

Name: _____ Class: _____

TOPICAL ASSESSMENT (2020/2021)

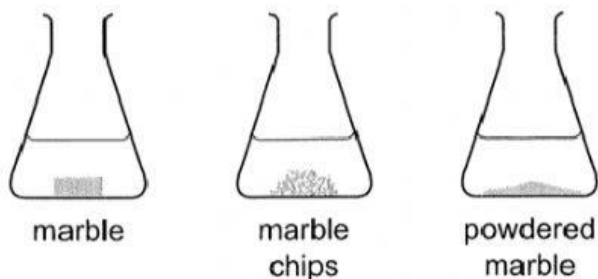
YEAR 9

TOPIC 8: RATES OF REACTION

Answer ALL questions below.

1. The chemical name for marble is calcium carbonate.

Equal masses of marble, marble chips and powdered marble are added to equal volumes of dilute hydrochloric acid as shown in the diagram below.



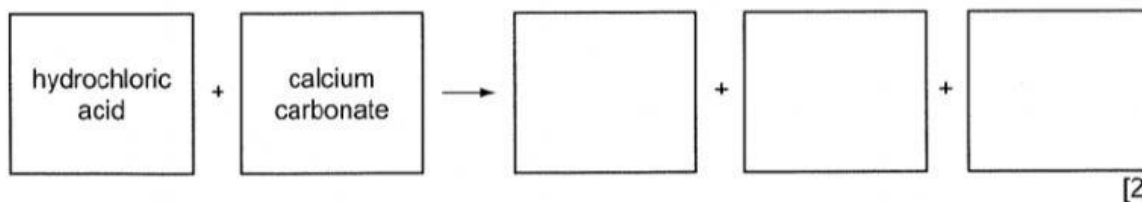
- (a)(i) Which of the reacts the fastest?

.....[1]

- (ii) Give a reason for your answer.

.....[1]

- (b) Complete the word equation for the reaction of dilute hydrochloric acid and calcium carbonate.



2. Two groups of students investigated the factors affecting the time taken for an indigestion tablet to dissolve in 100cm³ of water.



Group 1 recorded their results in the table below.

results of group 1

tablet	time taken to dissolve (s)
whole tablet	34
broken tablet	28
finely crushed tablet	22

- (a) What factor did Group 1 change as they carried out their investigation?
.....[1]

- (b) Before the investigation, Group 1 made a prediction. They found this prediction was supported by the results in the table.

What prediction did Group 1 make?

.....
.....[1]

- (c) Group 2 investigated how the temperature of the water affects the time taken for a whole tablet to dissolve.

Here are their results.

results of group 2

temperature of water (°C)	time taken to dissolve (s)
65	24
40	35
15	90
5	100

What factor did Group 2 change as they carried out their investigation?

.....[1]

- (d) What pattern do the results recorded by Group 2 show?

.....
.....[1]

3. In four experiments, zinc is added to acid to investigate how the speed of reaction can be changed.

In the table, write **more**, **less** or **the same** in the final column to show the effect of each change. [2]

change made	time for complete reaction of zinc after the change
Zinc powder is used instead of zinc lumps.	
The acid is made more dilute.	
The temperature of the reaction is increased.	
A catalyst is added instead of having no catalyst.	