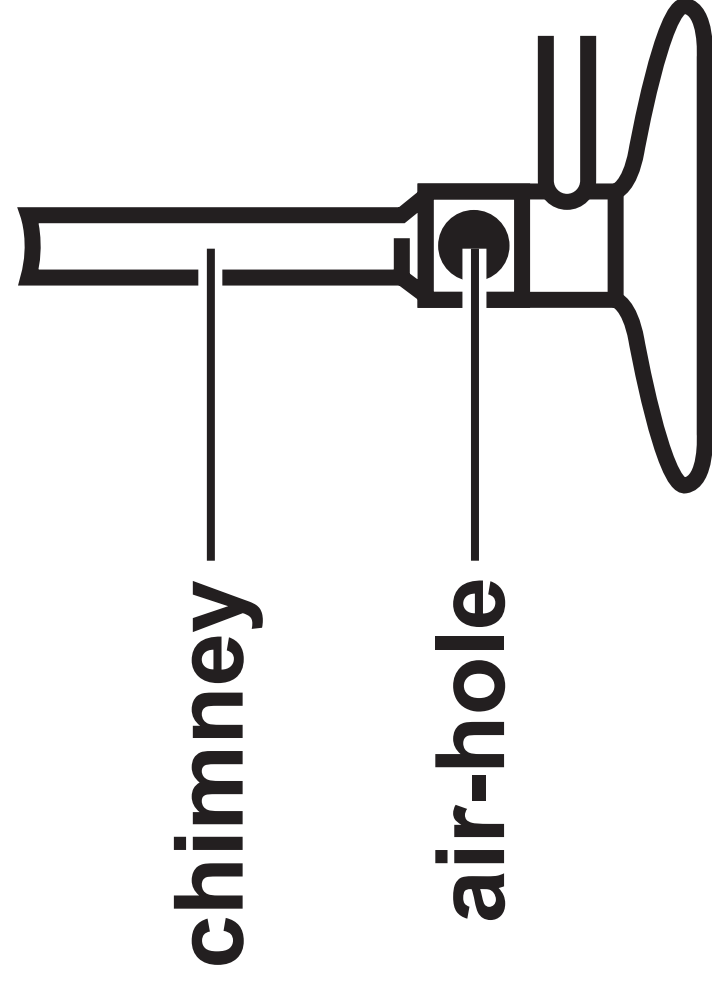


FIGURE 16



Question 2(a) and 2(c)

