

Marks
6

- Lactic acid, $\text{CH}_3\text{CHOHCOOH}$, is produced in the body during normal exercise. It is a monoprotic acid with a $\text{p}K_{\text{a}}$ of 3.86.

(a) What is the pH of a 0.10 M water solution of lactic acid?

Answer:

(b) Calculate the pH of the solution formed when 0.02 mol of $\text{Ca}(\text{OH})_2(\text{s})$ is added to 1.0 L of 0.10 M lactic acid.

Answer:

(c) Using equations, comment on how the final solution in (b) will respond to additions of small amounts (e.g. less than 0.01 mol) of acid or base in comparison to additions of the same amounts of acid or base to 1 L of water.