



National  
Qualifications  
2016

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**2016 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>Spinner made from low cost thermoplastic sheet.</p> <p>One mark each for:</p> <ul style="list-style-type: none"> <li>• Available in a wide range of colours</li> <li>• Easy to form to the required shape</li> <li>• Easy to work with</li> <li>• Can be recycled</li> <li>• Can be reformed if mistakes are made</li> <li>• Hardwearing/durable</li> <li>• Lightweight (to spin in wind)</li> </ul> <p><b>Any other suitable response</b></p>	2	<p>One mark for each correct response up to a maximum of two marks.</p> <p>Ignore comments that, whilst true, do not answer the question or are repetitions.</p> <p>Eg <i>'Thermoplastic is cheap, (ignore this) it is durable and looks attractive'</i> scores two marks.</p> <p>Eg <i>'Thermoplastic is heat resistant, (incorrect) it is durable and looks attractive'</i> scores only one mark as the first statement is incorrect.</p> <p>Responses stating <i>'strong', 'hardwearing' or 'robust'</i> score one mark.</p> <p>Responses referring to durability issues can gain marks.</p> <p><i>'Easily bendable'</i> scores one mark. No reference to heating required.</p>

Question		Expected Answer(s)	Max Mark	Additional Guidance
	(a) (ii)	<p>Forming thermoplastic strip.</p> <p>A description that includes two of the following:</p> <ul style="list-style-type: none"> <li>• Heat the thermoplastic until it softens</li> <li>• Bend it around a former</li> <li>• Leave to cool</li> </ul>	2	<p>One mark for each correct stage up to a maximum of two marks.</p> <p>Where candidates state '<i>strip heater</i>' as equipment this should be accepted.</p> <p>'<i>Heat it</i>' scores one mark.</p> <p>'<i>Heat it and cool it</i>' scores one mark.</p> <p>'<i>Heat it and bend it</i>' scores one mark.</p> <p>'<i>Bend it</i>' on its own scores zero marks (reference should be made to a former to score one mark).</p> <p>References to templates instead of formers score zero marks.</p> <p>Responses referring to industrial processes score zero marks.</p>
	(iii)	<p>Edge finishing.</p> <p>Explanations indicating that:</p> <ul style="list-style-type: none"> <li>• It is easier to smooth a flat edge rather than a twisted edge</li> <li>• It is easier to hold/clamp the flat thermoplastic</li> <li>• The thermoplastic is less likely to snap</li> <li>• It is easier to access the edges</li> </ul> <p><b>Any other suitable response</b></p>	2	<p>One mark for each correct response up to a maximum of two marks.</p> <p>'<i>It is easier and faster</i>' scores two marks.</p>
	(b) (i)	<p>Waste material.</p> <p>Explanations indicating that:</p> <ul style="list-style-type: none"> <li>• The gap allows space for the width of cut from the saw blade</li> <li>• Inaccurate cuts will not damage the squares</li> <li>• This would allow the edges to be finished to a square</li> </ul>	1	<p>One mark for correct explanation.</p>

Question		Expected Answer(s)	Max Mark	Additional Guidance
	(b) (ii)	<p>Soft jaws.</p> <p>Explanations indicating that:</p> <ul style="list-style-type: none"> <li>• This avoids surface damage to the thermoplastic from the jaws of the engineer's vice</li> </ul>	1	One mark for correct explanation.
	(c)	<p>Suitability of beech for top.</p> <p>One mark for:</p> <ul style="list-style-type: none"> <li>• It looks attractive</li> <li>• It is easy to work with</li> <li>• It is strong/robust</li> <li>• It is locally sourced</li> <li>• It is readily available</li> <li>• It is durable/long lasting/hardwearing</li> <li>• It can be sourced in an environmentally friendly manner</li> </ul> <p><b>Any other suitable response</b></p>	2	<p>One mark for each correct response up to a total of two marks.</p> <p>Ignore comments that do not answer the question or are repetitions.</p> <p>Eg <i>'Beech is a hardwood, it is durable and looks attractive'</i> scores two marks.</p> <p>Eg <i>'Beech is cheap, it is durable and looks attractive'</i> scores one mark as the first statement refers to low cost (see below).</p> <p>Where reference to low cost is made it must compare this to other possible materials to gain a mark.</p> <p><i>'Easy to clean'</i> is too vague and scores zero marks.</p> <p><i>'Lightweight'</i> scores zero marks as it is not a requirement of the wind chime part.</p>
	(d)	<p>Sustainable forest.</p> <p>Explanations indicating that:</p> <ul style="list-style-type: none"> <li>• Managed forests where trees are replaced after harvesting</li> <li>• When trees are cut down they are replanted.</li> </ul> <p><b>Any other suitable response</b></p>	1	One mark for correct explanation.

