

Chemistry
UNIT: 4CH1
Science (Double Award) 4SD0
PAPER: 1C

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.

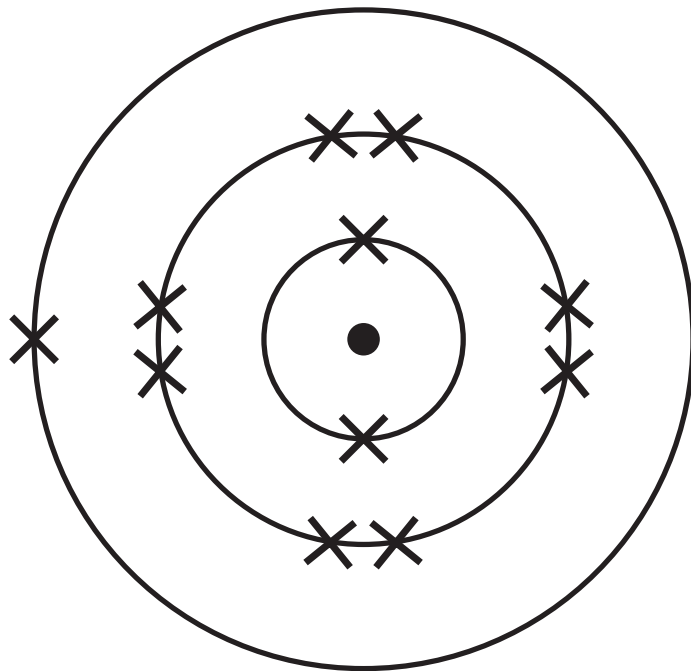
**THIS DIAGRAM BOOKLET *MUST* BE RETURNED WITH THE
QUESTION PAPER AT THE END OF THE EXAMINATION.**

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Question 1



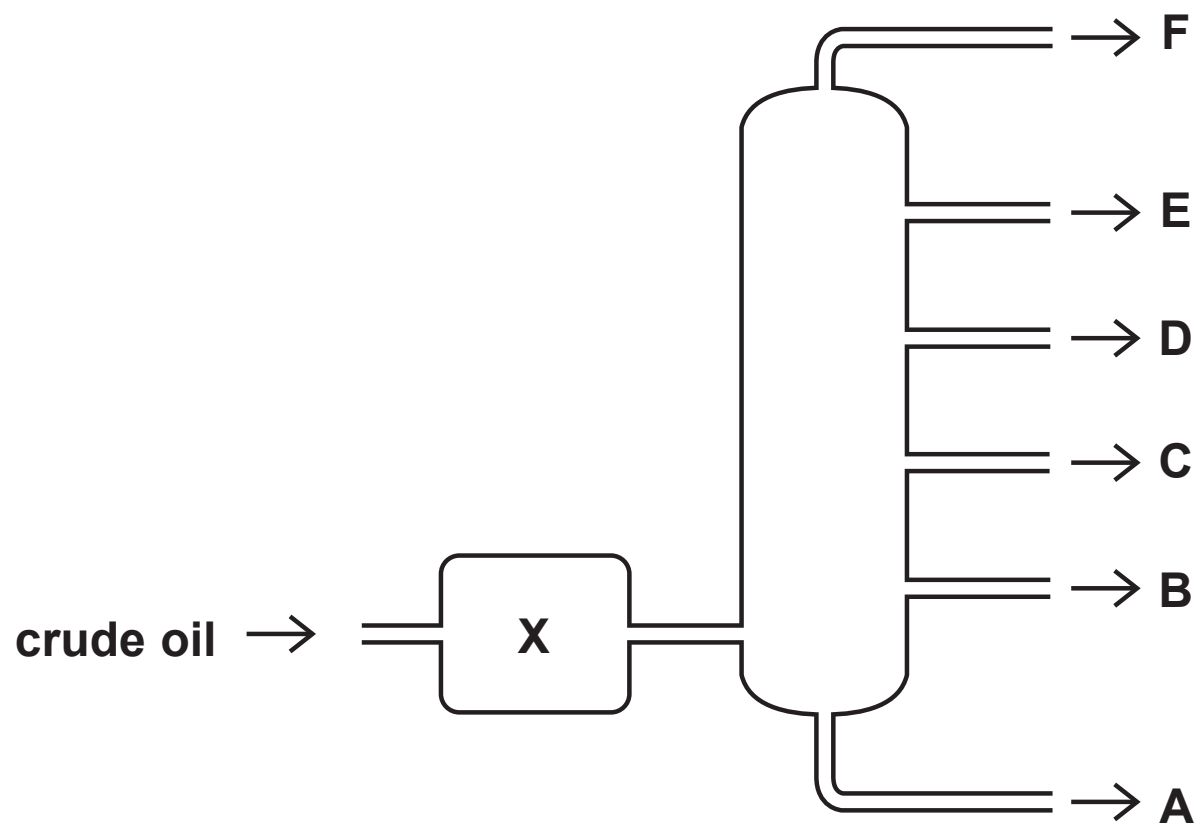
Question 2(a)

