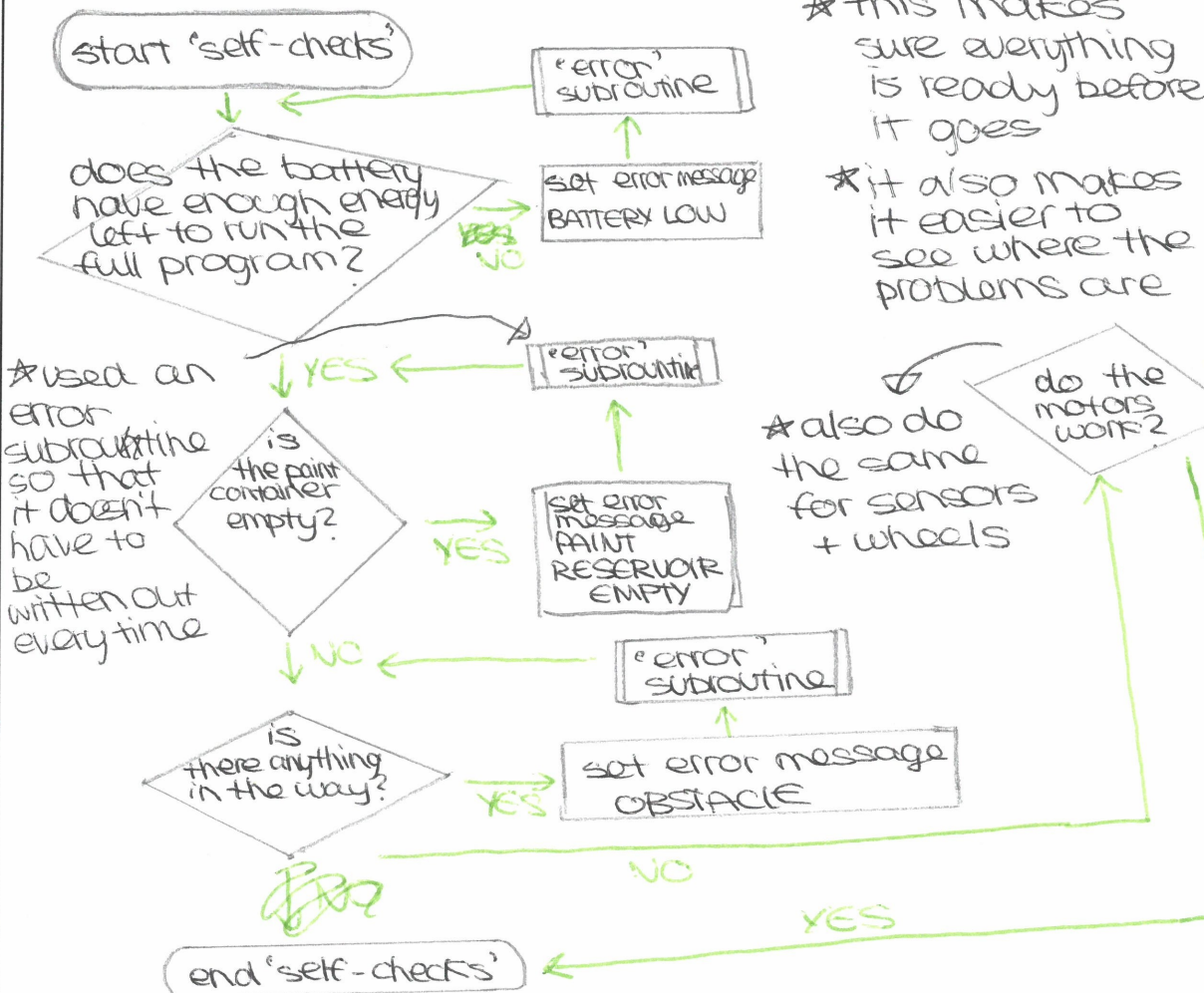


breaking the algorithms up into subroutines makes it easier for the programme to be tested and debugged

