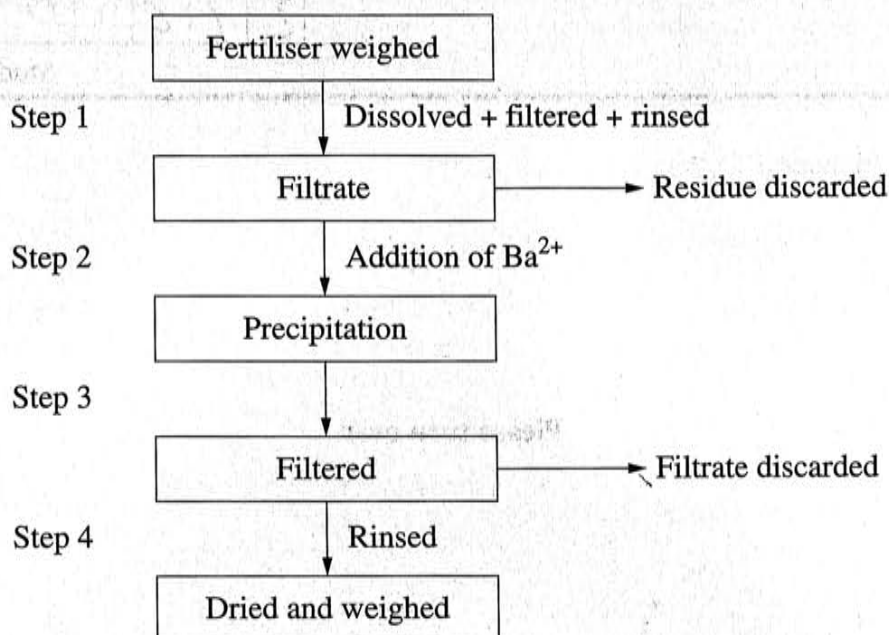


## Question 29 (6 marks)

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

Assumptions: 1) No sulfate was present in the residue discarded in step 1. 2) All sulfate was precipitated completely by  $\text{Ba}^{2+}$ . 3) In step 3, when the filtrate was discarded, it is assumed that there is no sulfate present in the filtrate.   
 These assumptions affect the validity of the experiment as they may not achieve a result that states the sulfate content is lower than the actual amount in the soil.

- (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.