Physical change	Change of state
water to ice	
steam to water	
solid wax to liquid wax	
iodine crystals to iodine vapour	

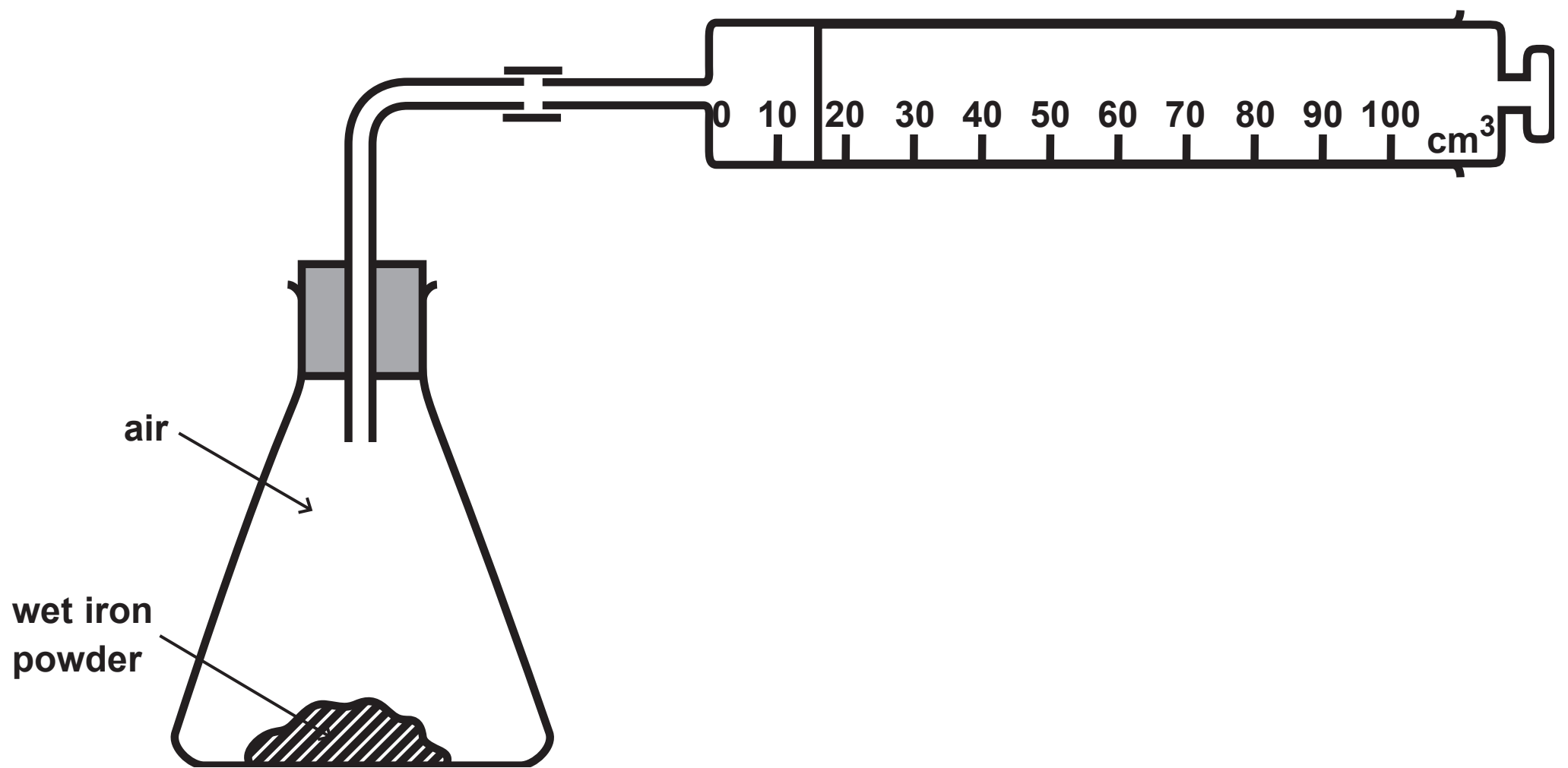
Question 2(a)

