

# Candidate 5

The candidate was awarded a total of **51 marks**.

## Section 1

### Question 1(a)

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

- ◆ 'Rubber ... good gripping qualities.'
- ◆ 'Painted tubular mild steel ... resistance to corrosion'
- ◆ 'ABS ... chemical resistant so that it is easy to clean.'
- ◆ 'Nylon ... self-lubricating'

### Question 1(b)

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

- ◆ 'For the garden digger the mild steel frame would be extrusion'
- ◆ 'uniformed cross-section across the frame'
- ◆ 'The ABS wheels would be injection moulded'
- ◆ 'Provide the intricate detail'

### Question 1(c)

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

- ◆ 'handles of the diggers ... fit smoothly around it.'
- ◆ 'height of the seat ... the average person.'
- ◆ 'width of the handles ... excessively stretch.'
- ◆ 'weight of the handlebars ... lift the scoop upwards.'

### Question 1(d)

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

- ◆ 'able to rotate 360° around the central point'
- ◆ 'able to move its wheels and easily'
- ◆ 'be stable when rotating'

### Question 1(e)

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

- ◆ 'templates could be used ... quicker rate.'
- ◆ 'CNC drilling can be used ... more accurately than a human.'

- ◆ 'Gantt chart which ... organised and efficient.'

## Section 2

### Question 2(a)

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

- ◆ 'won't deform when exposed to higher temperatures.'

### Question 2(b)

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

- ◆ 'the process is easily repeatable'
- ◆ 'It is also suitable ... increase in profits.'

### Question 2(c)

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

- ◆ 'Morphological analysis ... theme for example'
- ◆ 'These would then be mixed and matched to produce different ideas.'
- ◆ 'Technology transfer ... lead to new ideas.'

### Question 3(a)

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

- ◆ 'it is simplistic and requires less skill/experience to use.'

### Question 3(b)

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

- ◆ 'elements of the product can be easily altered to suit the occasion.'
- ◆ 'it can be stress tested by CAD simulation'
- ◆ 'there is a library of standard components which saves the user time from having to draw each component.'

### Question 3(c)

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

- ◆ 'less workers needed for the job which could lead to unemployment.'
- ◆ 'demand for a skilled workforce ... as well as skilled workers'

**Question 4(a)**

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

- ◆ 'production speeds are faster'
- ◆ 'cheaper overall ... increases throughout production.'

**Question 4(b)**

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

- ◆ 'questionnaire/survey ... themes, materials, etc.'
- ◆ 'put the product ... may need to be altered/improved.'
- ◆ 'through a user trial ... and specific sizes.'

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

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

- ◆ 'give specific parameters that a product must follow.'
- ◆ 'dimensions of the product.'

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

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

- ◆ 'materials of the product.'

**Question 5(a)**

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

- ◆ 'The golden coloured body ... silver coloured lid'
- ◆ 'modern style with plain colours and little to no pattern whatsoever.'

**Question 5(b)**

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

- ◆ 'Copyright.'
- ◆ 'any published products (books, movies, songs).'

**Question 6**

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

- ◆ 'Market researchers ... do in the marketplace.'
- ◆ 'Project Managers have the role of briefing the team on the product that is going to be produced.'

- ◆ 'Project Managers usually ... take note of any setbacks.'

### Question 7(a)(i)

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

- ◆ 'to put the materials ...ferrous or non-ferrous'
- ◆ 'A flame test determines ... flame colour, scent given off'

### Question 7(a)(ii)

The candidate was awarded **0 marks** as their response does not demonstrate knowledge and understanding of manufacturing features used to aid accurate and efficient assembly.

### Question 7(b)

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

- ◆ 'make the product from recyclable materials'
- ◆ 'closer to the target market so that there is less transport needed reducing pollution.'

### 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.

Although the candidate has made reference to a few types of models, much of the response does not answer the question and the answer is simply too thin.