



National  
Qualifications  
2017

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## 2017 Design and Manufacture

### National 5

## Finalised Marking Instructions

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## General marking principles for National 5 Design and Manufacture

*This information is provided to help you understand the general principles you must apply when marking candidate responses to questions in this paper. These principles must be read in conjunction with the detailed marking instructions, which identify the key features required in candidate responses.*

- (a) Marks for each candidate response must always be assigned in line with these general marking principles and the specific marking instructions for the relevant question.
- (b) Marking should always be positive. This means that, for each candidate response, marks are accumulated for the demonstration of relevant skills, knowledge and understanding: they are not deducted from a maximum on the basis of errors or omissions.
- (c) If a specific candidate response does not seem to be covered by either the principles or detailed marking instructions, and you are uncertain how to assess it, you must seek guidance from your Team Leader.
- (d) Mark consecutive responses to match the marks in 'state' questions, eg if two responses are given to a one mark question mark only the first response. Questions where candidates are asked to 'explain' or 'describe' should be marked in a more holistic manner.
- (e) Repetition of answers across different question parts is acceptable unless specifically stated otherwise in the question.

## Marking instructions for each question

### Section 1

| Question |     |      | Expected answer(s)   | Max mark | Additional guidance  |
|----------|-----|------|--|----------|--|
| 1.       | (a) | (i)  | <p>An explanation similar to:</p> <ul style="list-style-type: none"> <li>• Parts that are all the same</li> <li>• Parts supplied by a sub-contractor</li> <li>• Parts from an outside source</li> <li>• Parts that are mass produced</li> <li>• Parts that have multiple uses</li> <li>• Common tools fit them</li> <li>• Commonly used</li> <li>• Can be reused</li> </ul> <p><b>Any other suitable response</b></p>  | 1        | <p>One mark for correct explanation.</p> <p><i>'Used in flatpack'</i> scores zero marks.</p> <p>Ensure that responses refer to a definition rather than a reason.</p>  |
|          |     | (ii) | <p>One mark each for:</p> <ul style="list-style-type: none"> <li>• You don't have to make them yourself</li> <li>• The parts will be made in large numbers so will be cheap to make</li> <li>• Consistency of accuracy</li> <li>• Consistency of quality (finish)</li> <li>• Quality assured</li> <li>• Easy to obtain</li> <li>• Saves time as no manufacturing is needed</li> <li>• No specialist tools required</li> <li>• Minimal skill required</li> <li>• Can use them in a range of products</li> </ul> <p><b>Any other suitable response</b></p> | 2        | <p>One mark for each correct description up to a maximum of two marks.</p> <p>Where a candidate states <i>'They are made by somebody else'</i> this scores zero marks as it is an unqualified benefit.</p> <p>It is acceptable that some answers may be repeated from section (i).</p> <p>Unqualified <i>'quick'</i>, <i>'easy'</i> and <i>'cheap'</i> responses score zero marks.</p> |
|          | (b) | (i)  | <p>A description that covers one of the following:</p> <ul style="list-style-type: none"> <li>• Helps to keep the board flat</li> <li>• Won't warp</li> <li>• Won't twist</li> <li>• Edge of board protected from damage</li> <li>• Allows a wide board to be produced</li> <li>• Holds the board securely</li> <li>• Pulls strips together over their length</li> </ul> <p><b>Any other suitable response</b></p>   | 1        | <p>One mark for correct description.</p>   |