Question		Expected Answer(s)	Max Mark	Additional Guidance
	(e) (i)	<p>Central hole marked out.</p> <p>A description/graphic that includes the following:</p> <ul style="list-style-type: none"> <li>• Draw the diagonals using a rule/straight edge</li> </ul> <p><b>OR</b></p> <ul style="list-style-type: none"> <li>• Measure half way along each edge with a rule</li> <li>• Mark across with a try square and pencil</li> </ul> <p>Option for marking centre:</p> <ul style="list-style-type: none"> <li>• Indent the beech with a bradawl/scraper/centre punch</li> </ul> <p><b>Any other suitable response</b></p>	2	<p>Marked on a 2-1-0 basis</p> <p>The candidate response should be marked holistically up to a total of two marks.</p> <p>Where a candidate states '<i>Draw the diagonals using a rule/straight edge</i>' this scores two marks as they clearly understand how to mark out the hole.</p> <p><b>Where candidates do not name tools a maximum of one mark may be awarded.</b></p> <p>A pencil is not considered as a tool.</p> <p>Lists of tools score zero marks eg '<i>use a rule and try square.</i>'</p>
	(ii)	<p>Benefits of varnish.</p> <p>A description that covers two of the following benefits:</p> <ul style="list-style-type: none"> <li>• It enhances the look of the beech</li> <li>• It protects the beech against moisture</li> <li>• Extends lifespan</li> <li>• Easy to clean</li> <li>• Protects against physical damage such as bumps, scratches, scrapes etc.</li> </ul> <p><b>Any other suitable response</b></p>	2	<p>One mark for each correct benefit up to a maximum of two marks.</p>

Question		Expected Answer(s)	Max Mark	Additional Guidance
	(e) (iii)	<p>High standard finish on beech.</p> <p>A description that covers three of the following stages:</p> <ul style="list-style-type: none"> <li>• Rub off pencil marks</li> <li>• Abrade beech with rough abrasive paper</li> <li>• Raise the grain</li> <li>• Abrade beech with smooth abrasive paper</li> <li>• Apply <b>layers</b> of varnish</li> <li>• Rub down with steel wool</li> <li>• Ensure the brush/cloth is not overloaded with stain</li> <li>• Brush/wipe with the grain</li> <li>• Brush/wipe out any drips or runs</li> <li>• Remove any hairs that come off the brush</li> <li>• Follow the instructions on the tin/spray can</li> <li>• Spray from correct distance</li> <li>• Build up thin coats as required</li> </ul> <p><b>Any other suitable response</b></p>	3	<p>One mark for each valid point up to a maximum of three marks.</p> <p>There are two key stages (<b>preparation and application</b>) that candidates are expected to refer to in this response. Candidates must make at least one valid point from one stage and two from the other to gain three marks.</p> <p>Candidates can achieve a maximum of two marks if they refer to only one of the categories.</p> <p>Descriptions referring to filing score zero marks.</p> <p>Exemplar responses:</p> <p><i>‘Sand with rough sand paper then sand with smooth sand paper. Apply a <b>thin coat</b> of varnish.’</i> (Three marks).</p> <p><i>‘Sand with rough sand paper then sand with smooth sand paper. Apply varnish.’</i> (Two marks).</p> <p>This is because <i>‘Apply varnish’</i> repeats the question and does not ensure a high quality finish.</p>
	(f)	<p>Reasons for brass.</p> <p>One mark each for:</p> <ul style="list-style-type: none"> <li>• Does not rust/corrode/ weatherproof/non-ferrous</li> <li>• Does not require a finish</li> <li>• Easy to work with</li> <li>• Strong/robust</li> <li>• Durable/long lasting/ hardwearing</li> <li>• Acoustic qualities</li> <li>• Aesthetic reasons (‘looks good’)</li> </ul> <p><b>Any other suitable response</b></p>	2	<p>Ignore comments that do not answer the question or are repetitions.</p> <p>One mark for each correct response up to a maximum of two marks.</p> <p>References to cost score zero marks unless qualified.</p> <p><i>‘Lightweight’</i> scores zero marks as it is not a requirement of the wind chime part.</p>