Physical change	Change of state
water to ice	
steam to water	
solid wax to liquid wax	
iodine crystals to iodine vapour	

Question 3(a)



Question 4(a)



Question 4(b)

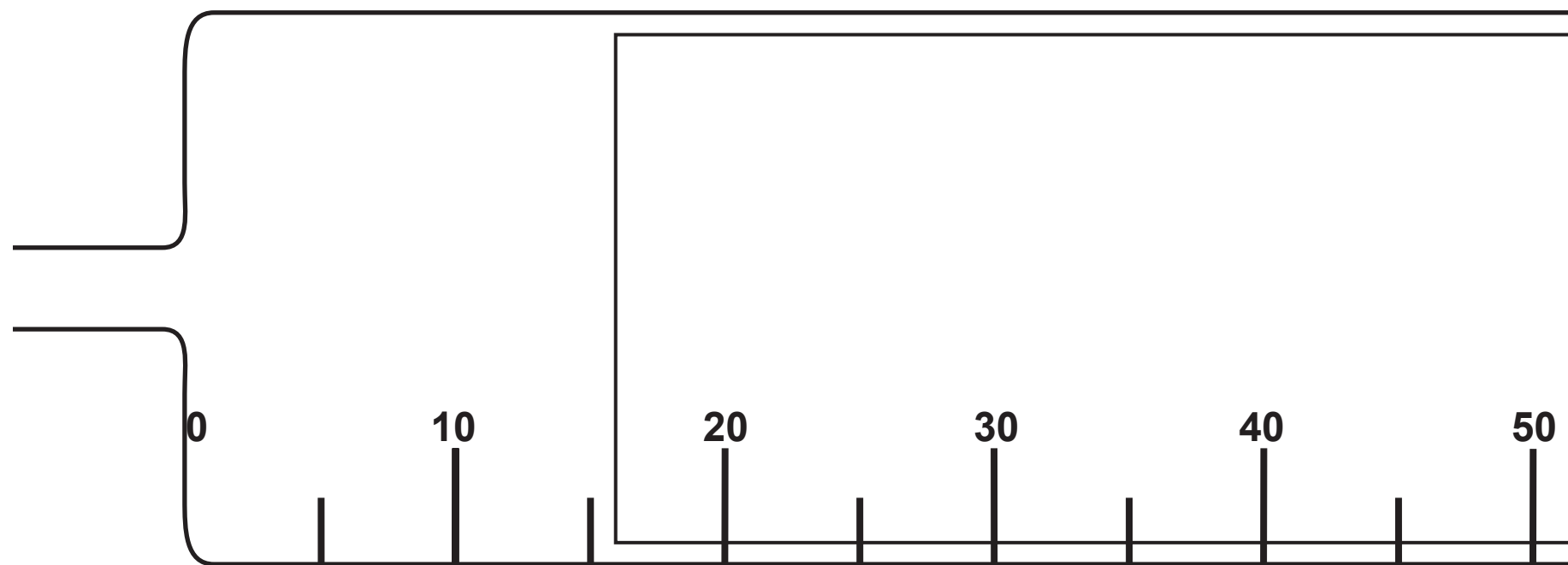


TABLE 1

syringe reading at start	
syringe reading at end	
change in volume in cm ³	65

Question 4(b)