| Question |          | Expected answer(s)  | Max mark | Additional guidance  |
|----------|----------|---|----------|--|
|          | (b) (ii) | <p>A description that covers two of the following:</p> <ul style="list-style-type: none"> <li>• Softwood trees grow quickly and are therefore sustainable /hardwood trees grow slowly and are therefore less sustainable</li> <li>• Wood should be sourced from managed forests</li> <li>• Using tropical hardwoods endangers rainforests</li> <li>• Locally sourced</li> <li>• Lifespan of wood</li> <li>• Recyclability of chosen wood</li> </ul> <p><b>Any other suitable response</b></p>     | 2        | <p>One mark for each correct description up to a maximum of two marks.</p> <p>Candidates may refer to advantages and disadvantages of environmental considerations.</p>  |
|          | (c) (i)  | <p>A description that covers two of the following:</p> <ul style="list-style-type: none"> <li>• Does the DVD fit into position</li> <li>• Can the DVDs be easily accessed</li> <li>• How many DVDs can be held</li> <li>• Does it hold DVDs securely</li> <li>• Are the pegs long enough</li> <li>• Are the pegs strong enough</li> <li>• Is the hole for the peg deep enough to ensure strength</li> <li>• Does it hold the weight of a DVD</li> </ul> <p><b>Any other suitable response</b></p> | 2        | <p>One mark for each correct description up to a maximum of two marks.</p> <p>Reference to material suitability prior to final selection could gain marks.</p> <p>Any responses solely relating to lifespan (durability) score zero marks.</p> <p><i>'Makes it strong'</i> or generic references to strength score zero marks.</p> |
|          | (ii)     | <p>One mark for:</p> <ul style="list-style-type: none"> <li>• Cheaper than solid timber</li> <li>• Easy to work with</li> <li>• Sturdy (resistant) enough for purpose of model</li> <li>• Available in wide boards</li> </ul> <p><b>Any other suitable response</b></p>   | 1        | <p>One mark for correct response.</p> <p>Unqualified <i>'cheap'</i> and <i>'easy'</i> responses are insufficient to gain a mark but subsequent responses could still gain a mark.</p> <p>Any responses relating to lifespan (durability) score zero marks.</p>   |

| Question |     | Expected answer(s)  | Max mark | Additional guidance  |
|----------|-----|---|----------|--|
| 1.       | (d) | <p>A description that covers two of the following:</p> <ul style="list-style-type: none"> <li>• Quicker than repeated marking out</li> <li>• Accurate</li> <li>• Identical</li> <li>• Easier than traditional marking out methods</li> </ul> <p><b>Any other suitable response</b></p>  | 2        | <p>One mark for each correct description up to a maximum of two marks.</p> <p>Unqualified <i>'quick'</i> and <i>'easy'</i> responses score zero marks.</p> <p>References to templates being used in mass production do not score marks.</p>  |
|          | (e) | (i) <p>A description, referring to tools/processes, that covers two of the following:</p> <ul style="list-style-type: none"> <li>• Cut the curve using a <b>suitable saw</b></li> <li>• External/internal curves machine sanded/sander</li> <li>• File/surform/rasp edges</li> <li>• Hand sand</li> </ul> <p><b>Any other suitable response</b></p> | 2        | <p>One mark for each valid point up to a maximum of two marks.</p> <p><b>Where candidates do not name tools a maximum of one mark may be awarded.</b></p> <p>Reference must be made to both cutting and shaping the wood to gain two marks.</p> <p>Lists of tools score zero marks e.g. <i>'use a coping saw and sand paper'</i>.</p> <p><b>No marks are awarded for cutting operations that do not name a suitable saw/machine saw.</b> References to <i>'hacksaw'</i> or <i>'junior hacksaw'</i> score zero marks.</p> |

