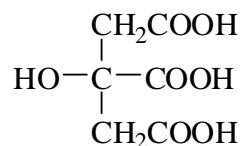
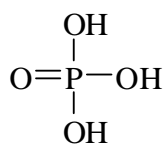


Marks
3

- Consider the two triprotic acids, phosphoric acid and citric acid.



Acid	Formula	K_{a1}	K_{a2}	K_{a3}
phosphoric	H_3PO_4	7.1×10^{-3}	6.3×10^{-8}	4.5×10^{-13}
citric	$\text{C}_6\text{H}_8\text{O}_7$	7.1×10^{-4}	1.7×10^{-5}	6.4×10^{-6}

Explain why $K_{a1} > K_{a2} > K_{a3}$ for both acids.

For phosphoric acid, the K_a values differ by about 5 orders of magnitude while for citric acid there is a much smaller difference. Explain.