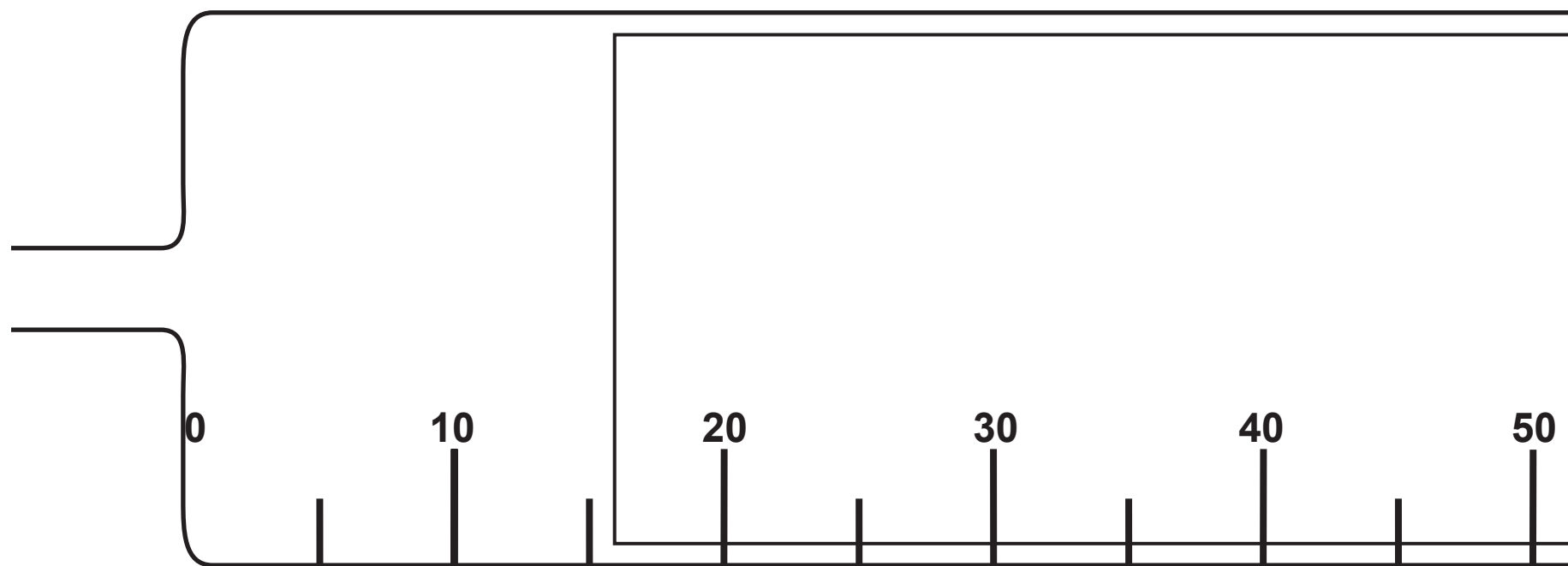


TABLE 1

syringe reading at start	
syringe reading at end	
change in volume in cm ³	65

Question 4(c)