| Question |     |      | Expected answer(s)   | Max mark | Additional guidance   |
|----------|-----|------|--|----------|---|
| 1.       | (e) | (ii) | <p>A description, referring to tools/processes, that could include some of the following:</p> <ul style="list-style-type: none"> <li>• Marking out two parallel lines</li> <li>• Marking out required depth</li> <li>• Cutting slot between the two parallel lines (<b>reference must be made to tenon/gent's saw</b>)</li> <li>• Remove waste material (<b>naming a specific type of chisel is not required</b>)</li> <li>• Levelling the slot to a consistent depth</li> </ul> <p><b>Any other suitable response</b></p> | 4        | <p>One mark per correct description up to a total of four marks.</p> <p>Candidate responses are likely to refer to:</p> <p>1: Marking out</p> <p>2: Manufacturing</p> <ul style="list-style-type: none"> <li>• Cutting sides</li> <li>• Removing waste</li> <li>• Levelling surface</li> </ul> <p>To gain four marks, candidates must refer to marking out and manufacturing processes with direct reference to tools.</p> <p><b>Where candidates do not name tools a maximum of one mark may be awarded.</b></p> <p>Lists of tools score zero marks.</p> <p><b>No marks are awarded for cutting operations that do not name a tenon/gent's saw.</b></p> <p>A maximum of three marks may be awarded to marking out or manufacturing descriptions where references to suitable tools have been made.</p> <p>References to clamping can score a mark.</p> <p>References to sanding the bottom of the joint score zero marks. Filing the bottom of the joint is acceptable.</p> <p><i>'Mark the distance with a ruler'</i> scores zero marks (a ruler should be used to measure).</p> <p>Basic statements such as <i>'mark the wood with a pencil'</i> gain zero marks.</p> <p><i>'Mark the lines with a try square'</i> scores one mark.</p> <p><i>'Find the centre using a marking gauge'</i> scores one mark.</p> <p>There is no requirement to refer to the identified stages above in the correct sequence.</p> |

| Question |     |       | Expected answer(s)   | Max mark | Additional guidance   |
|----------|-----|-------|--|----------|---|
| 1.       | (e) | (iii) | <p>A description, referring to tools/processes, that includes two of the following:</p> <ul style="list-style-type: none"> <li>• Remove pencil marks/blemishes with sandpaper or eraser</li> <li>• Sand using rough sandpaper</li> <li>• Sand using smooth sandpaper</li> <li>• Wet the wood to raise the grain</li> </ul> <p><b>Any other suitable response</b></p> | 2        | <p>One mark for each valid description up to a maximum of two marks.</p> <p>Descriptions referring to filing score zero marks.</p> <p><i>'Remove all pencil marks'</i> scores zero marks.</p> <p><i>'Rub off pencil marks'</i> scores one mark.</p> <p>Exemplar response:<br/><i>'Sand with rough sand paper then sand with smooth sand paper'</i>. (Two marks).</p> <p><i>'Sand it'</i> scores one mark.</p> <p><i>'Sand it with sandpaper'</i> scores one mark.</p> |
|          |     | (iv)  | <p>One mark for:</p> <ul style="list-style-type: none"> <li>• Looks better</li> <li>• Lasts longer/protects surface</li> </ul> <p><b>Any other suitable response</b></p>   | 1        | One mark for correct response.  |

| Question |     | Expected answer(s)  | Max mark | Additional guidance  |
|----------|-----|---|----------|--|
| 1.       | (f) | <p>A description, referring to tools/processes, that could include the following:</p> <ul style="list-style-type: none"> <li>• Clamping to hold in position</li> <li>• Shaping corners</li> <li>• Cross file edges to shape</li> <li>• Draw file edges smooth</li> <li>• Smooth edges with abrasive paper</li> <li>• Polish edges</li> <li>• Drill holes</li> <li>• Countersink holes</li> <li>• Heat using strip heater/oven</li> <li>• Bend to shape</li> <li>• Secure in position to cool</li> </ul> <p><b>Any other suitable response</b></p> | 4        | <p>One mark per correct description up to a total of four marks.</p> <p>Candidate responses are likely to refer to the following manufacturing stages:</p> <ul style="list-style-type: none"> <li>• Shaping curved corners</li> <li>• Drilling/countersinking holes</li> <li>• Polishing edges</li> <li>• Bending to shape</li> </ul> <p>There is no requirement to refer to the identified stages above in the correct sequence.</p> <p>To gain four marks, candidates must refer to manufacturing stages with direct reference to tools and/or processes.</p> <p><i>'Bend it'</i> scores zero marks<br/> <i>'Bend it around a former'</i> scores one mark.<br/> <i>'Bend it to the desired shape'</i> scores one mark.<br/> <i>'Bend it along the line'</i> scores one mark.</p> <p>References to securing the piece of plastic in a vice gain a mark.</p> <p>Any reference to laser cutting scores a maximum of one mark.</p> <p><b>Where candidates do not name tools a maximum of one mark may be awarded.</b></p> <p>Lists of tools score zero marks.</p> <p><b>Where candidates do not name tools a maximum of one mark may be awarded.</b></p> |

