

Chemistry
PAPER 2
Higher Tier

Tuesday 11 June 2024 – Morning

Time: 1 hour 45 minutes

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.

Surname					
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INSTRUCTIONS

There may be spare copies of some diagrams in case you need them.

CONTENTS

Page

3	Question 1(a)
4	Question 1(a)(iii)
5	Question 2(a)
6	Question 2(b)
7	Question 3(d)
8	Question 4(a)
9	Question 4(b)
10	Question 6(a)
11	Question 6(b)(i)
12	Question 7(b)(i)
13	Question 7(b)(ii)
14	Question 7(d)
15	Question 8(c)
16	Question 9(b)
17	Question 10(a)
18	Question 10(b)

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19	Question 2(a)
20	Question 4(b)
21	Question 7(b)(i)
22	Question 7(b)(ii)
23	Question 10(b)

Question 1(a)

FIGURE 1

concrete	mixing ratio cement : sand : stone	compressive strength in kPa	example of use
A	1 : 2 : 4	17 250	fence posts
B	1 : 2 : 3	27 600	paving slabs
C	1 : 2 : 2	31 050	flooring

Question 1(a)(iii)

FIGURE 2

KEY

○ oxygen atom

● silicon atom

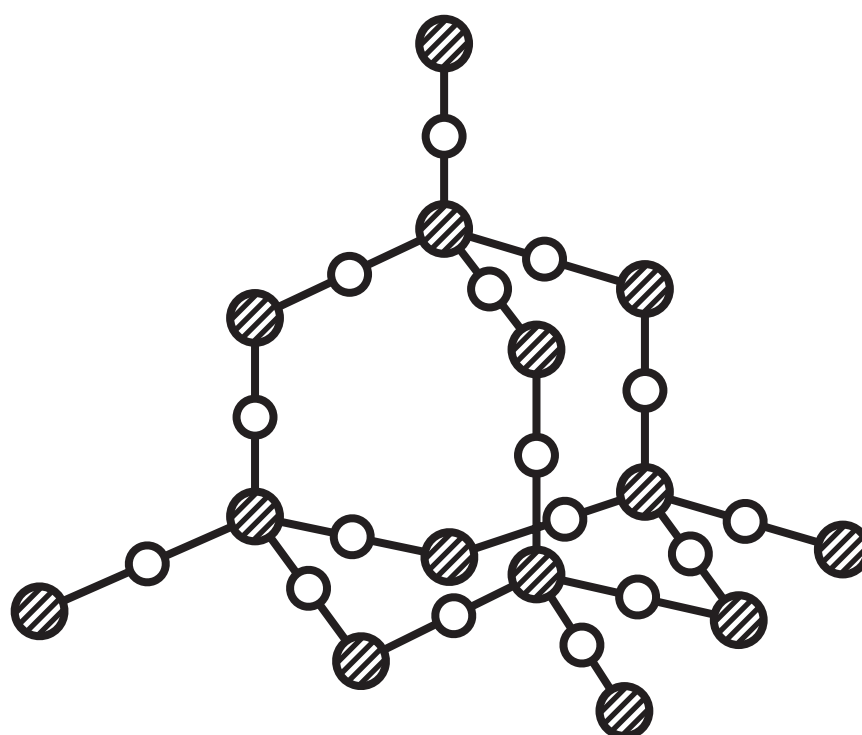
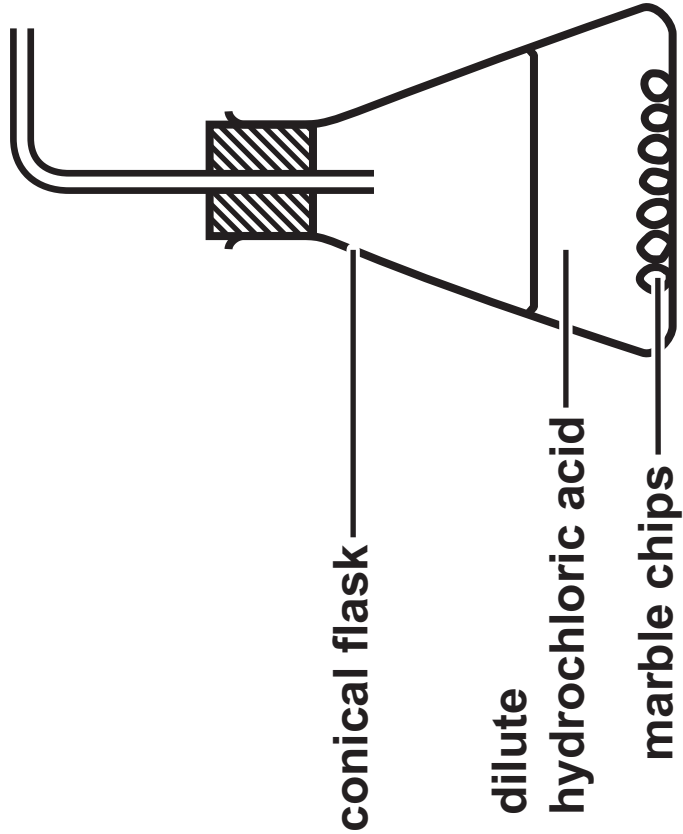