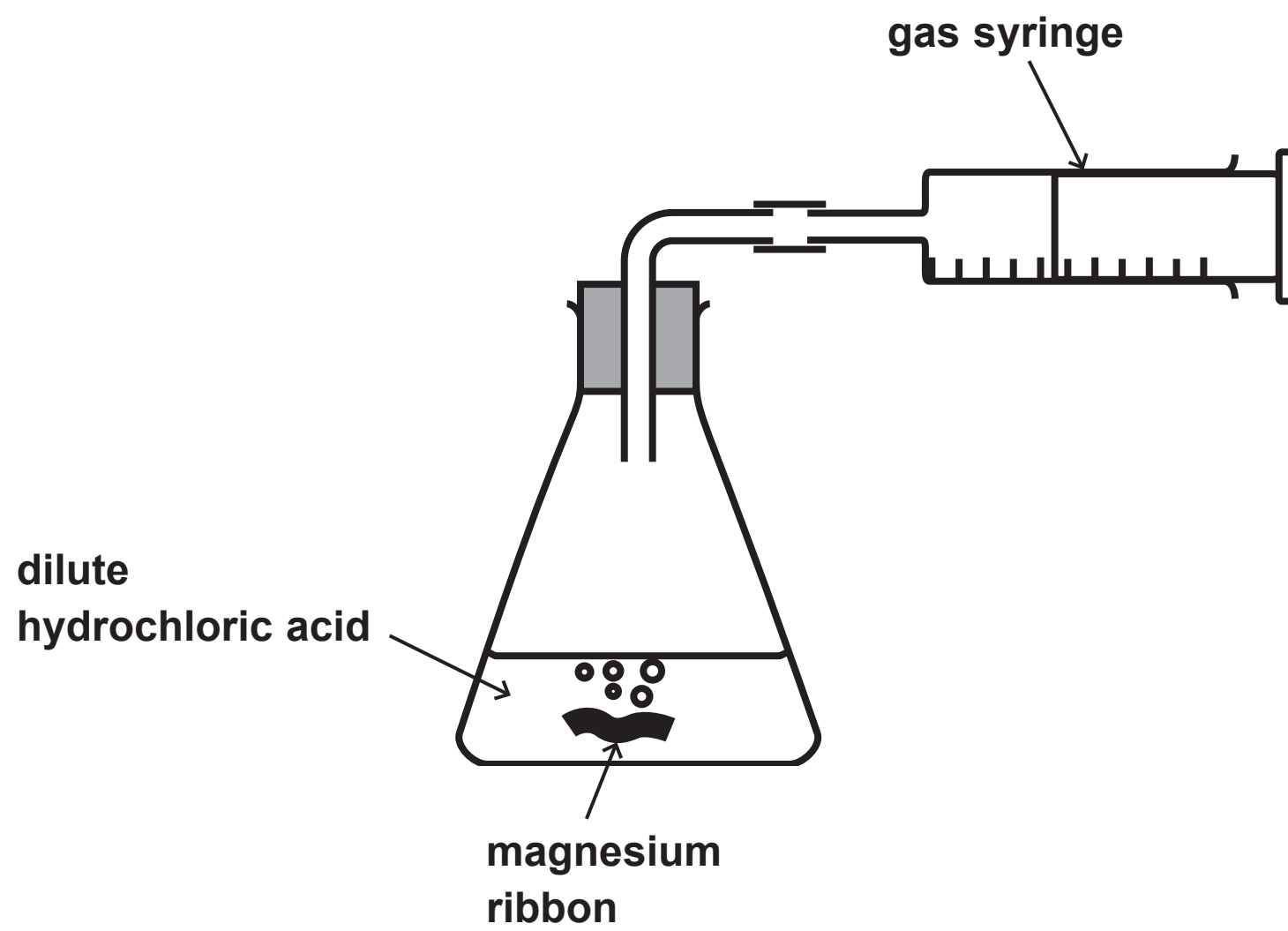
TABLE 2

volume of air in conical flask and glass tube in cm³	260
syringe reading at start	90