## Section 2

| Question |     | Expected response(s)  | Max mark | Additional guidance   |
|----------|-----|---|----------|---|
| 2.       | (a) | <p>Candidates should describe the following broad areas of aesthetics:</p> <ul style="list-style-type: none"> <li>• Colour</li> <li>• Shape</li> <li>• Form</li> <li>• Texture</li> <li>• Line</li> <li>• Proportion</li> <li>• Symmetry</li> <li>• Contrast</li> <li>• Pattern</li> <li>• Fashion</li> </ul> <p><b>Any other suitable response</b></p> | 4        | <p>One mark per correct description up to a total of four marks.</p> <p>To gain one mark candidates should refer to one of the broad areas and link it to a part, or parts, of the Pram.</p> <p>A list of aesthetic terms scores zero marks.</p> <p><i>‘The red and silver colours make it look modern’</i> (one mark), <i>‘the metal and plastic materials contrast with each other’</i> (one mark).</p> <p>Basic descriptions can gain a mark:<br/> <i>‘The colour is red’</i> scores one mark.<br/> <i>‘The design is fashionable’</i> scores one mark.</p> <p>References to the reversible cover must clearly describe the aesthetics aspects.</p> <p>Basic specification type statements such as:<br/> <i>‘It must look good’</i> score zero marks.</p> <p>Higher order specification type statements such as:<br/> <i>‘The colours used appeal to the target market’</i> score one mark.</p> <p>A degree of professional judgement may be required to decipher between psychological and aesthetic responses:</p> <p><i>‘The padded handle looks comfortable to hold’</i> scores zero marks.</p> <p><i>‘Eye catching’</i> on its own scores zero marks.</p> |

| Question |     | Expected response(s)  | Max mark | Additional guidance   |
|----------|-----|---|----------|---|
| 2.       | (b) | <p><b>Anthropometric issues:</b></p> <ul style="list-style-type: none"> <li>• Chair seat width</li> <li>• Seat height increased to clear stairs</li> <li>• Longer back length to support baby</li> <li>• Adjustability of parts of the pram eg restraint straps/handles/seat angle</li> <li>• Hand grip</li> </ul> <p><b>Physiological issues:</b></p> <ul style="list-style-type: none"> <li>• Weight of chair</li> <li>• Strength of user</li> <li>• Comfort of user</li> <li>• Buttons for adjusting straps/heights of pram</li> <li>• Ease of folding/unfolding</li> <li>• Accessing areas of the pram</li> </ul> <p><b>Psychological issues:</b></p> <ul style="list-style-type: none"> <li>• Confidence issues surrounding user</li> <li>• Stability of chair</li> <li>• Belt for safety</li> <li>• High resolution colours used</li> <li>• Construction looks robust</li> <li>• Simplicity of use</li> <li>• Signalling of interactive components</li> </ul> <p><b>Any other suitable response</b></p> | 6        | <p>To gain marks, candidates must describe the relationship between the ergonomic consideration and the part of this type of product.</p> <p>Candidates may refer to:</p> <ul style="list-style-type: none"> <li>• Anthropometrics</li> <li>• Physiology</li> <li>• Psychology</li> </ul> <p>There is no requirement to refer to any of these by name.</p> <p>Typical responses within each aspect are shown to the left.</p> <p>Six suitable responses will gain six marks.</p> <p>No marks for noting percentiles only eg <i>'5<sup>th</sup> to 95<sup>th</sup> percentile'</i> on its own scores zero marks.<br/><i>'Adjustable handle to fit the 5<sup>th</sup> to 95<sup>th</sup> percentile'</i> scores one mark.</p> <p>Candidates can still gain marks if they mix up percentiles, e.g. <i>'95<sup>th</sup> percentile for the handle diameter suiting the average grip diameter'</i> scores one mark.</p> <p>Aesthetic responses (possible confusion with psychology) score zero marks.</p> <p>A list of parts scores zero marks.</p> <p>Basic specification type statements such as:<br/><i>'It must be easy to work'</i> score zero marks.<br/>Higher order specification type statements can gain marks:<br/><i>'The brake must be easy to press'</i> score one mark.</p> |

