

18. The acidification of oceans due to their increased concentrations of carbon dioxide decreases the rate and amount of calcification in some marine organisms, e.g. shellfish and coral reefs.

Which one of the following equations **best** represents the chemistry involved in decreasing the rate and amount of calcification?

- (a) $2 \text{H}^+ + \text{CaCO}_3 \rightarrow \text{Ca}^{2+} + \text{H}_2\text{O} + \text{CO}_2$
(b) $\text{CO}_2 + \text{H}_2\text{O} + \text{CO}_3^{2-} \rightarrow 2 \text{HCO}_3^-$
(c) $4 \text{H}^+ + 2 \text{CO}_3^{2-} \rightarrow \text{H}_2\text{CO}_3 + \text{H}_2\text{O} + \text{CO}_2$
(d) $\text{CO}_2 + \text{Ca(OH)}_2 \rightarrow \text{CaCO}_3 + \text{H}_2\text{O}$