

**Marks****2**

- In order to reduce the incidence of dental cavities, water is fluoridated to a level of  $1 \text{ mg L}^{-1}$ . In regions where the water is “hard” the calcium concentration is typically  $100 \text{ mg L}^{-1}$ . Given that the  $K_{\text{sp}}$  of calcium fluoride is  $3.9 \times 10^{-11} \text{ M}^3$ , would it precipitate in these conditions? Show all working.

Answer: