Oxford Cambridge and RSA

GCSE Chemistry B (Twenty First Century Science)

J258/03 Breadth in chemistry (Higher Tier)

Question Set 26

1 Beth has some tablets that react by fizzing, and then dissolving, when water is added.

Beth puts a whole tablet into **Tube A**, and a broken-up tablet into **Tube B**.

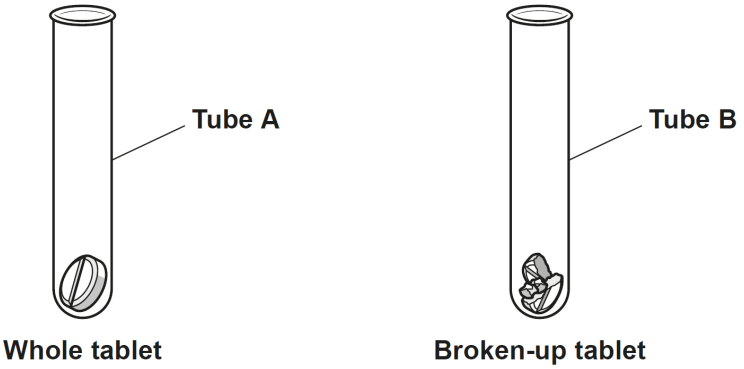

Fig 1.1

(a) Beth wants to measure the rate of the two reactions. This is Beth's method:

- Add the same volume of **cold** water to each test tube at the same time.
- Start a stopwatch.

(i) When should Beth stop the stopwatch?

Tick (✓) **one** box.

When the bubbles start to appear. ☐

When the fizzing starts. ☐

When the fizzing stops. ☐

When only a small amount of tablet is left. ☐

[1]

(ii) Which type of tablet, whole or broken-up, will dissolve more quickly?

Whole tablet ☐

Broken-up tablet ☐

Explain your answer.

Use ideas from the particle model in your answer. **[2]**

(b) Suggest **one** reason why the reactions are much faster using **hot** water. **[1]**

(c) **Fig. 2.2** shows how the mass of **Tube A** and its contents changes over time when cold water is added.

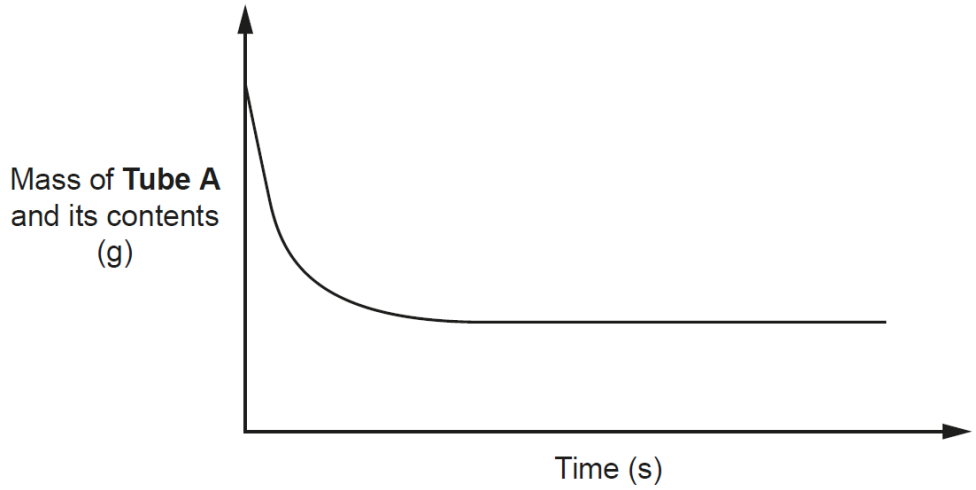

Fig 1.2

(i) Using **Fig. 2.2**, explain why the mass of **Tube A** and its contents decreases during the reaction. **[1]**

(ii) The rate of the reaction decreases with time.

Describe how **Fig. 2.2** shows this. **[1]**

(iii) Explain why the rate of reaction decreases with time. **[1]**

Total Marks for Question Set 26 : 7