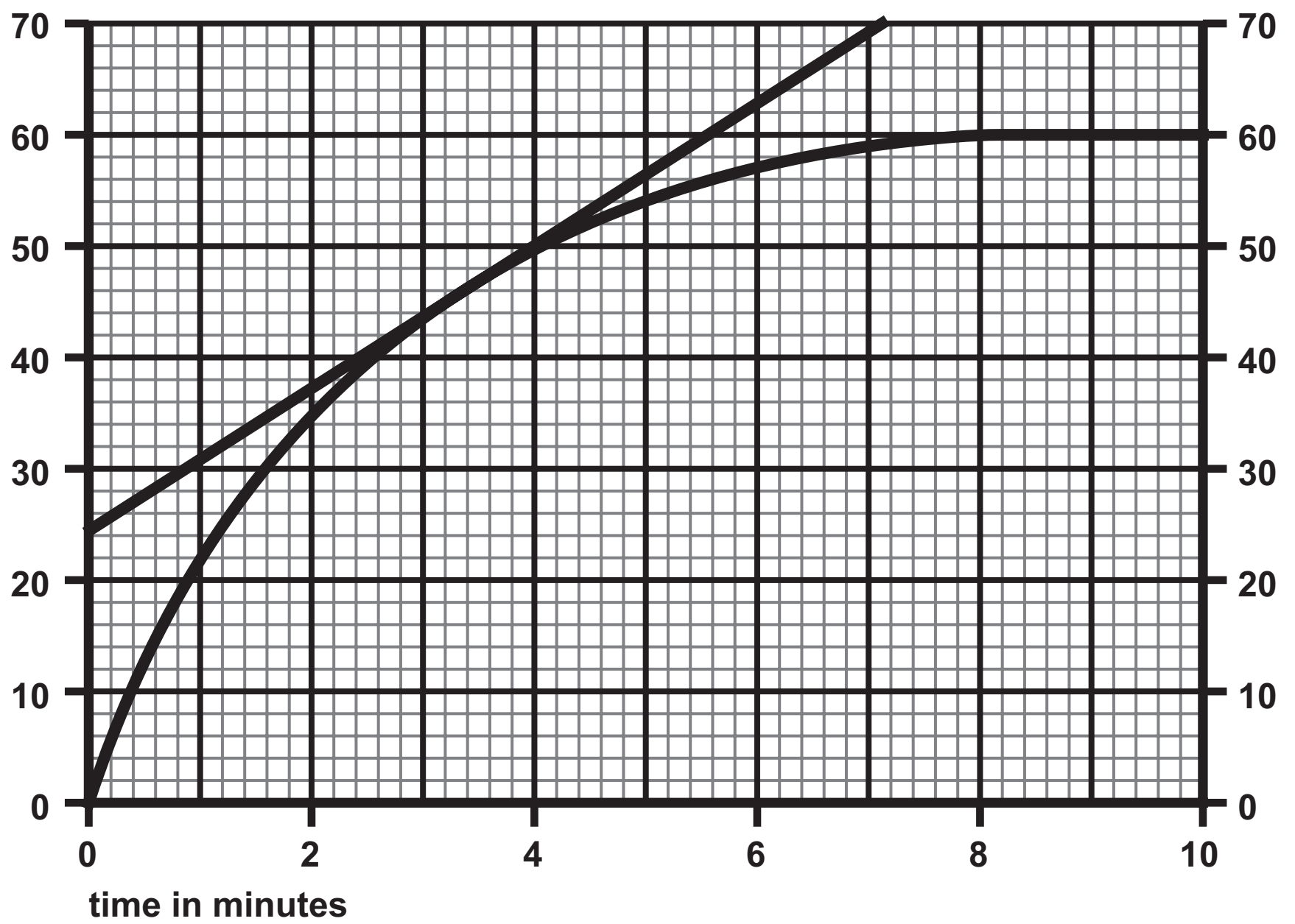
FIGURE 3



Question 2(b)

