Commentary on candidate evidence

Candidate 1

The evidence for this candidate has achieved the following marks for each question of this course assessment component.

Question 1 (a)

The candidate was awarded **2 marks** because the minimum acceptable symbol for an op-amp is two inputs 1 output and 2 IC power “lines”.

Question 1 (b) (i)

The candidate was awarded **1 mark** for correctly determining the resistance.

Question 1 (b) (ii)

The candidate was awarded **1 mark** for correctly stating the tolerance value of the resistor.

Question 1 (b) (iii)

The candidate was awarded **2 marks** with one mark awarded for both colour bands, and the second independent mark for the tolerance band.

Question 2

The candidate was awarded **1 mark** for the coaxial cable because, in some cases, this type can be used for audio signals.

Question 3 (a)

The candidate was awarded **3 marks**: 1 mark awarded for each stage - relationship, substitution of values and answer (number + unit).

Question 3 (b)

The candidate was awarded **3 marks** because the relationship was stated correctly, with appropriate substitution of values and correct answer with units.

Question 3 (c)

The candidate was awarded **1 mark** for stating the correct answer with unit.

Question 3 (d)

The candidate was awarded **1 mark** for stating the correct answer with unit.

Question 3 (e)

The candidate was awarded **3 marks** because the relationship was stated correctly with appropriate substitution of values, and correct answer with units.

Question 4 (a)

The candidate was awarded **1 mark** for correctly completing the truth table.

Question 4 (b)

The candidate was awarded **1 mark** for correctly identifying the logic gate.

Question 4 (c)

The candidate was awarded **1 mark** having correctly identified the IC, using the data sheet to extract the relevant information.

Question 4 (d)

The candidate was awarded **3 marks** because each column is correct.

Question 5

The candidate was awarded **3 marks** having specified the connections of the red and black wires to the circuit's power rails, and identified the test point correctly.

The third mark is given for associating the red LED with logic 1 and not for the "output working".

Question 6 (a)

The candidate was awarded **2 marks.** The first mark is awarded for stating the relationship and the second, for stating the period. The candidate has not converted the unit after stating it correctly as 40 ms when substituting into the relationship, thus the answer is incorrect.

Question 6 (b)

The candidate was awarded **1 mark** for drawing the correct amplitude, with 3 crests and 2 troughs.

Question 7 (a) (i)

The candidate was awarded **1 mark** because the correct value has been extracted from the graph.

Question 7 (a) (ii)

The candidate was awarded **1 mark** because they gave a correct response.

Question 7 (a) (iii)

The candidate was awarded **0 marks** because “running on voltage” is incorrect.

Question 7 (b)

The candidate was awarded **3 marks** because the relationship was stated correctly, with appropriate substitution of values and correct answer with units.

Question 8

The candidate was awarded **4 marks** because each error has been correctly identified.

Question 9

The candidate was awarded **5 marks** because each row has been completed correctly. Each row is marked independently.

Question 10

The candidate was awarded **4 marks**. The marks have been awarded for input selection, output selection, connections from inputs to logic gate, and for marking the input, process and output sections of their diagram.

Question 11

The candidate was awarded **2 marks**. The first mark was awarded for the transistor position and the second for the resistors relative to power rails and transistor.