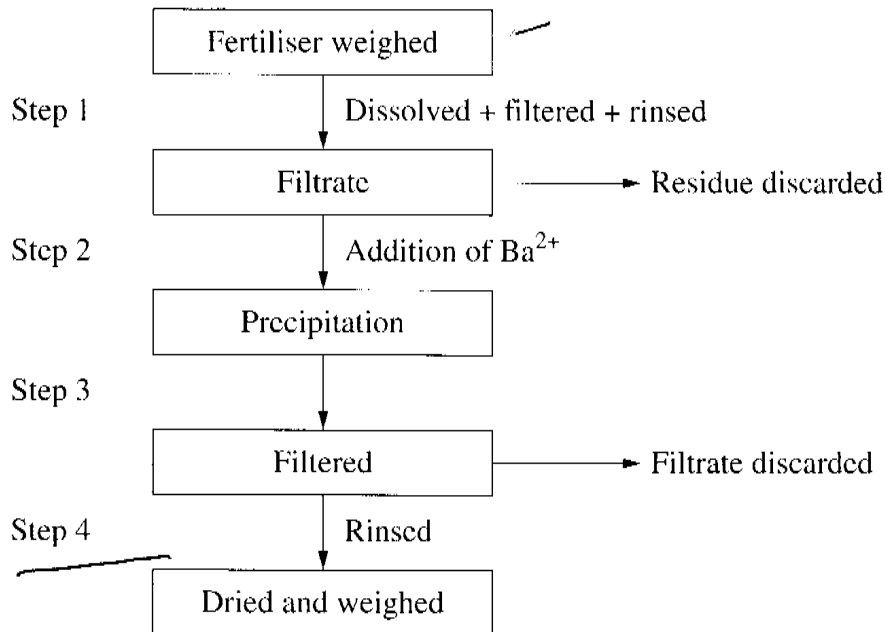


Question 29 (6 marks)

The flowchart shown outlines the process used to determine the amount of sulfate present in a sample of lawn fertiliser.



- (a) What assumptions were made and how do these affect the validity of this process? 3

The assumptions made were that the addition of Ba^{2+} would react with other objects in the fertiliser resulting in sulfate not being reached or altered. This affects the validity of this process as it may result in some sulfate reaching and ~~at~~ altering the end result of sulfate collected.

- (b) It was found that 4.25 g had a sulfate content of 35%. 3

What is the mass of the dried precipitate at Step 4? Include a chemical equation in your answer.

$$\text{Sulfate} = c = \frac{m}{M} \quad m = \frac{M}{c}$$

$$M \text{ of sulfate} = 32.7$$

$$c = 35\%$$

$$\therefore 0.35 \quad \therefore \text{mass} = \frac{32.7}{0.35} = 93.42 \text{ g}$$