| Question |     | Expected response(s)  | Max mark | Additional guidance   |
|----------|-----|---|----------|---|
| 3.       | (a) | <p>One mark for:</p> <ul style="list-style-type: none"> <li>Cheaper than fully assembled furniture</li> <li>Uses less storage space therefore readily available</li> <li>Consumer can transport flat pack easily</li> <li>Satisfaction of self-assembly</li> </ul> <p>Any other suitable response</p>   | 1        | One mark for correct response.  |
|          | (b) | <p>A description that includes two of the following:</p> <ul style="list-style-type: none"> <li>Can stay ahead of the competition/adapt designs/new designs</li> <li>Allow new shapes/less joining techniques to be used</li> <li>Reduce unit cost</li> <li>Reduce labour costs</li> <li>Time efficient (man hours)</li> <li>Reduce material used</li> <li>Quicker production than traditional methods</li> <li>Accurate</li> <li>Can facilitate rapid prototyping</li> <li>Easy to modify CAD file</li> <li>Can be sent electronically</li> <li>Physical storage minimised</li> <li>Lots can be made at once</li> </ul> <p>Any other suitable response</p> | 2        | <p>One mark for each correct description up to a maximum of two marks.</p> <p>Responses referring to CAD are acceptable.</p> <p>Unqualified '<i>quick</i>', '<i>easy</i>' and '<i>cheap</i>' responses score zero marks.</p> <p><i>'Production speed is fast'</i> is sufficient for one mark.</p> |

| Question |     | Expected response(s)  | Max mark | Additional guidance   |
|----------|-----|---|----------|---|
| 3.       | (c) | <p>Candidates may describe one of the following techniques:</p> <ul style="list-style-type: none"> <li>• Morphological Analysis</li> <li>• Brain storming</li> <li>• Technology Transfer</li> <li>• Analogy</li> <li>• Lateral Thinking</li> <li>• Mood board</li> <li>• Lifestyle board</li> <li>• Take your pencil for a walk</li> <li>• Design Stories</li> <li>• SAM</li> <li>• Gathering public opinion through a market survey</li> <li>• Existing product board</li> </ul> <p><i>Example answer:</i><br/>Brain storming<br/>The team will sit together and note down all of the ideas each person has, no matter how silly they seem. Some ideas may spark off thoughts in others, allowing different suggestions to be explored in the hope of coming up with a new idea.</p> | 2        | <p>One mark awarded for each correct response up to a total of two marks.</p> <p>No marks are awarded for simply naming a technique.</p> <p>Candidates may score two marks if they correctly describe an idea generation technique even although they have named it incorrectly.</p> <p>Diagrams which directly show an idea generation technique being carried out may attract marks.</p> <p>Marks may be awarded where candidates use a mind map to show aspects of idea generation techniques.</p> |
| 4.       | (a) | (i) <p>State any two of the following:</p> <ul style="list-style-type: none"> <li>• Purchase of machinery</li> <li>• Associated computer hardware costs</li> <li>• Manufacture of mould/tooling</li> <li>• Training of workforce</li> </ul> <p><b>Any other suitable response</b></p>   | 2        | <p>One mark awarded for each correct response up to a total of two marks.</p> <p><b>No description required.</b></p> <p>Responses relating to materials as set-up costs can only score marks where candidates have clearly indicated an initial bulk purchase of raw materials.</p> <p>Running costs score zero marks eg restocking/buying plastic, electricity etc.</p>  |

