A group of Year 12 Chemistry students wanted to know whether increasing ocean acidity increases the rate at which sea shells, $CaCO_3$, dissolve. They went to a beach to collect seawater and sea shells. In their school laboratory they crushed the sea shells and added 2.00 g of the resulting powder to five clean 250 mL beakers, each of which had been placed on top of its own electronic balance.

They split the seawater into five portions and bubbled carbon dioxide gas into four of the portions for different amounts of time. This gave the students 'natural' seawater plus four seawater samples of different pH. The various seawaters (150 mL portions) were then added to the beakers, with the weight of each beaker and its contents being recorded at timed intervals.

19. Which one of the following proposes a suitable hypothesis for the investigation?

(a) As the seawater becomes more acidic, the sea shell powder will dissolve faster.
(b) The sea shell powder will dissolve fastest in the most acidic seawater.
(c) Adding carbon dioxide to seawater changes the pH of the seawater.
(d) More of the sea shell powder will dissolve as time progresses.