

<ul style="list-style-type: none">Write a balanced equation for the dissolution of $\text{Ca}_5(\text{PO}_4)_3\text{OH}$, hydroxyapatite, the mineral component of teeth, in water.	Marks 1
$\text{Ca}_5(\text{PO}_4)_3\text{OH}(\text{s}) \rightarrow 5\text{Ca}^{2+}(\text{aq}) + 3\text{PO}_4^{3-}(\text{aq}) + \text{OH}^-(\text{aq})$	
<ul style="list-style-type: none">Briefly explain why transition metal ions are often found in biological enzyme systems.	2
<p>The transition metal ions provide binding sites for substrates that readily accommodate changes in geometry. Depending on the metal, they can also allow for redox reactions, such as $\text{Fe}^{2+}/\text{Fe}^{3+}$ and $\text{Cu}^{2+}/\text{Cu}^+$, for oxidizing or reducing substrates.</p>	