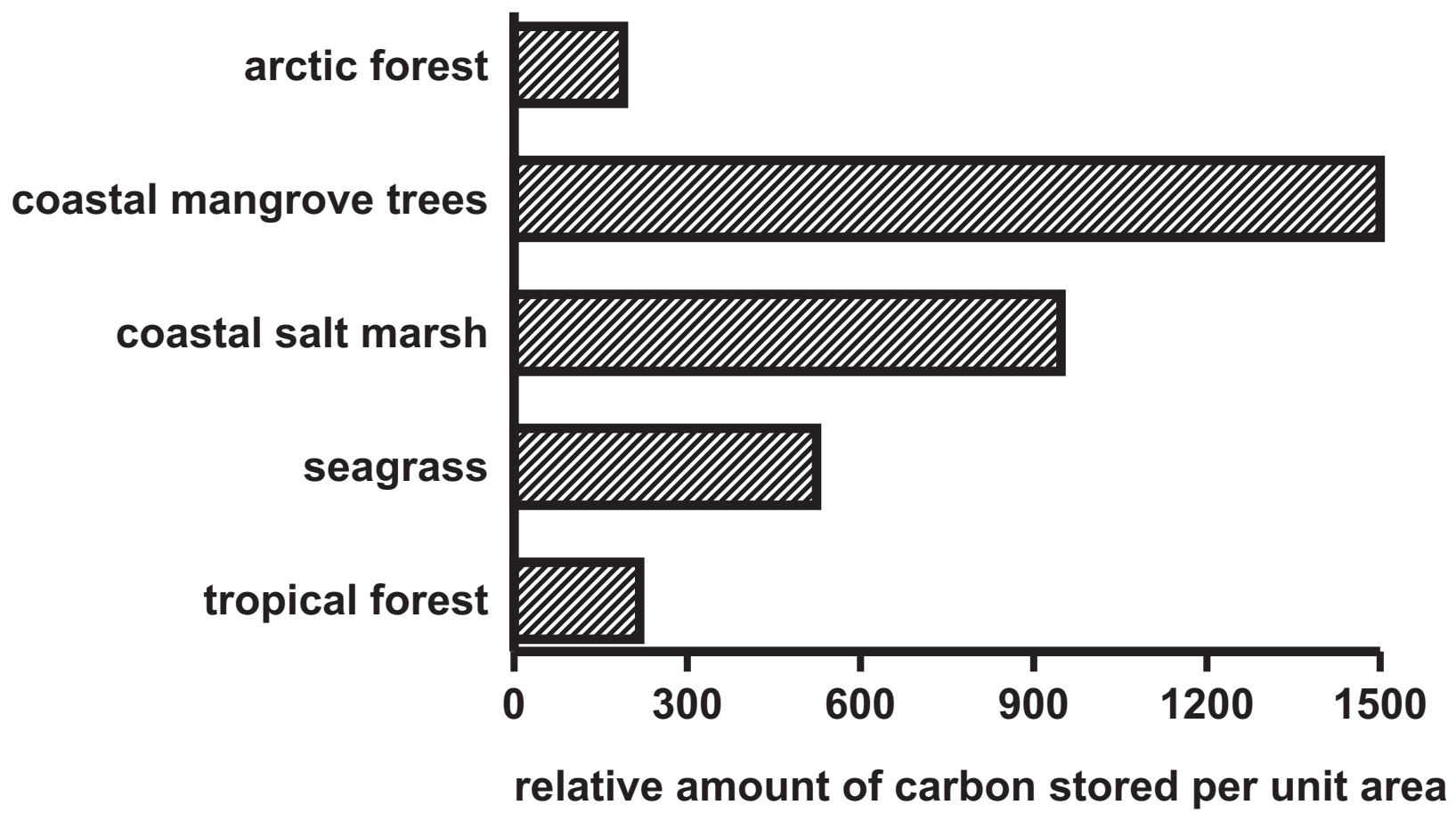
FIGURE 4

volume of carbon dioxide
in cm^3



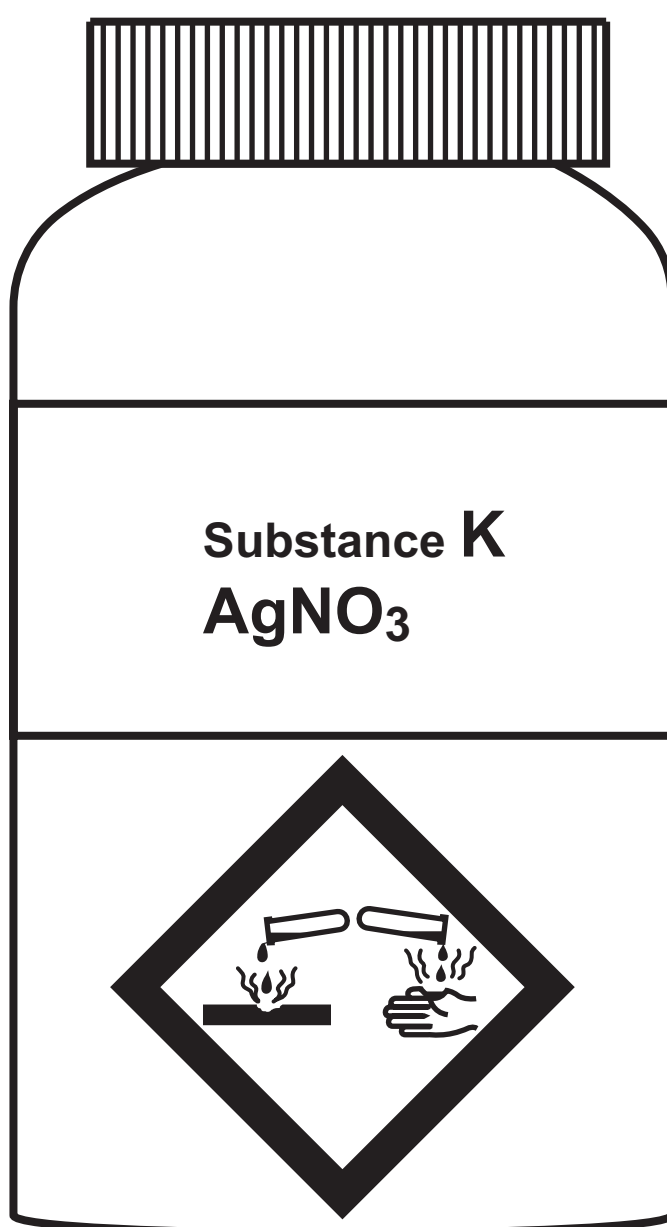
Question 3(d)