Question		Expected Answer(s)	Max Mark	Additional Guidance
	(g)	<p>Manufacturing the chime.</p> <p>A description that could include some of the following:</p> <ul style="list-style-type: none"> <li>• Secure the brass in a vice</li> <li>• Saw/cut the brass with a hacksaw</li> <li>• File the rough edges left by the saw</li> <li>• Use a flat file to angle the edge at a 45°</li> <li>• Secure piece of brass in lathe</li> <li>• Cut 45° angle (lathe tool)</li> <li>• Create the flat end using a file</li> <li>• Mark out the position of the hole using steel rule/scraper /eng. square</li> <li>• Centre punch the position of the hole</li> <li>• Mount brass in machine vice</li> <li>• Drill the hole with a pillar drill.</li> <li>• Remove any burrs with abrasive paper/file</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>There are four key stages to the manufacture of this component:</p> <ul style="list-style-type: none"> <li>• Chamfering end</li> <li>• Flattening surface</li> <li>• Preparing for drilling</li> <li>• Making hole</li> </ul> <p>Alternative stages could be:</p> <ul style="list-style-type: none"> <li>• Marking out</li> <li>• Cutting bar to length</li> <li>• Facing off</li> </ul> <p>One mark awarded for each stage where reference has been made to a suitable tool.</p> <p>The following examples score one mark each and give an indication of the level of response required:</p> <p><i>‘Face off the bar using a lathe.’</i></p> <p><i>‘Use a file to chamfer one end.’</i></p> <p><i>‘Use the file to make the flat area on the other end.’</i></p> <p><i>‘Mark out the position of the hole with rule and scriber.’</i></p> <p><i>‘Drill the hole.’</i> (Assumed using a drill).</p>
		<b>Total marks</b>	<b>24</b>	

## Section 2

Question		Expected Answer(s)	Max Mark	Additional Guidance	
2.	(a)	<p>A description of a suitable test to evaluate the function of the washing machine:</p> <p>Test:</p> <ul style="list-style-type: none"> <li>In a laboratory the manufacturer would take a range of stained clothes and wash them. They would then examine the cleaned clothes and judge how well the machine performed</li> </ul> <p>User Trial:</p> <ul style="list-style-type: none"> <li>Ask a range of users to clean a variety of dirty clothes over the period of a week and then provide feedback on how well the machine performed</li> </ul>	2	<p>Marked on a scale of 2-1-0.</p> <p>Candidates must refer to at least two significant stages of testing or user trialling to gain full marks.</p> <p>Test:</p> <ul style="list-style-type: none"> <li>Stain clothes</li> <li>Wash clothes</li> <li>Examine clothes</li> </ul> <p>User Trial:</p> <ul style="list-style-type: none"> <li>Deliver washing machines</li> <li>Wash dirty clothes</li> <li>Feedback results</li> </ul>	
	(b)	<p>Environmental impact.</p> <p>A description that covers any two of the following:</p> <ul style="list-style-type: none"> <li>Improve energy rating</li> <li>Energy use in production</li> <li>Eco friendly energy source</li> <li>Reduce volume of water used</li> <li>Materials</li> <li>Use recycled materials/ recycle waste material</li> <li>Easily replaced parts</li> <li>Reduce packaging</li> </ul> <p><b>Any other suitable response</b></p>	2	<p>One mark per correct description up to a total of two marks.</p>	
	(c)	(i)	<p>Suitable process for hinge.</p> <p>One mark for:</p> <ul style="list-style-type: none"> <li>Die casting</li> </ul>	1	<p>One mark for correct process.</p> <p>Sand casting/casting scores zero marks.</p>
		(ii)	<p>Suitable material for hinge.</p> <p>One mark for:</p> <ul style="list-style-type: none"> <li>Aluminium</li> <li>Zinc</li> <li>Stainless steel</li> <li>Brass</li> </ul> <p><b>Any other suitable response</b></p>	1	<p>One mark for correct material.</p> <p>Material stated does not have to relate to die casting in the previous question.</p> <p>Steel scores zero marks.</p>

Question			Expected Answer(s)	Max Mark	Additional Guidance
	(c)	(iii)	<p>Rapid prototyping hinge.</p> <p>One mark for:</p> <ul style="list-style-type: none"> <li>• See it in 3D (see what it looks like)</li> <li>• Cheaper than traditional methods</li> <li>• Quicker than traditional methods</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> </ul> <p>Any other suitable response</p>	2	<p>One mark per correct description up to a total of two marks.</p> <p>Unqualified '<i>cheap</i>', '<i>quick</i>' and '<i>easy</i>' responses score zero marks.</p> <p>Responses that refer to testing specific design issues may attract marks ie testing for safety or testing for function.</p>
			<b>Total marks</b>	<b>8</b>	

Question			Expected Answer(s)	Max Mark	Additional Guidance
3.	(a)	(i)	<p>Wrist band ergonomics.</p> <p>Candidates may refer to products similar to the wrist band.</p> <p>Anthropometrics:</p> <ul style="list-style-type: none"> <li>• The wrist diameter suits diameter of band</li> <li>• Button size for finger tips</li> </ul> <p>Physiology:</p> <ul style="list-style-type: none"> <li>• The non-slip inner coating does not slide on the wrist</li> <li>• Lightweight material</li> </ul> <p>Psychology:</p> <ul style="list-style-type: none"> <li>• The yellow numbers make you feel energised</li> <li>• Makes a sound to alert the user</li> </ul> <p><b>Any other suitable response</b></p>	4	<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>Four suitable responses will gain four 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.</p> <p><i>'Adjustable 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, eg <i>'5<sup>th</sup> percentile for the band diameter suiting the wrist'</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: <i>'It must be easy to see'</i> scores zero marks.</p> <p>Higher order specification type statements can gain marks: <i>'The numbers on the screen should be easy to see'</i> scores one mark.</p>

