

Question 26 (5 marks)

Water can be described as either 'hard' or 'soft'.

- (a) Describe a test you have used to determine whether a given sample of water is 'hard' or 'soft'. 2

.....you can test if water is.....
 'hard' or 'soft' if you test for
 other molecules in the water.....
 i.e., test for magnesium.....

- (b) A sample of hard water contains $6 \times 10^{-4} \text{ mol L}^{-1}$ of magnesium carbonate. 3

Calculate the mass, in mg, of magnesium carbonate in 150 mL of this sample.

.....
 $0.15 \times (6 \times 10^{-4}) = 9 \times 10^{-5}$
 $\therefore \text{magnesium carbonate} = 0.00009 \text{ mg}$