| Question |     |       | Expected response(s)  | Max mark | Additional guidance   |
|----------|-----|-------|---|----------|---|
| 4.       | (a) | (ii)  | <p><b>Process:</b></p> <ul style="list-style-type: none"> <li>• Injection moulding</li> </ul> <p><b>Justification:</b></p> <ul style="list-style-type: none"> <li>• Economies of scale/mass produced product</li> <li>• Low cost raw material</li> <li>• Intricate detail</li> <li>• High volume over short time periods</li> <li>• Reliable, established technology</li> </ul> <p><b>Any other suitable response</b></p>   | 2        | <p>One mark for correct process and one mark for correct justification.</p> <p>Unqualified '<i>quick</i>', '<i>easy</i>' and '<i>cheap</i>' responses score zero marks.</p>   |
|          |     | (iii) | <p>Responses may include statements such as:</p> <ul style="list-style-type: none"> <li>• Can be reheated and reshaped</li> <li>• Moulds easily</li> <li>• Readily available</li> <li>• Strong/robust</li> <li>• Hardwearing/durable</li> <li>• Available in a range of colours</li> <li>• Scratch resistant</li> <li>• In-built finish</li> <li>• Can be recycled</li> <li>• Easy to clean</li> <li>• Low cost bulk buying of raw material</li> <li>• Lightweight</li> </ul> <p><b>Any other suitable response</b></p> | 2        | <p>One mark for correct response up to a total of two marks.</p> <p>Unqualified '<i>quick</i>', '<i>easy</i>' and '<i>cheap</i>' responses score zero marks.</p> <p>'<i>Easy to work with</i>' is not relevant to the manufacturing operation with ABS and scores zero marks.</p> |
|          |     | (iv)  | <ul style="list-style-type: none"> <li>• Polypropylene</li> <li>• HDPE</li> <li>• HIPS</li> <li>• PS</li> </ul> <p><b>Any other suitable response</b></p>   | 1        | <p>One mark for correct response.</p> <p>Acrylic scores zero marks.<br/>Nylon scores zero marks.<br/>PVC scores zero marks.</p>   |

| Question |     | Expected response(s)   | Max mark | Additional guidance   |
|----------|-----|--|----------|---|
| 4.       | (b) | <p>One mark for:</p> <ul style="list-style-type: none"> <li>• It is safe to use</li> <li>• It has been tested for safety</li> <li>• Ensures the product meets a minimum safety standard</li> <li>• To signify conformance with European Union regulations regarding product safety</li> <li>• Conforms to European environmental Regulations</li> <li>• Shows sustainability in manufacturing</li> </ul> <p><b>Any other suitable response</b></p> | 1        | <p>One mark for correct response.</p> <p>No mark for simple stating the name.</p>   |
| 5.       | (a) | (i) <p>A description of a suitable method to evaluate the function of the running shoes:</p> <ul style="list-style-type: none"> <li>• User trial</li> </ul> <p>Ask a range of people to run with the shoes over a variety of surfaces then provide feedback on how well they felt the shoe performed.</p>  | 2        | <p>One mark for correct description up to a total of two marks.</p> <p>Candidates must refer to at least two significant stages of evaluation to gain full marks.</p> <p>User Trial:</p> <ul style="list-style-type: none"> <li>• Provide shoes to runners</li> <li>• Run whilst wearing them</li> <li>• Feedback results.</li> </ul> <p>Generic responses referring to an evaluation technique, but not to running, can gain two marks.</p> <p>Basic references to ‘see if’ are considered too vague to imply feedback of results.</p> |

