



Oxford Cambridge and RSA

GCSE Chemistry B (Twenty First Century Science)
J258/02 Depth in chemistry (Foundation Tier)

Question Set 7

1 Eve measures the volume of gas given off when solid calcium carbonate reacts with a dilute acid.

Fig 7.1 shows a graph of her results.

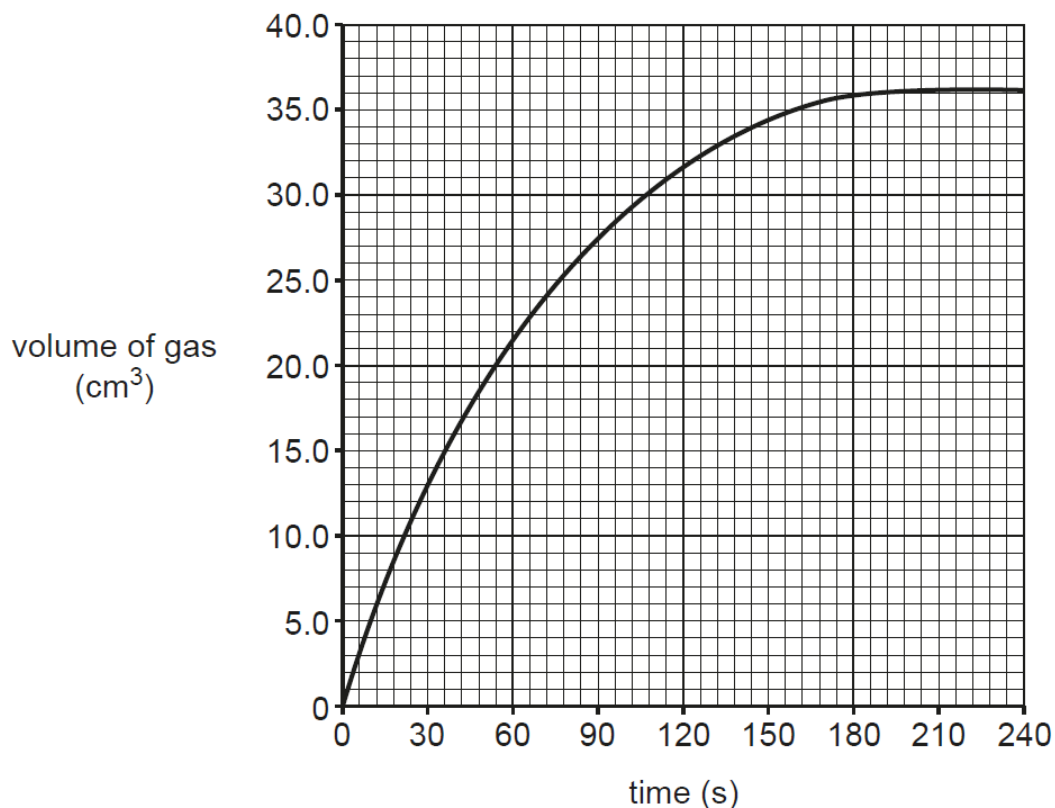


Fig 7.1

(a) (i) What volume of gas is given off during the first minute of the reaction?

Volume = cm³ [1]

(ii) What volume of gas is given off during the second minute of the reaction?

Volume = cm³ [2]

(b) Look at the graph in Fig 7.1.
Describe what happens to the rate of the reaction during the experiment. [2]

- (c) Eve does some more experiments.
She measures the rate of reaction when she uses different concentrations of acid.

Table 7.1 shows her results.

Concentration of acid (mol/dm ³)	Rate of reaction (cm ³ /s)
0.2	1.4
0.4	2.8
0.6	4.2
0.8	5.6
1.0	7.0

Table 7.1

- (i) Predict the rate of reaction when acid of concentration 0.5 mol / dm³ is used.

Rate of reaction = cm³ / s [2]

- (ii) Eve says that the data shows that rate of reaction is proportional to the concentration.

How does the data show that Eve is right? [2]

- (iii) Eve writes an expression to show that rate of reaction is proportional to concentration.

Which expression shows that rate of reaction is proportional to concentration?

Tick (✓) **one** box.

- | | | | |
|------------------|----------------------|---------------|--------------------------|
| rate of reaction | \rightleftharpoons | concentration | <input type="checkbox"/> |
| rate of reaction | \rightarrow | concentration | <input type="checkbox"/> |
| rate of reaction | \propto | concentration | <input type="checkbox"/> |
| rate of reaction | \sim | concentration | <input type="checkbox"/> |

[1]

Total Marks for Question Set 7: 10

OCR

Oxford Cambridge and RSA

Copyright Information

OCR is committed to seeking permission to reproduce all third-party content that it uses in its assessment materials. OCR has attempted to identify and contact all copyright holders whose work is used in this paper. To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced in the OCR Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download from our public website (www.ocr.org.uk) after the live examination series.

If OCR has unwittingly failed to correctly acknowledge or clear any third-party content in this assessment material, OCR will be happy to correct its mistake at the earliest possible opportunity.

For queries or further information please contact The OCR Copyright Team, The Triangle Building, Shaftesbury Road, Cambridge CB2 8EA.

OCR is part of the Cambridge Assessment Group; Cambridge Assessment is the brand name of University of Cambridge Local Examinations Syndicate (UCLES), which is itself a department of the University of Cambridge