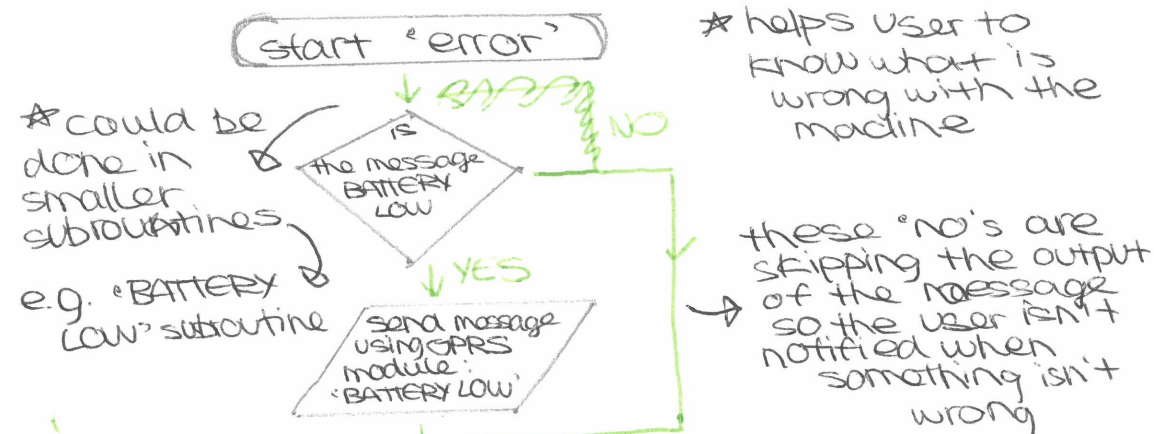
also makes it easier to test

### self-check subroutine

- ★ this part occurs immediately after the machine is turned on
- ★ contains self-checks to make sure everything is working before it runs

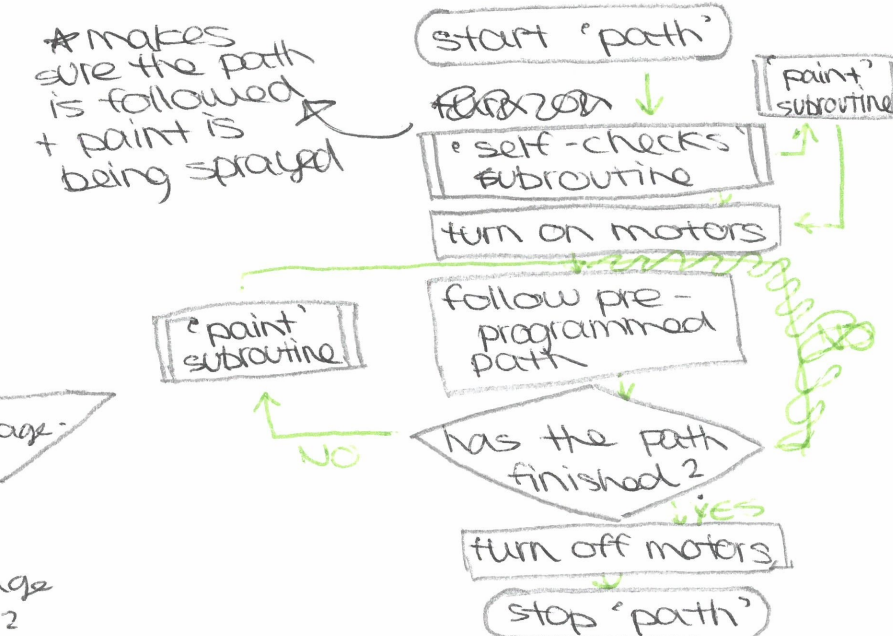


### error subroutine

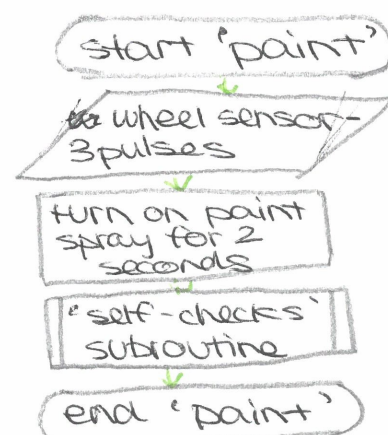


should have added a section which says not to start motors if 'error' subroutine is triggered

### path subroutine



### paint subroutine



★ similar to flow chart in question but doesn't contain 'paint container' decision as it is a part of the 'self-checks' subroutine that is added later

★ the wheel sensor senses 3 as that adds up to 3m which is the interval between paints

★ the 'self-checks' subroutine is added to make sure there is enough paint + battery, and to check if there are any new obstacles

so that the paint markings are at regular intervals

can be added at beginning but putting it at the end makes it easier to fit into the 'path' subroutine

★ doesn't repeat so the message about a problem won't be sent multiple times

For Examiner use only		
Section A	Function and creativity of the 3 concepts	/30
	Technical knowledge & the quality of your explanations	/15
	<b>Total for Section A</b>	<b>/45</b>
Section B	Function of the Proposal	/30
	Materials, components and construction	/15
	<b>Total for Section B</b>	<b>/45</b>
	<b>Communication</b>	<b>/10</b>
	<b>Total</b>	<b>/100</b>