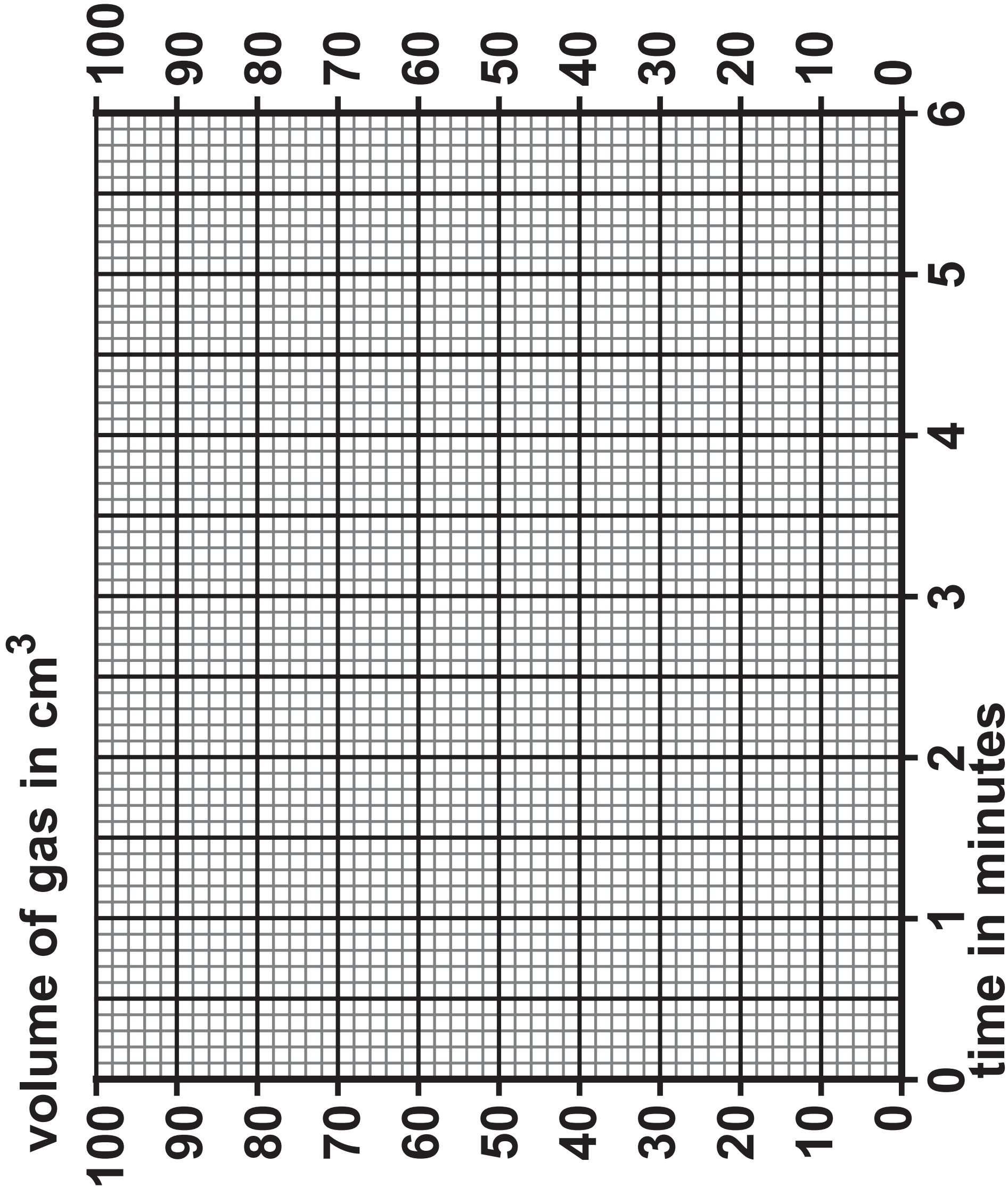
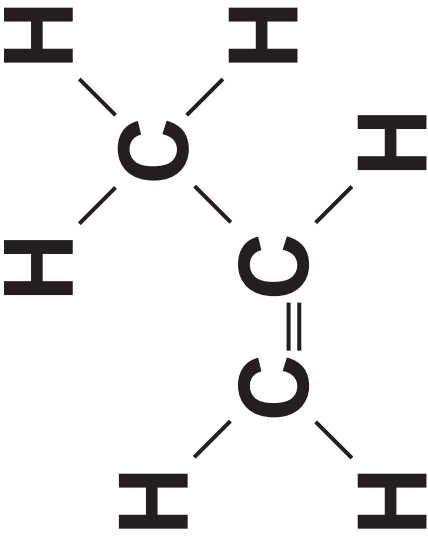
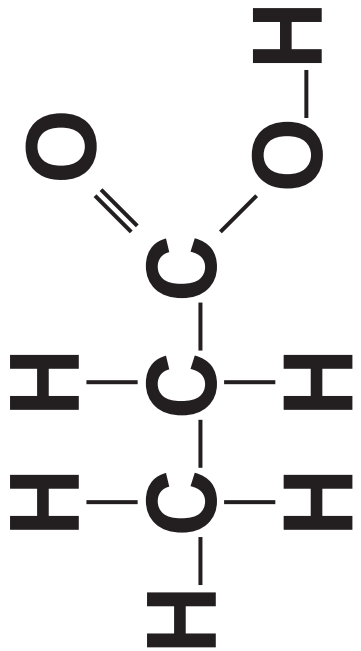
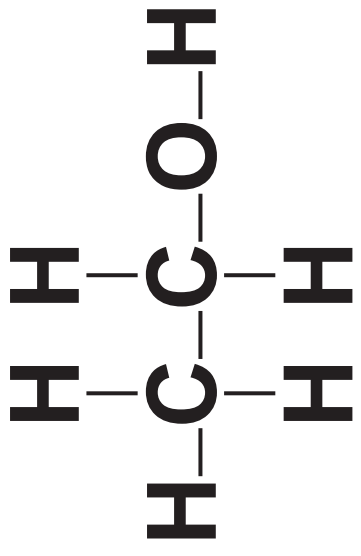


FIGURE 12

propene	propanoic acid	ethanol
		

## Question 7(a)(ii)

23

PROPENE	BROMINE	PRODUCT
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