syringe reading at end	22

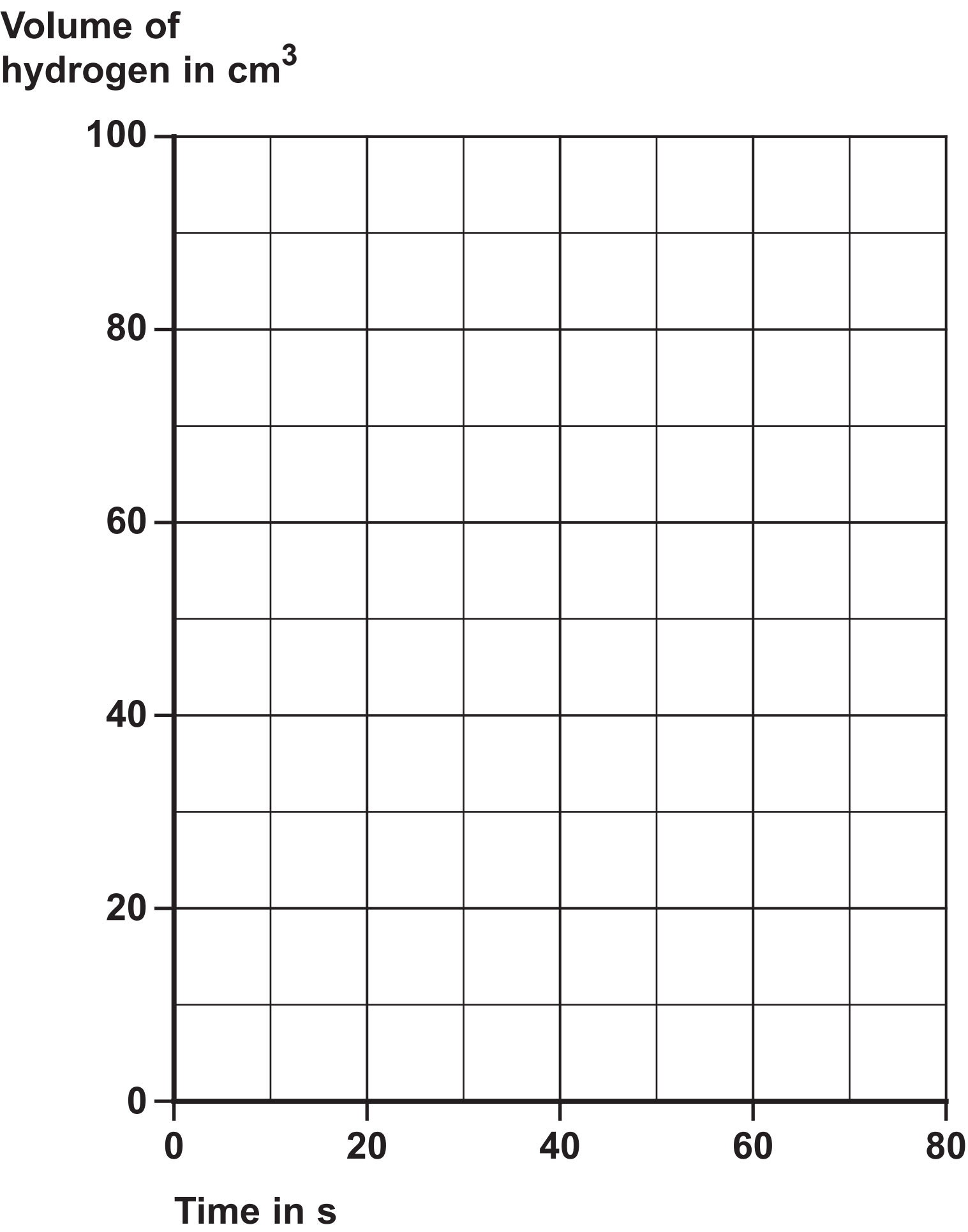
Question 5(a)(iv)**Isomer 1****Isomer 2**