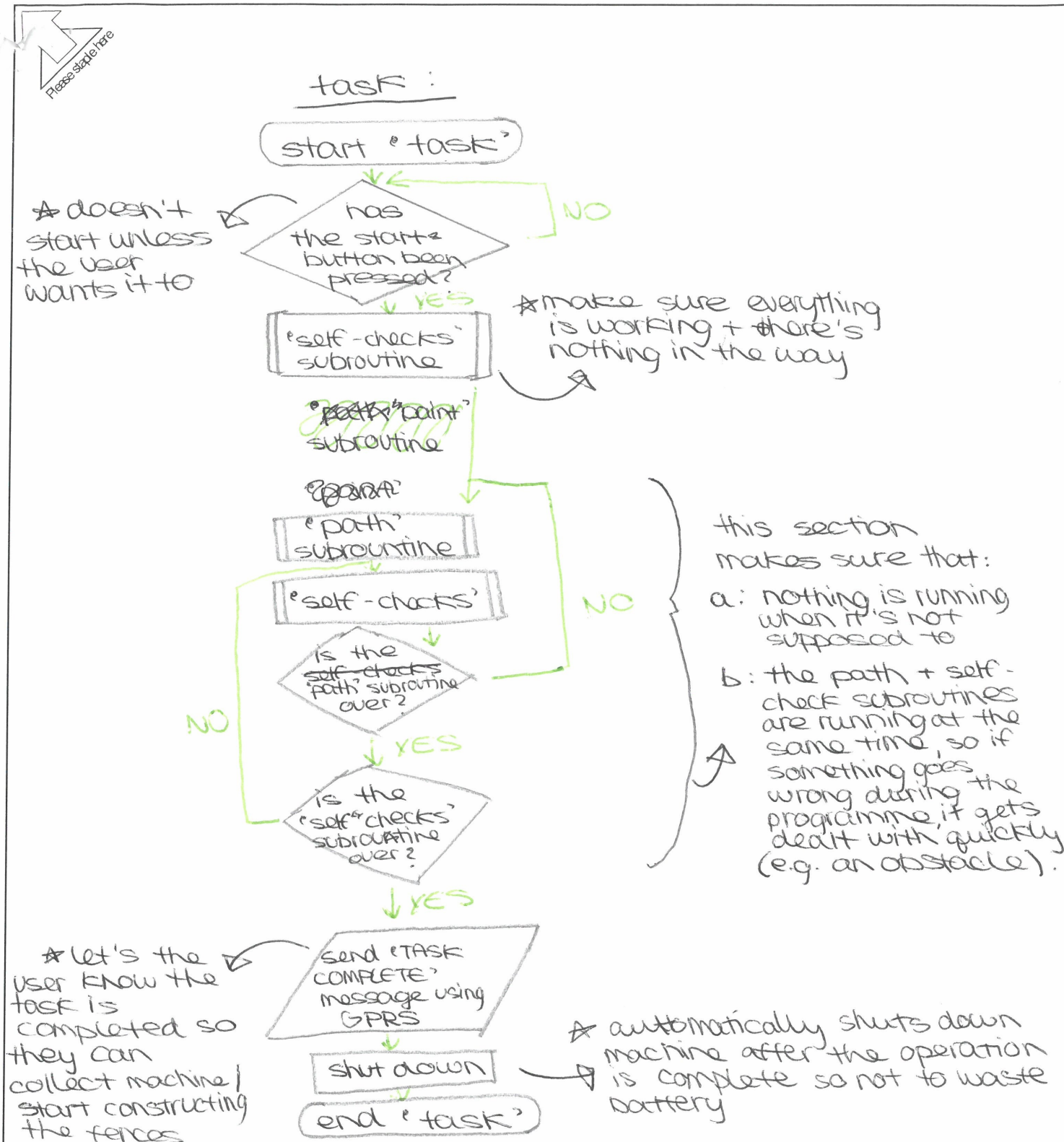
Name:

School:

Circle here the two questions you have answered in the exam:

1 2 3 4 5 6





This answer has clear evidence of higher-level thinking. In addition to checking the contents of the paint container and the state of the battery at the start of the process, the applicant has embedded these checks into a subroutine to ensure that these systems are continually being monitored.

The flowchart has clearly been modified as the applicant considers how the various subroutines interact and the additional comments help justify the need for changes to be made. The candidate would have scored higher by fully analysing the problem and defining the solution for each part of the problem before compiling the flowchart.

use only	
Activity	/30
the ons	/15
n A	/45
	/30
ents	/15
n B	/45
	/10
<b>Total</b>	<b>/100</b>

Name:

School:

Circle here the two questions you have answered in the exam:

①

2

3

4

5

⑥