1. Synthesis of 4-nitroaniline

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Date of report submission (yyyy/mm/dd):_____

Dates of experiment (yyyy/mm/dd) 1st day:_____; 2nd day:_____

Write concisely (in the space provided)

【Summary of Experiment】

【Results】

1. Reagent

	Mass used (g)	Moles used (mol)
acetanilide		

2. Theoretical yield of 4-nitrolaniline

Theoretical yield (g)	Equation for obtaining theoretical yield

3. Yield of 4-nitroaniline

Crude yield (g)	Crude yield (%)	Purified yield (g)	Purified yield (%)

4. Colour, shape and melting point of purified 4-nitroaniline

Colour	Shape	Melting point (°C)

5. TLC Analysis

	acetanilide	4-nitroacetanilide	4-nitroaniline
Rf			

【Questions】

1. Write a flowchart for the synthesis of 4-nitroaniline from acetanilide, and note the observed changes in the reaction mixture and sample.
2. Explain the difference between natural filtration and suction filtration, considering both the purpose and application.
3. Explain the possible presence or absence of by-products in the synthesis of 4-nitroaniline from acetanilide, their expected structure(s), and formation process(es).
4. Explain why in this experiment we synthesize 4-nitroaniline after conversion to 4-nitroacetanilide rather than attempting to first perform a nitration of acetanilide.