FIGURE 5



Question 4(a)

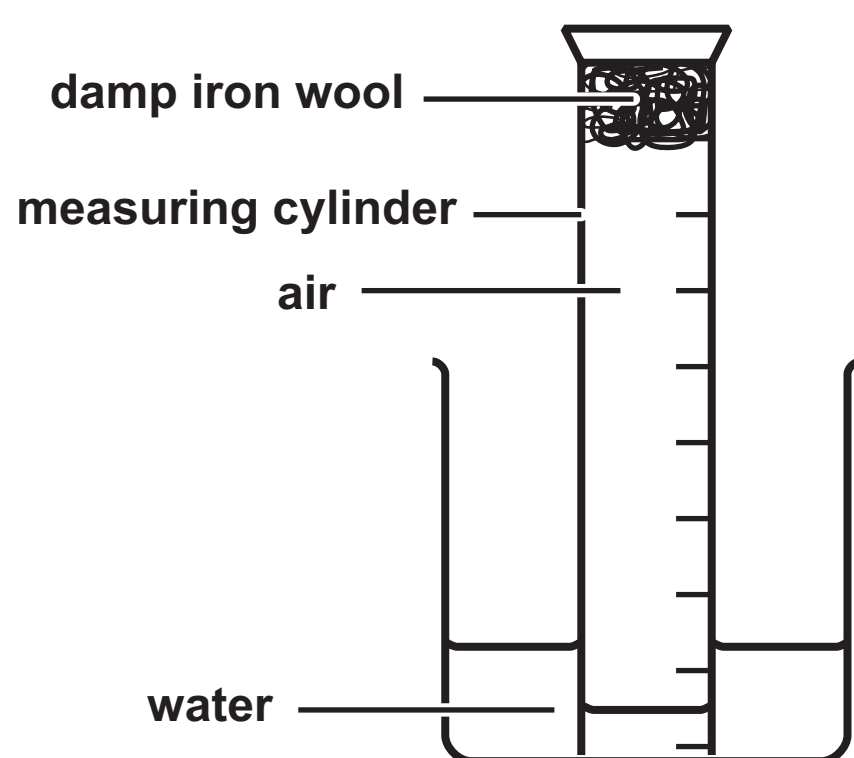
FIGURE 6





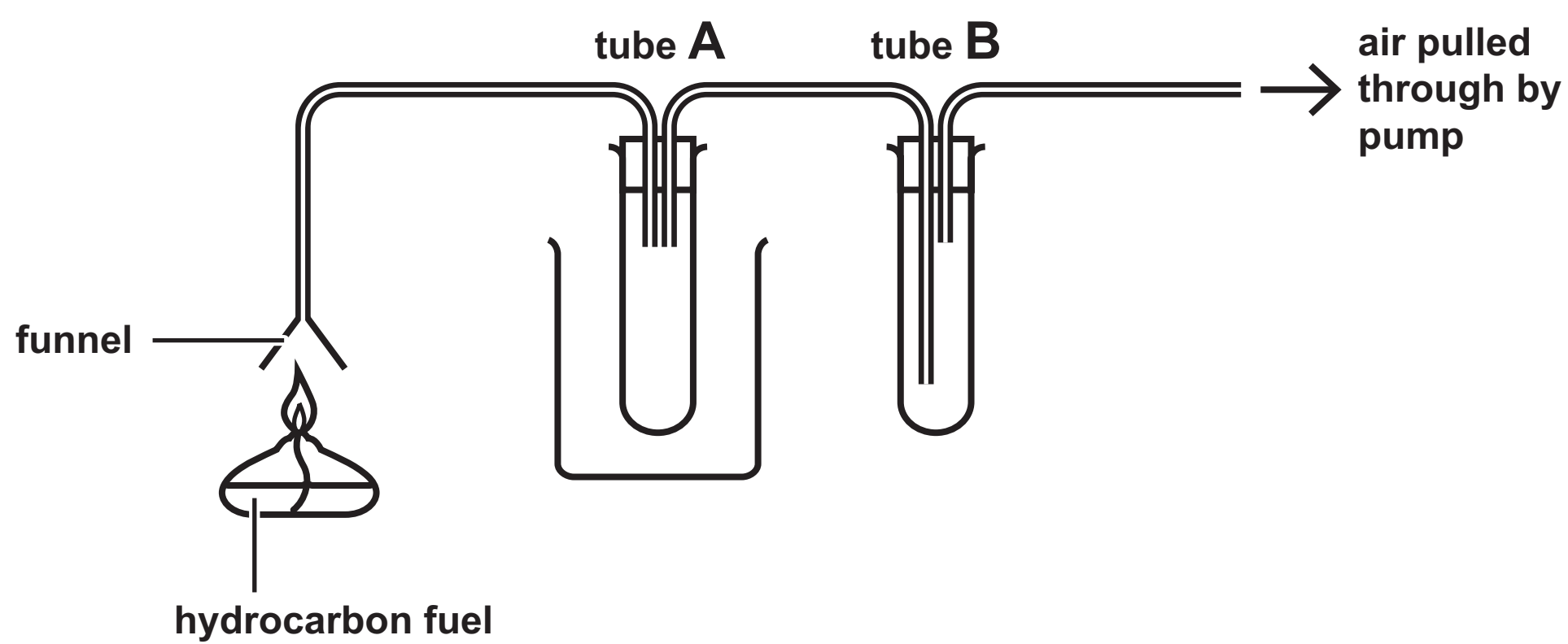
Question 6(a)

