

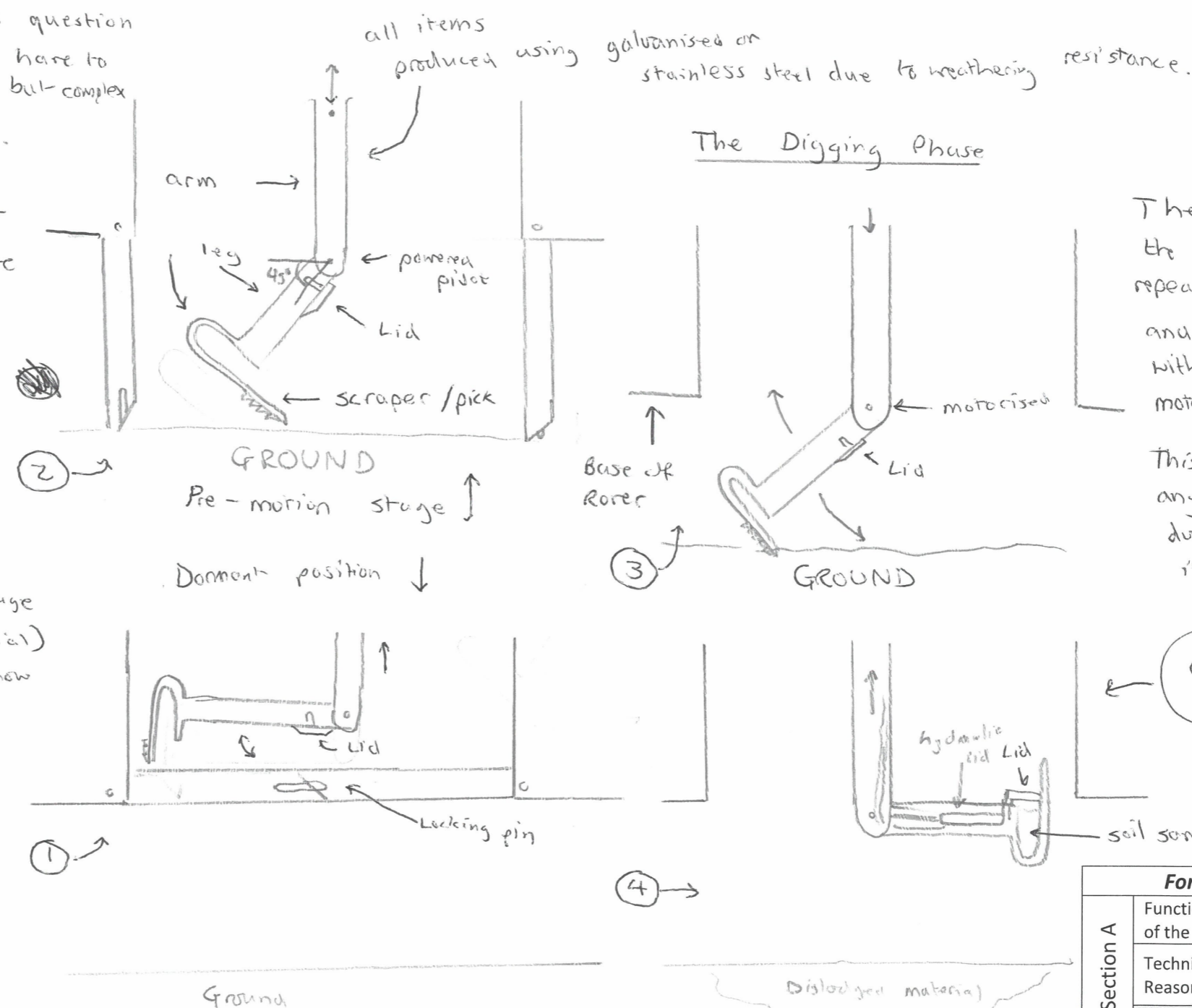
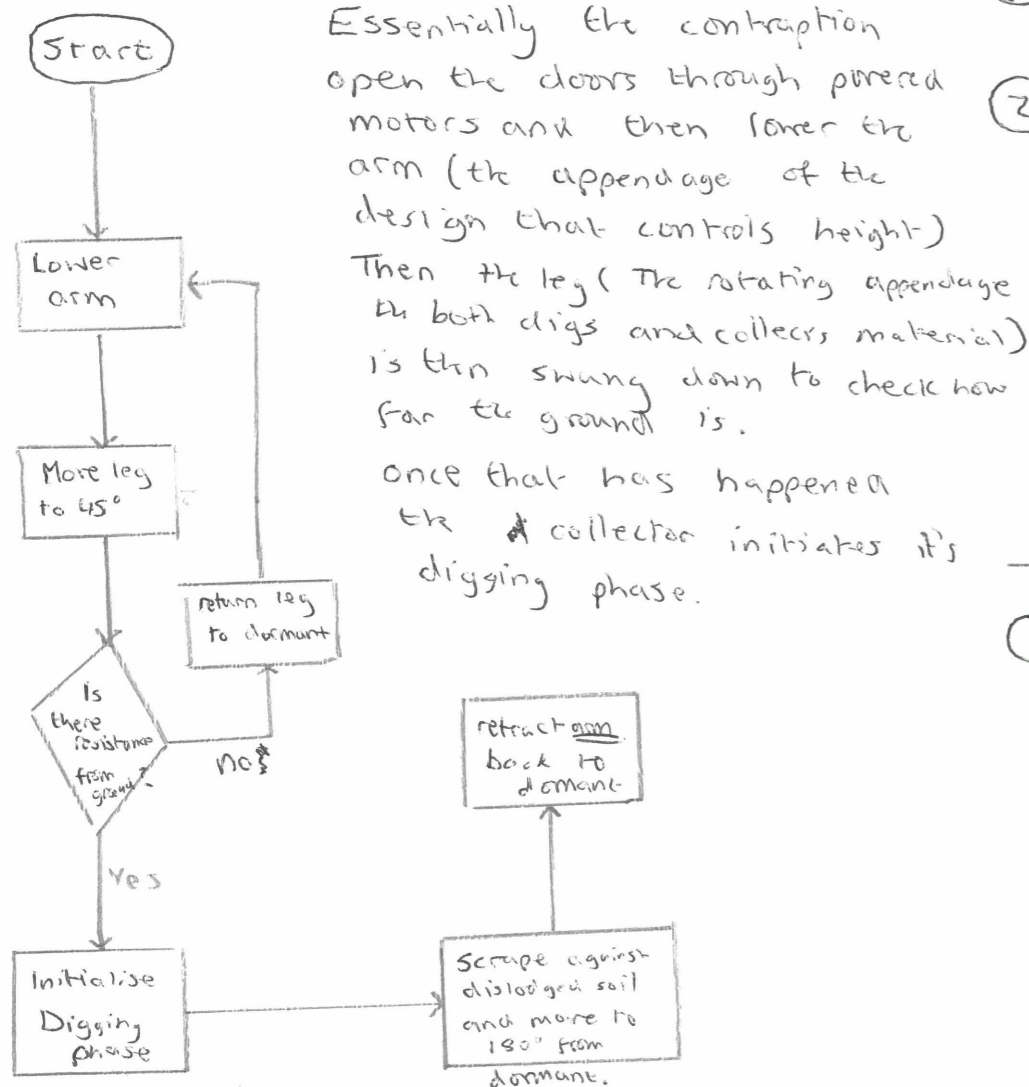
An innovative design; the clarity of the proposed solution helps the examiner to understand the applicant's design thinking. The flowchart also helps to explain the function of the prototype. The diagrams are clear - however, the candidate does not fully explain how all aspects of the mechanism operate, especially the opening and closing of the door/flap. Where possible, all aspects of the operation of a machine must be explained.

## Moon Dust Collector

For Section B of this exam I found this question rather intriguing as astronomical technologies have to be simple enough to be robust and survive but complex enough to complete it's given task effectively.

For my design I employed a concept that involved the repository into which the sample is created is built into the collection tool.

### The Algorithm



The digging phase involves the leg of the contraption repeatedly swinging back and forth into the ground with force provided from the motor on the pivot.

This serves to dislodge any of the below moon dust and rock before it begins collection.

### Collection phase

With the material now dislodged the contraption makes one final swing, being lowered slightly to ensure it collects a full sample. The arm then completes this swing being 180° from it's previous dormant position and a lid is moved across with hydraulics.

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Section A	Function and creativity of the 3 concepts	/30
	Technical knowledge & Reasoning	/15
	<b>Total for Section A</b>	<b>/45</b>
Section B	Functionality of 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:

Section  
A or B: B

Question  
Number: 4

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