• Give the equation for the dissolution of hydroxyapatite, Ca<sub>5</sub>(PO<sub>4</sub>)<sub>3</sub>(OH), in water.

Marks 2

$$Ca_5(PO_4)_3(OH)(s) \iff 5Ca^{2+}(aq) + 3PO_4^{3-}(aq) + OH^{-}(aq)$$

What is the formula for the solubility product constant for hydroxyapatite?

$$K_{\rm sp} = [{\rm Ca}^{2+}({\rm aq})]^5 [{\rm PO_4}^{3-}({\rm aq})]^3 [{\rm OH}^-({\rm aq})]$$