FIGURE 7



Question 6(b)(i)

FIGURE 8

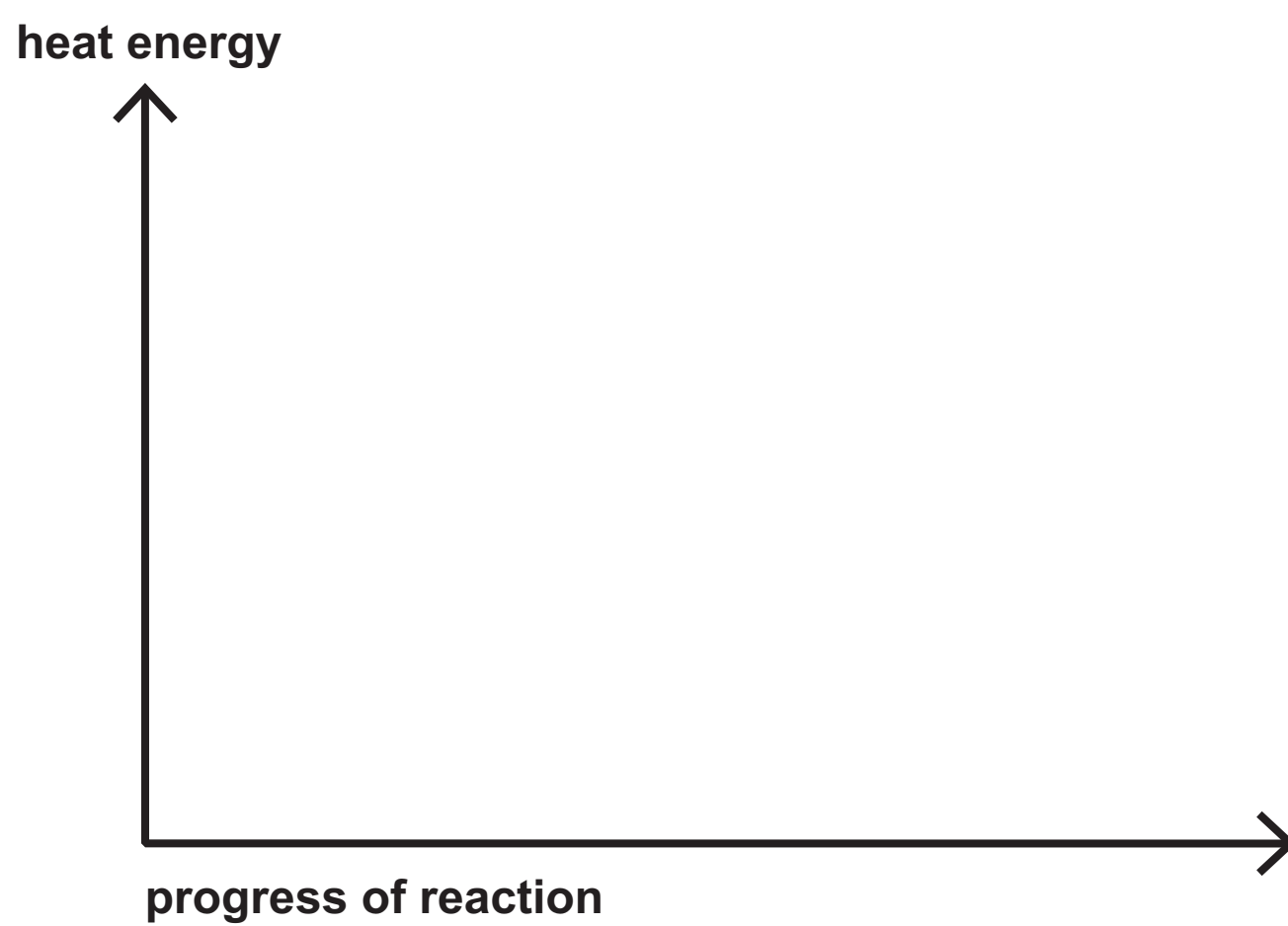


Question 7(b)(i)

_____ AND _____

Question 7(b)(ii)

FIGURE 9



Question 7(d)

