

# Candidate 4

The candidate was awarded a total of **46 marks**.

## Section 1

### Question 1(a)

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

- ◆ 'Stainless steel ... it is non-ferrous so does not rust'
- ◆ 'Rubber ... handles as they are grippy'
- ◆ 'Mild steel ... it is durable so will not be overly-worn down by digging into hard materials.'

### Question 1(b)

The candidate was awarded **6 marks** for the following responses:

- ◆ 'rotational moulding is an appropriate manufacturing technique for the garden digger wheels'
- ◆ 'the wheels are made of ABS which can be used in the process'
- ◆ 'and are hollow'
- ◆ 'injection moulding is suitable for the textured ABS seat'
- ◆ 'extrusion is appropriate for the playground sand digger frame'
- ◆ 'continuous width/diameter'

### Question 1(c)

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

- ◆ 'the weight of the bucket ... levers by a child'
- ◆ 'weight of the garden digger ... pushed along by a child'

### Question 1(d)

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

- ◆ 'the playground sand-digger ... cannot topple over and injure a child.'
- ◆ 'vandal proof nuts and bolts ... makes it dangerous.'
- ◆ 'the wheels are textured so it can be used outdoors.'
- ◆ 'the wideness of the wheels which makes the digger more stable'

### Question 1(e)

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

- ◆ 'flow charts ... ideal order to make parts.'

## Section 2

### Question 2(a)

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

- ◆ 'not melt or become misshapen due to the heat.'

### Question 2(b)

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

- ◆ 'utensils are all one material'

### Question 2(c)

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

- ◆ 'morphological analysis ... them into an idea.'
- ◆ 'Brainstorming ... until it becomes fully-fledged.'

### Question 3(a)

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

- ◆ 'let's the consumer easily replace parts'
- ◆ 'cheaper for the manufacturer ... price down for consumers.'

### Question 3(b)

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

- ◆ 'to check how parts and components fit together.'
- ◆ 'easy communication ... emailed cad models to view.'

### Question 3(c)

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

- ◆ 'create redundancies'
- ◆ 'lower skilled/lower paid job areas ... higher paid workers.'

### Question 4(a)

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

- ◆ 'with minimal supervision which makes it much cheaper.'
- ◆ 'they are very specific for every individuals needs and sizes.' (Marks awarded for referring to customisation).

**Question 4(b)**

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

- ◆ 'Survey ... this could collect users age, sex, height, weight, etc by asking specific questions.'

**Question 4(c)(i)**

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

- ◆ 'it may include maximum sizes, intended costs and functions.'

**Question 4(c)(ii)**

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

- ◆ 'includes specific sizes'

**Question 5(a)**

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

- ◆ 'yellow which causes it to stand out and catch the eye.'
- ◆ 'largely curved which makes it appear more sleek and modern.'

**Question 5(b)**

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

- ◆ 'copyright'
- ◆ 'protect books and music.'

**Question 6**

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

- ◆ 'ergonomists research ... to the designer.'
- ◆ 'market researchers ... gaps in the market'
- ◆ 'project managers ... communication between groups.'

**Question 7(a)(i)**

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

- ◆ 'flame test ... colour of flame'

**Question 7(a)(ii)**

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

- ◆ 'bosses are used ... screw points.'
- ◆ 'ridges are used ... interior electronics.'

**Question 7(b)**

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

- ◆ 'more portable products ... fuel is used.'
- ◆ 'using recyclable materials'
- ◆ 'providing replaceable parts ... disposed of.'

**Question 8**

The candidate was awarded **2 marks** because they displayed limited knowledge and understanding of the types of models used at certain stages of the design process and the information that can be gained.

The candidate makes reference to sketch and block models however, few points are made and much of the response does not answer the question.