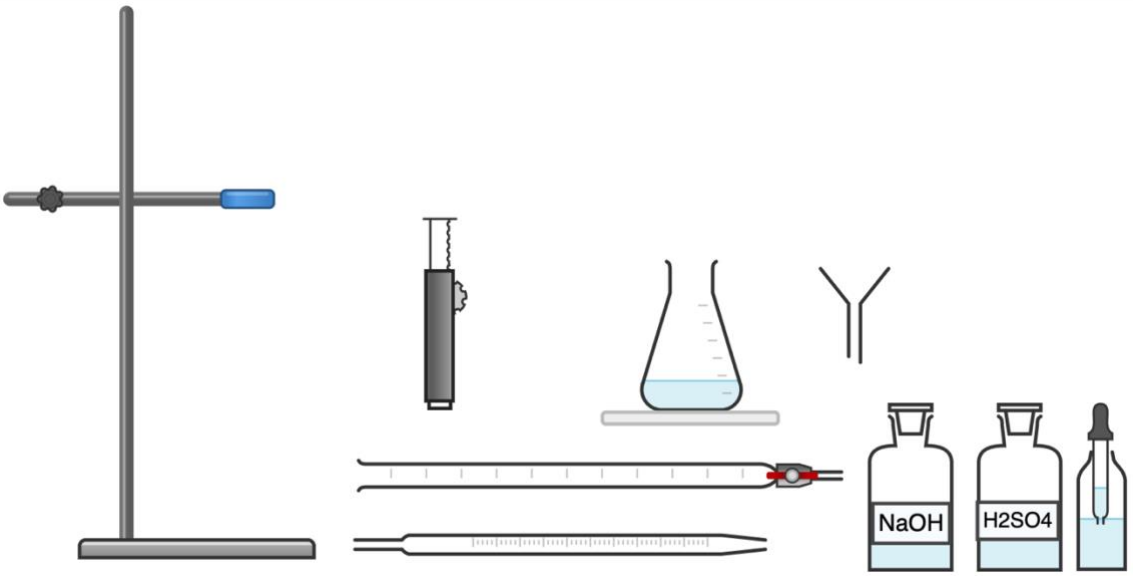
Read the exam style question carefully, then fill in each section below.

Question:

A student wants to determine the volume of a sample of sodium hydroxide that reacts with 25 cm^3 of 0.1 mol/dm^3 sulfuric acid. The apparatus they can use is shown below.

a. Describe a method that could be used to find the volume of sodium hydroxide that reacts with the sulfuric acid. **(6)**

b. Describe how they could use measurements to calculate the concentration of the sodium hydroxide. **(3)**



Section 1: At first glance

1. What **command words** are used in this question? Circle them clearly.

2. **Underline the key information** in the question above.

2. **How many marks** is this question worth?

Section 2: Thinking ahead

Science Mastery

Read the question again.

What do you need to know in order to answer this question really well?

Can you split the question into two or more parts?
Are there any labelled diagrams that might help you to show your answer?

What are the key words that you should include in your answer?

Section 4: Space to plan

Use this space to plan your answer.

Section 4: Answer the question

Section 5: Mark Scheme

a.

Point	Mark
Fill burette with sodium hydroxide	1
Use pipette to measure 25 cm^3 of sulfuric acid	1
Add a few drops of indicator (phenolphthalein) to the beaker/conical flask with acid	1
Slowly add sodium hydroxide from burette to conical flask	1
Swirl while adding/add sodium hydroxide drop wise	1
Identify the end point of the reaction when the indicator changes colour	1

b.

Point	Mark
Use the concentration and volume of H_2SO_4 to calculate the number of moles of H_2SO4 that reacted (n=cxv)	1
Use the mole ratio from the balanced chemical equation to determine the number of moles of NaOH that reacted	1
Calculate the concentration of NaOH using number of moles and measured volume C= n/v	1