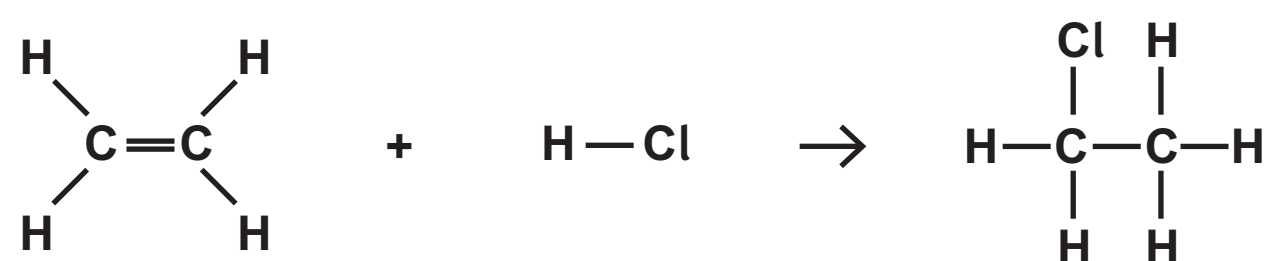


FIGURE 10

bond	bond energy in kJ mol^{-1}
C—H	412
C=C	612
C—C	348
H—Cl	431
C—Cl	338

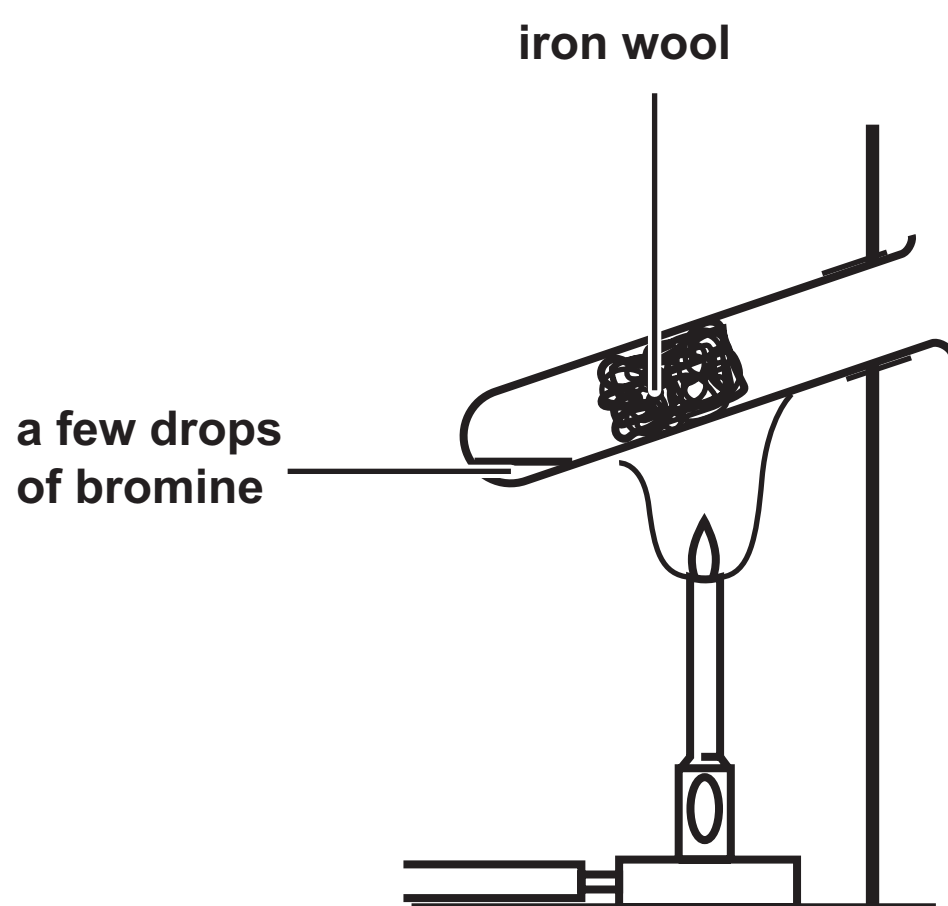
Question 8(c)

FIGURE 11

test	result
add solid R to water and shake	the white solid dissolves to form a colourless solution
add universal indicator to the solution of R	indicator turned blue
flame test with solid R	lilac flame produced
appearance of solution of S	colourless
add universal indicator to solution of S	indicator turns orange
add a small piece of magnesium to solution of S	bubbles of gas released and magnesium disappears
add spatula measure of solid R to solution of S	bubbles of gas released that turn limewater cloudy solid R disappears