| Question |     |      | Expected response(s)  | Max mark | Additional guidance   |
|----------|-----|------|---|----------|---|
| 5.       | (a) | (ii) | <p>A description that refers to one of the following:</p> <ul style="list-style-type: none"> <li>• Product comparison (this term scores one mark on its own)</li> <li>• Survey</li> <li>• Extended user trial</li> </ul> <p><b>Any other suitable response</b></p>  | 2        | <p>One mark for correct description up to a total of two marks.</p> <p>Generic responses referring to an evaluation technique, but not to running, can gain two marks.</p> <p><i>'Find out the price of other running shoes'</i> scores one mark.<br/> <i>'Compare the price to other running shoes'</i> scores one mark.<br/> <i>'Find out the price of other running shoes and compare these'</i> scores two marks.</p> <p>Post purchase evaluations are acceptable.</p> <p>Example responses:<br/> <i>'Comparison to other products. The market researcher could go online and look at the cost of similar running shoes'.</i> (Two marks).<br/> <i>'Survey. The market researcher could ask members of the public how much they would be willing to pay for the running shoes.'</i> (Two marks).</p> <p>Candidates may describe the value for money of the running shoes at the end of their lifecycle.</p> |
|          | (b) |      | <p>One mark for:</p> <ul style="list-style-type: none"> <li>• BOGOF</li> <li>• Adverts e.g. TV, radio, billboard, posters/leaflets</li> <li>• Celebrity endorsement</li> <li>• Free gifts/prizes, win a holiday</li> <li>• Sell shoes under a big brand name</li> </ul> <p><b>Any other suitable response</b></p> | 2        | <p>One mark for correct response up to a total of two marks.</p>  |

| Question |     | Expected response(s)   | Max mark | Additional guidance  |
|----------|-----|--|----------|--|
| 5.       | (c) | <p>Any of the following techniques:</p> <ul style="list-style-type: none"> <li>• 2D graphic techniques</li> <li>• 3D graphic techniques</li> <li>• 3D solid model/CAD model/ inventor (any named modelling package)</li> <li>• Orthographic drawings/Dimensioned views/ Working drawing</li> <li>• Scaled up detail</li> <li>• Exploded/assembly drawing</li> </ul> <p><b>Any other suitable response</b></p>  | 2        | <p>One mark per correct response up to total of two marks.</p> <p>Modelling on its own does not imply a graphic technique and scores zero marks.</p> <p>'Sketch' scores one mark.<br/>'Drawing' scores one mark.</p> <p>'Sketching and drawing' scores one mark as this is a repetition.</p> <p>Mood board or lifestyle board score zero marks.</p> <p>'3D modelling' is commonly used when referring to CAD models and scores one mark.</p> |
|          | (d) | <p>One mark for:</p> <ul style="list-style-type: none"> <li>• See it in 3D (see what it looks like) / show it to others</li> <li>• Provides an accurate representation of the sole</li> <li>• Cheaper than traditional methods</li> <li>• Time efficient (man hours)</li> <li>• Changes can be easily made</li> <li>• Problems can be identified at an early stage</li> <li>• Alternative solutions can be made</li> <li>• Very little waste material</li> </ul> <p><b>Any other suitable response</b></p> | 2        | <p>One mark per correct response up to total of two marks.</p> <p>Unqualified 'cheap', 'quick' and 'easy' responses score zero marks.</p> <p>Responses that refer to testing specific design issues may attract marks i.e. testing for safety or testing for function.</p>   |
|          | (e) | (i) <p>One mark for:</p> <ul style="list-style-type: none"> <li>• Increased profits</li> <li>• Low running costs</li> <li>• Cheap material costs</li> <li>• Skilled work force</li> <li>• Cheap premises cost</li> <li>• Cheap labour costs</li> </ul> <p><b>Any other suitable response</b></p>   | 1        | One mark for correct response.   |

| Question |      | Expected response(s)   | Max mark | Additional guidance  |
|----------|------|--|----------|--|
|          | (ii) | One mark for: <ul style="list-style-type: none"> <li>• Workers to be paid a living wage</li> <li>• Acceptable health and safety at work conditions</li> <li>• Respect the cultural identity/language of the workforce</li> </ul> Any other suitable response | 2        | One mark per correct response up to total of two marks.<br><br>Responses referencing ' <i>fair pay and safe working conditions</i> ' will attract marks. |

[END OF MARKING INSTRUCTIONS]