Question 5(a)(iv)**Isomer 1****Isomer 2**

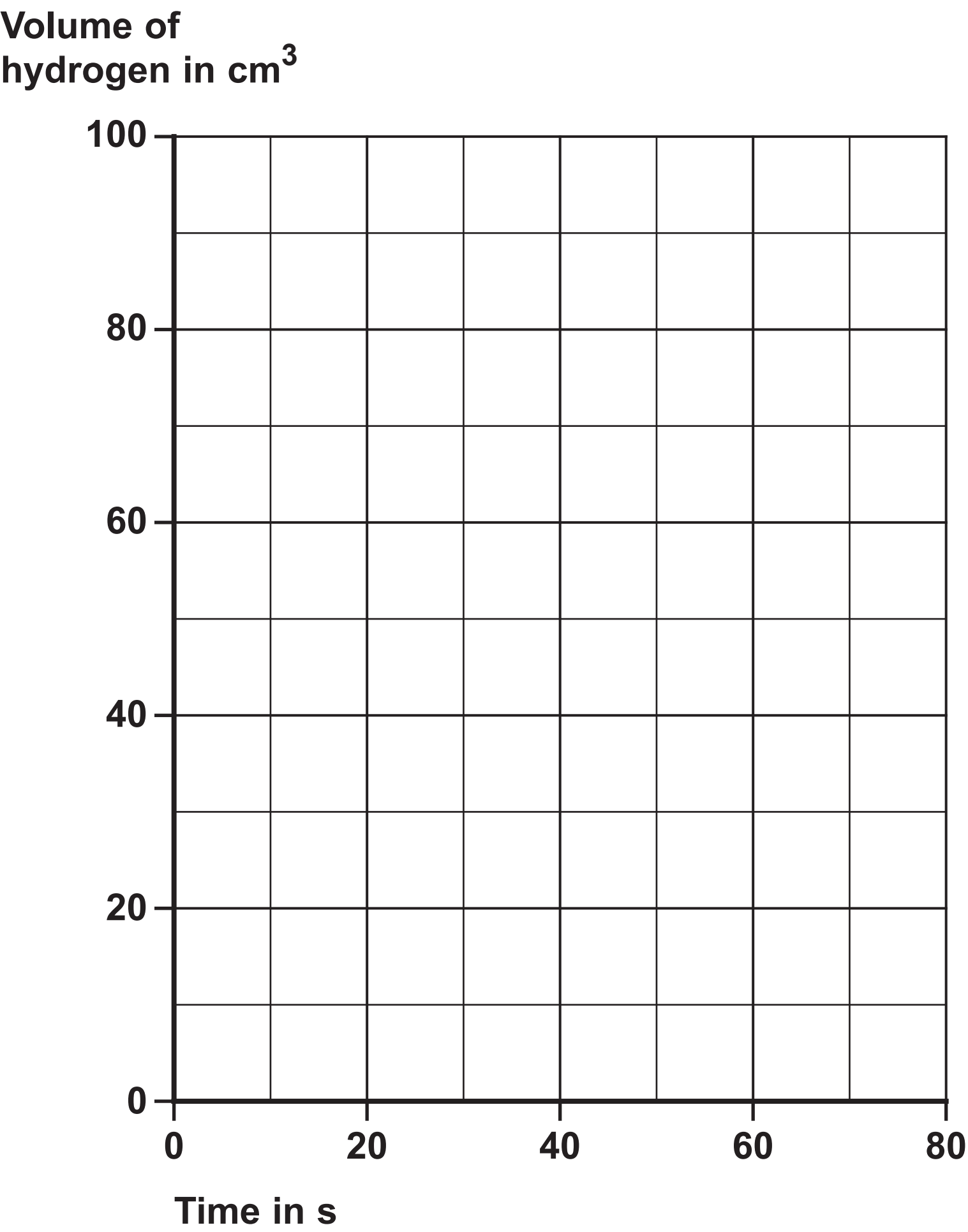
Question 6



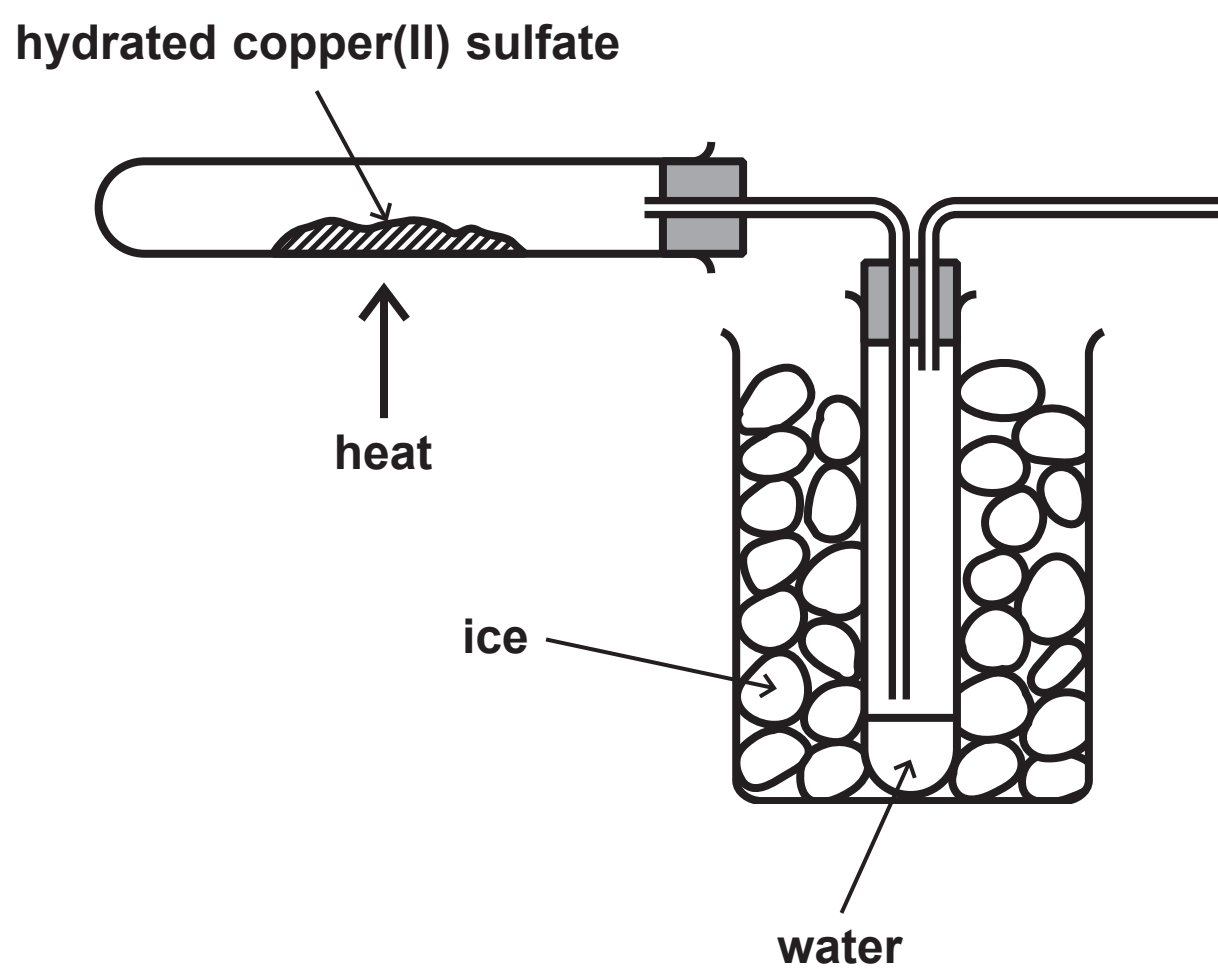
Question 6(b) and 6(c)



