

Candidate 8

The candidate was awarded a total of **41 marks**.

Section 1

Question 1(a)

The candidate was awarded **3 marks** for the following responses:

- ◆ 'ABS ... has good impact resistance.'
- ◆ 'Nylon ... is self lubricating.'
- ◆ 'Rubber ... will be comfortable to hold.'

Question 1(b)

The candidate was awarded **5 marks** for the following responses:

- ◆ 'nylon bearings could be manufactured using injection moulding'
- ◆ 'as it is highly accurate.'
- ◆ 'The tubular mild steel frame could be manufactured using extrusion'
- ◆ 'it provides long continuous cross sections'
- ◆ 'as it is highly repeatable.' (Although this is the wrong process, it is correct reasoning).

Question 1(c)

The candidate was awarded **0 marks** because they did not answer the question.

Question 1(d)

The candidate was awarded **0 marks** because they did not answer the question.

Question 1(e)

The candidate was awarded **0 marks** because they did not answer the question.

Section 2

Question 2(a)

The candidate was awarded **2 marks** for the following responses:

- ◆ 'Thermosetting plastics do not melt or warp with heat'
- ◆ 'They are also durable and scratch resistant.'

Question 2(b)

The candidate was awarded **1 mark** for the following response:

- ◆ 'Compression moulding is suitable as it is highly repeatable'

Question 2(c)

The candidate was awarded **2 marks** for the following responses:

- ◆ 'Brainstorming ... each others ideas.'
- ◆ 'Mood Boards ... helps stimulate new ideas.'

Question 3(a)

The candidate was awarded **1 mark** for the following response:

- ◆ 'less expensive to buy ... pay staff for building it.'

Question 3(b)

The candidate was awarded **2 marks** for the following responses:

- ◆ 'very detailed models/designs can be achieved.'
- ◆ 'a library of parts which the design can use.'

Question 3(c)

The candidate was awarded **2 marks** for the following responses:

- ◆ 'there is no need for as many staff meaning people could lose their jobs'
- ◆ 'a change in the skills needed from the workforce meaning staff may require more training.'

Question 4(a)

The candidate was awarded **2 marks** for the following responses:

- ◆ '3D printing is more accurate than traditional manufacturing processes.'
- ◆ '3D printing requires less staff than traditional manufacturing processes which saves the company money.'

Question 4(b)

The candidate was awarded **2 marks** for the following responses:

- ◆ 'One method of gathering research ... information about the product and user.'
- ◆ 'Another method is user trials ... feedback on how the product works'

Question 4(c)(i)

The candidate was awarded **2 marks** for the following responses:

- ◆ 'outline what the product needs to fulfil.'
- ◆ 'the desired aesthetics and budgets.'

Question 4(c)(ii)

The candidate was awarded **1 mark** for the following response:

- ◆ 'On a technical specification you would find sizes of the product.'

Question 5(a)

The candidate was awarded **2 marks** for the following responses:

- ◆ 'The colour of the kettle is bright and eye catching.'
- ◆ 'There is a contrast between the bright yellow and the darker grey.'

Question 5(b)

The candidate was awarded **1 mark** for the following response:

- ◆ 'Another method of protecting intellectual property rights is being granted a copyright.'

Question 6

The candidate was awarded **3 marks** for the following responses:

- ◆ 'Ergonomists research ... aid the design of the product.'
- ◆ 'Market researchers carry out ... do this by surveys and questionnaires.'
- ◆ 'Project managers ensure ... everyone sticks to the budget.'

Question 7(a)(i)

The candidate was awarded **0 marks** because their answer lacks any detail into the materials being tested.

Question 7(a)(ii)

The candidate was awarded **2 marks** for the following responses:

- ◆ 'location pins ensure everything is in the right place'
- ◆ 'Bosses add strength to threads.'

Question 7(b)

The candidate was awarded **4 marks** for the following responses:

- ◆ 'Manufacturers should ensure the product can be easily recycled.'
- ◆ 'Different materials labelled.'
- ◆ 'They should make the products easier to repair or reuse.'
- ◆ 'The manufacturers should use as little manufacturing processes as they can.'

Question 8

The candidate was awarded **4 marks** because they displayed adequate knowledge and understanding of the types of models that can be used.

The candidate has referenced different modelling types and has included some examples. However, each model type has a very basic response to how it would be used in the design process.