

Candidate 3

The candidate was awarded a total of **57 marks**.

Section 1

Question 1(a)

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

- ◆ 'nylon is suitable as it is self lubricating ... move freely'
- ◆ 'stainless steel ... resistant to corrosion'
- ◆ 'rubber handles are suitable as it is easy to grip'
- ◆ 'mild steel ... is tough so will withstand sudden impact'
- ◆ 'polypropylene ... chemical resistant so will be able to be cleaned'

Question 1(b)

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

- ◆ 'stainless steel frame would be extruded'
- ◆ 'polypropylene seat would be injection moulded'
- ◆ 'can be used over and over again' (repeatable)
- ◆ 'can be very detailed.'
- ◆ 'hollow ABS wheels would have been made by rotational moulding'.
- ◆ 'create a hollow inside'

Additional marks could have also been awarded for:

- ◆ 'suitable for the material'

Question 1(c)

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

- ◆ 'the height of the seat ... can have their feet on the floor'
- ◆ 'weight of the arm ... light enough to move'
- ◆ 'rubber handles ... diameter so children could wrap there hand round comfortably'.

Question 1(d)

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

- ◆ 'influenced by function when deciding to make it rotate 360°'
- ◆ 'permanent fixed stops chances of tipping'
- ◆ '4 wheels making it stable'
- ◆ 'paint added ... stops rust and expands the diggers lifespan'

Question 1(e)

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

- ◆ 'Automation would improve ... quicker manufacture'

Section 2**Question 2(a)**

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

- ◆ 'not melt down ... boiling temperatures'
- ◆ 'odourless and tasteless meaning there is no aftertaste on food'

Question 2(b)

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

- ◆ 'can be done over an over again'

Question 2(c)

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

- ◆ 'Morphological analysis ... randomly try each option'
- ◆ 'analogy can be use ... items as inspiration.'

Question 3(a)

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

- ◆ 'easy to replace and to find a replacement.'

Question 3(b)

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

- ◆ 'useful whilst deciding colour ... look through and choose'
- ◆ 'can create orthographic drawing digitally'
- ◆ 'can test ... no material wasted'

Question 3(c)

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

- ◆ 'Automated production means less people will be employed'
- ◆ 'Automated production means different type of training'

Question 4(a)

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

- ◆ '3D printing can be done ... all over the world'

Question 4(b)

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

- ◆ 'A user trial could be used ... looks and function.'
- ◆ 'A questionnaire could be used ... sizes and styles.'

Question 4(c)(i)

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

- ◆ 'info on how the product should look and perform'

Question 4(c)(ii)

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

- ◆ 'sizes and prices'

Question 5(a)

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

- ◆ 'form of the kettle ... modern and high tech'
- ◆ 'proportion of the kettle ... grip and very comfortable'

Question 5(b)

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

- ◆ 'trademarks'
- ◆ 'can protect the logos'

Question 6

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

- ◆ 'ergonomist will work pyscologic'
- ◆ 'help make sure size are suitable and everything is safe with weights'
- ◆ 'market researcher will work ... market want and give feedback'
- ◆ 'project manager will work ... everything runs smoothly'

Question 7(a)(i)

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

- ◆ 'burning plastics ... the colour of flame'
- ◆ 'checking the grain on woods, soft woods generally have straight grains.'
- ◆ 'checking colour of material metals and woods have individual colours'

Question 7(a)(ii)

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

- ◆ 'location pins can aid assembly as it helps line up the parts'
- ◆ 'bosses ... can help located holes'

Additional marks could have also been awarded for:

- ◆ 'webs ... helping keep a strong structure.'

Question 7(b)

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

- ◆ 'Manufacturers can use processes that have less waste'
- ◆ 'Manufacturers can use more eco-friendly materials and reused ones'
- ◆ 'Manufacturers can use biodegradable packaging'

Question 8

The candidate was awarded **6 marks** because they displayed secure 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 has made clear reference to several different modelling types. Several points are made clear with examples used to support them.