Question 6(b) and 6(c)



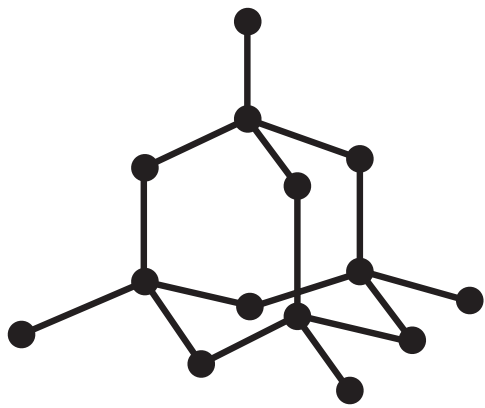
Question 7(c)



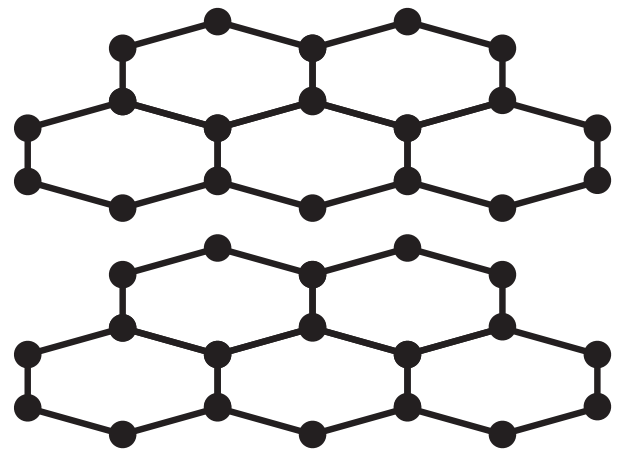
mass of empty tube in g	20.52
mass of tube and $\text{CuSO}_4 \cdot x\text{H}_2\text{O}$ in g	31.77
mass of tube and CuSO_4 in g	28.20

Question 8(a)

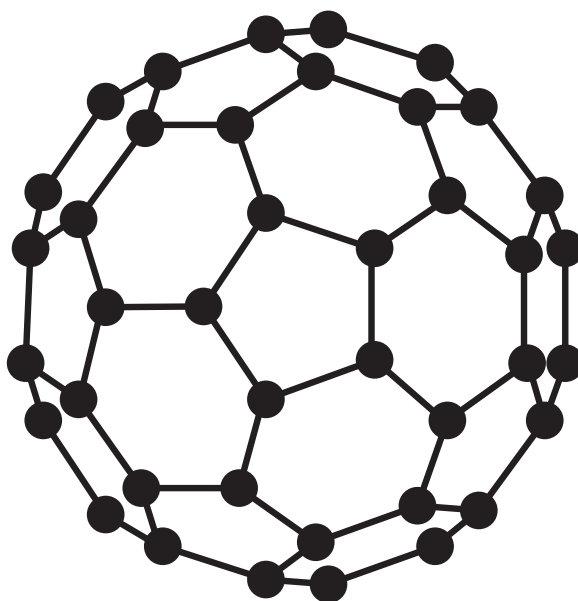
Diamond



Graphite



Question 8(b)



Substance	Approximate melting point in °C
diamond	4000
graphite	3600
C ₆₀ fullerene	600

Question 10(b)

Name	ammonium sulfate		ammonium carbonate
Formula	$(\text{NH}_4)_2\text{SO}_4$	NH_4Cl	

Question 10(b)

Name	ammonium sulfate		ammonium carbonate
Formula	$(\text{NH}_4)_2\text{SO}_4$	NH_4Cl	

Question 10(c)

Name	Formula	Percentage of nitrogen (%)	Approximate pH in solution
ammonia	$\text{NH}_3(\text{g})$	82	11
ammonium nitrate	$\text{NH}_4\text{NO}_3(\text{s})$		5.5
ammonium sulfate	$(\text{NH}_4)_2\text{SO}_4(\text{s})$	21	5.5