Commentary on candidate evidence

The candidate evidence has achieved the following marks for each task of the assignment.

Candidate 1

The candidate was awarded a total of **30 marks**.

Task 1a

The candidate was awarded **3 marks**:

- specification points 1 and 5 are given together as marking instruction input point 3 **(1 mark)**
- specification point 4 is given as marking instruction output point 11 **(1 mark)**
- specification point 6 is given as marking instruction process point 7 **(1 mark)**

Task 1b

The candidate was awarded **3 marks** because the response fully meets the criteria for the full 3 marks available.

Task 1c

The candidate was awarded **2 marks** because the response fully meets the criteria for the full 2 marks available.

Task 1d

The candidate was awarded **4 marks** because the response fully meets the criteria for the full 4 marks available.

Task 1e

The candidate was awarded **2 marks** because they successfully evaluated specification points iv and v, but did not give a suitable comment to reflect the overall effectiveness or a practical improvement.

Task 2a

The candidate was awarded **3 marks** because they successfully simulated the circuit's inputs and outputs, but did not achieve full marks because of an error in the simulation of the flowchart.

Task 2b

The candidate was awarded **4 marks** because they successfully recorded test 2's actual result; amendment and consequential amendment are required to ensure the circuit works as anticipated when it continues. The fourth mark was awarded for the third test amendment. The first actual result did not achieve a mark as the candidate did not comment on the master switch having no impact. The third actual result did not comment on all the components in the expected result.

Task 2c

The candidate was awarded **1 mark** because they only sufficiently evaluated specification point 2, but did not make appropriate reference to specification point 1 or 3.

Task 3

The candidate was awarded **2 marks** because they did not use all the correct data to achieve the second mark.

Task 4a

The candidate was awarded **2 marks** because they designed a logic circuit matching the specification.

Task 4b

The candidate was awarded **4 marks** for:

- V_1 with the correct actuators connected to V_2 **(1 mark)**
- V_4 with correct actuators connected to pin 4 and 5/2 valve **(1 mark)**
- correct line types to indicate main air going to both cylinders and pilot air to the 5/2 valve **(1 mark)**
- connection of 5/2 valve to double-acting cylinder C_A **(1 mark)**.

Marks could not be awarded for:

- V_3 and V_2, as they were incorrectly labelled
- no follow-through error could be applied
- C_B has no direction arrow to indicate the outstroke direction of the single-acting cylinder
- The unidirectional restrictor was attached to the incorrect line on the double-acting cylinder.

Task 4c

The candidate was awarded **0 marks** because no planned tests were accurately described.

Candidate 2

The candidate was awarded a total of **25 marks**.

Task 1a

The candidate was awarded **3 marks**:

- specification 1 is given as MI input point 1 **(1 mark)**
- specification 5 is given as MI output point 11 **(1 mark)**
- specification 6 is given as MI input point 2 **(1 mark)**

No further marks were awarded for the other specification points.

Task 1b

The candidate was awarded **2 marks**. The first mark could not be awarded as V1 and V2 were incorrectly connected.

Task 1c

The candidate was awarded **2 marks** because the simulation matched the design from 1b.

Task 1d

The candidate was awarded **2 marks**. 1 mark was awarded for the correct first actual result and 1 mark was awarded for the second actual result based on the circuit from 1c.

No mark was awarded for the second amendment, as there should be no amendment required based on the actual test result given.

The third actual result would be incorrect for the changes made during the previous testing.

Task 1e

The candidate was awarded **1 mark** because the evaluation of specification iv referred to how gain of 30 is achieved.

Task 2a

The candidate was awarded **2 marks** because the first mark was not awarded due to an error in the flowchart. The output mark was not awarded due to the diode in output.

Task 2b

The candidate was awarded **1 mark** because the third amendment is a valid change to the circuit to correct a fault. The rest of the test plan does not include sufficient detail to achieve further marks.

Task 2c

The candidate was awarded **2 marks**:

- the first specification mark was awarded as the candidate identified the error and correction
- the final mark was awarded as the candidate identified the error and correction from testing.

Task 3

The candidate was awarded **3 marks** because they presented all the detail required for the simulation.

Task 4a

The candidate was awarded **2 marks** because they designed a logic circuit matching the specification.

Task 4b

The candidate was awarded **5 marks** because they correctly labelled V3. No second mark was awarded for the single-acting cylinder as it did not have the direction labelled. No third mark was awarded for V1 as the spring has not been returned/ actuated. The fourth mark was not awarded due to the incorrect actuator. The final 4 marks were awarded for V4 for a follow-through error, correcting placing the unidirectional restrictor, the correct line types and the 5/2 valve connections to cylinder A.

Task 4c

The candidate was awarded **0 marks** because they did not provide a response.

Candidate 3

The candidate was awarded a total of **40 marks**.

Task 1a

The candidate was awarded **6 marks**:

- specification 1 was given as marking instruction input point 2 **(1 mark)**
- specification 2 was given as marking instruction input point 1 **(1 mark)**
- specification 3 was given as marking instruction process point 7 **(1 mark)**
- specification 4 was given as marking instruction output point 11 **(1 mark)**
- specification 5 could have been given 2 marks as marking instruction output 9 and marking instruction output 10 **(1 mark)**
- specification 6 is given as marking instruction output 12 **(1 mark)**

Although there were seven valid points given, there were only 6 marks available in this task.

Task 1b

The candidate was awarded **3 marks** because their response was correct.

Task 1c

The candidate was awarded **2 marks** because their response was correct.

Task 1d

The candidate was awarded **4 marks** because their response was correct.

Task 1e

The candidate was awarded **3 marks** because they correctly identified how specification iv was met, described how specification v was met and evaluated the overall effectiveness of their solution. The candidate gave no practical improvement therefore, no final mark could be awarded.

Task 2a

The candidate was awarded **4 marks** because their response was correct.

Task 2b

The candidate was awarded **4 marks** because they correctly gave the first actual result, but could not gain any marks for the first amendment due to no location given for the decision symbol. The second actual result and subsequent amendments gain full marks. No marks were awarded for the third actual result and amendment.

Task 2c

The candidate was awarded **1 mark** because of the evaluation of specification i. No marks were awarded for the evaluation of specification ii as the response didn't refer to when outputs are low.

Task 3

The candidate was awarded **3 marks** because they presented all the details required for the simulation.

Task 4a

The candidate was awarded **2 marks** because they designed a logic circuit matching the specification.

Task 4b

The candidate was awarded **7 marks** because they successfully designed a pneumatic circuit matching the specification, apart from V_3 which was incorrectly labelled.

Task 4c

The candidate was awarded **1 mark** because they accurately described the first planned test and the expected result. The remaining planned tests lacked the full detail required for any further marks.