

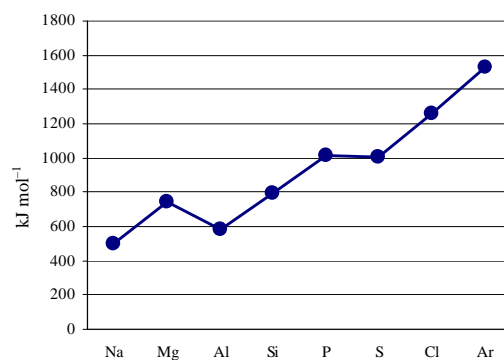
<ul style="list-style-type: none">• Write a balanced equation for the dissolution of $\text{Ca}_5(\text{PO}_4)_3\text{OH}$, hydroxyapatite, the mineral component of teeth, in water.	Marks 1
<ul style="list-style-type: none">• Briefly explain why transition metal ions are often found in biological enzyme systems.	2

- In general terms, which elements in the periodic table are likely to be essential elements for living species and which ones are likely to be toxic. Explain.

Marks
2

- The diagram below shows the general trend for the first ionisation energy for some *s* and *p* block elements.

3



How will the general trend differ for the second ionisation energy of these elements (*i.e.* $X^+(g) \rightarrow X^{2+}(g) + e^-$)? Explain.