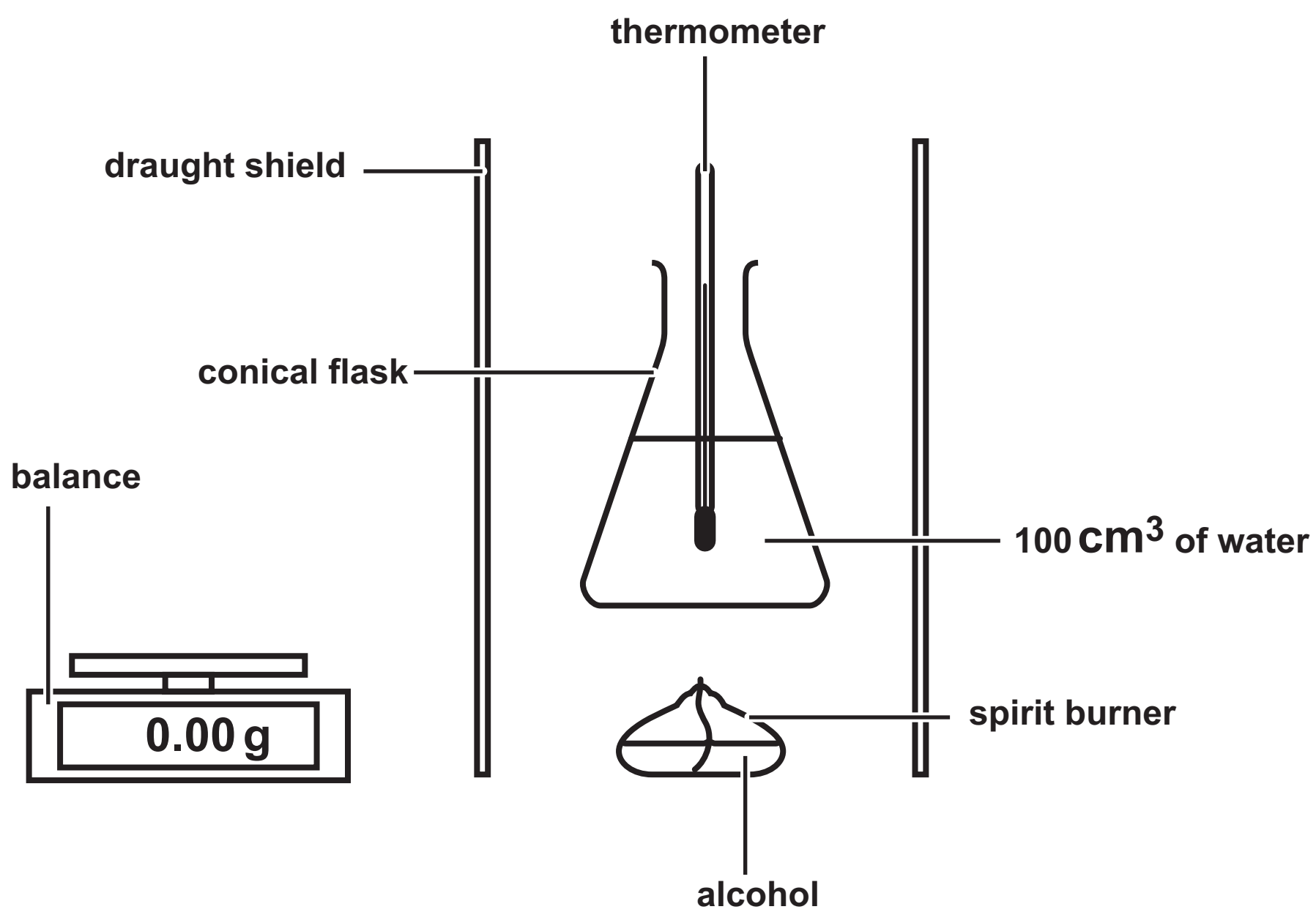
Question 9(b)

FIGURE 12



Question 10(a)

FIGURE 13



Question 10(b)

FIGURE 14

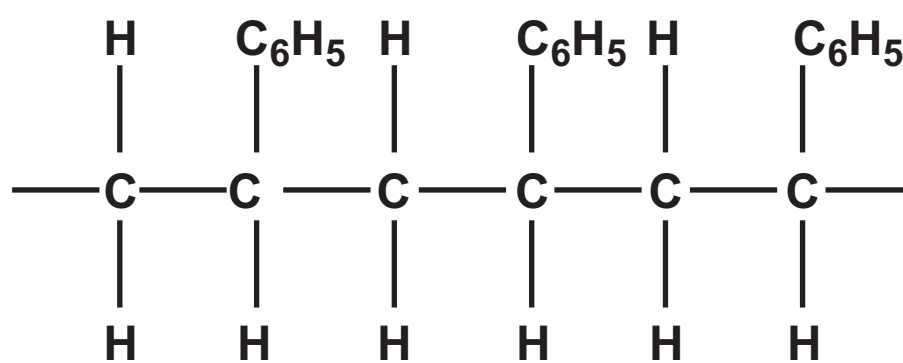
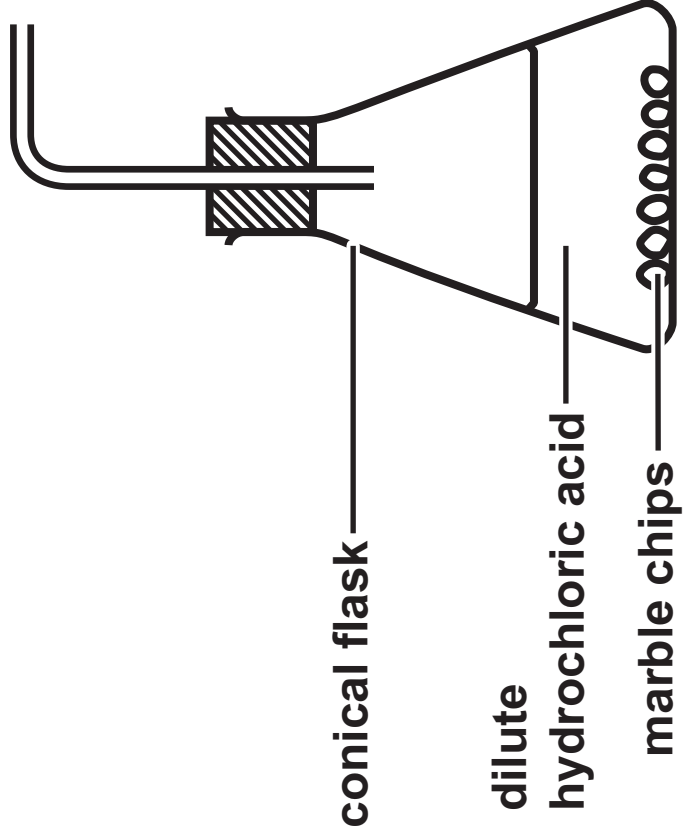


FIGURE 3



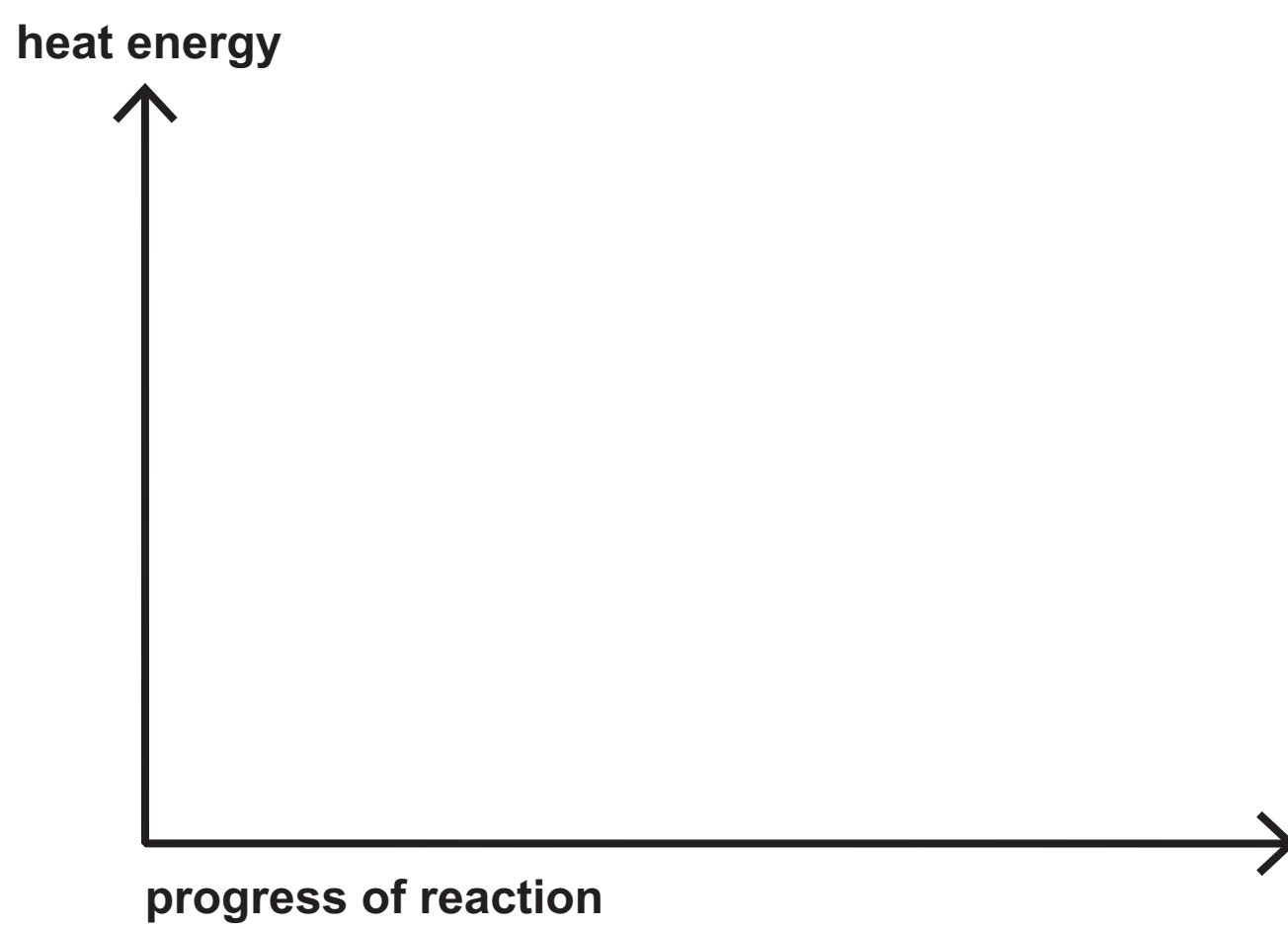


Question 7(b)(i)

_____ AND _____

Question 7(b)(ii)

FIGURE 9



Question 10(b)

FIGURE 14