Question		Expected Answer(s)	Max Mark	Additional Guidance
	(a)	(ii)	2	<p>Wrist band durability.</p> <p>Candidates may refer to products similar to the wrist band.</p> <p>Candidates may make reference to:</p> <ul style="list-style-type: none"> <li>• Vibrations when exercising</li> <li>• Withstand being dropped</li> <li>• Weatherproof</li> <li>• Sweat proof</li> <li>• 24 hour a day use</li> <li>• Scuffing</li> <li>• Suitable material</li> </ul> <p><b>Any other suitable response</b></p> <p>One mark per correct description up to a total of two marks.</p> <p>Basic specification type statements such as: <i>'It must be strong'</i> or <i>'It must be durable'</i> score zero marks.</p> <p>Higher order specification type statements such as: <i>'The material selected should be impact resistant'</i> score one mark.</p>

Question		Expected Answer(s)	Max Mark	Additional Guidance
	(a) (iii)	<p>Wrist band aesthetics.</p> <p>Candidates may refer to products similar to the wrist band.</p> <p>Candidates may make reference to:</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>	<b>2</b>	<p>One mark per correct description up to a total of two marks.</p> <p>Where candidates choose to describe the aesthetic qualities of this type of product full marks may be awarded.</p> <p><i>Eg 'the blue and silver colours make it look modern' (one mark), 'the metal and plastic materials contrast with each other' (one mark).</i></p> <p><i>'It has to look good'</i> scores zero marks.</p> <p>Where candidates state <i>'It has to look good'</i> this should be linked to increased sales to gain one mark.</p> <p><i>'It has to look good so that people will buy it'</i> scores one mark.</p> <p><i>'It has to be aesthetically pleasing so that people will buy it'</i> scores zero marks as this repeats the question.</p> <p>Basic specification type statements such as: <i>'It must look good'</i> scores zero marks.</p> <p>Higher order specification type statements such as: <i>'The colours used should appeal to the target market'</i> score one mark.</p>
	(b) (i)	<p>Explanation of niche marketing may include:</p> <ul style="list-style-type: none"> <li>• Targeting product at a very <b>specific</b> market</li> <li>• Small but <b>focussed</b> market segment</li> </ul> <p><b>Any other suitable response</b></p>	<b>1</b>	<p>One mark for correct explanation.</p> <p>A specific example of a market niche scores one mark.</p>

Question		Expected Answer(s)	Max Mark	Additional Guidance
	(b) (ii)	<p>Explanation of market pull may include:</p> <ul style="list-style-type: none"> <li>• Consumers need change resulting in new products being designed</li> <li>• Other companies launch similar products to satisfy consumer demand</li> </ul> <p><b>Any other suitable response</b></p>	1	One mark for correct explanation.
	(c)	<p>Suitable thermoplastic.</p> <p>Material:</p> <ul style="list-style-type: none"> <li>• Polypropylene</li> <li>• ABS</li> <li>• HDPE</li> <li>• HIPS</li> <li>• Nylon</li> <li>• Polycarbonate</li> </ul> <p><b>Any other suitable response</b></p> <p>Reason:</p> <ul style="list-style-type: none"> <li>• Impact resistant</li> <li>• Flexible</li> <li>• Strong/hardwearing/robust</li> <li>• Durable/long lasting</li> <li>• Economic</li> <li>• Easy to shape</li> <li>• Easy to clean</li> <li>• Wide range of colours</li> <li>• Recyclability</li> </ul> <p><b>Any other suitable response</b></p>	2	<p>One mark for correct material.</p> <p><i>'Acrylic'</i> scores zero marks.</p> <p>One mark for correct reason. Candidates can name the wrong plastic but gain a mark for a suitable property.</p>
		<b>Total marks</b>	<b>12</b>	

Question		Expected Answer(s)	Max Mark	Additional Guidance
4.	(a)	<p>Computer generated models.</p> <p>Advantages may include:</p> <ul style="list-style-type: none"> <li>• Can see/rotate in 3D</li> <li>• Accuracy</li> <li>• Produced quickly</li> <li>• Long term economic benefit</li> <li>• Easy to edit/change</li> <li>• Can send/share electronically</li> <li>• Ease of storage</li> <li>• Easy to export to CAM/CNC/rapid prototyping</li> </ul> <p><b>Any other suitable response</b></p>	2	<p>One mark per correct response up to a total of two marks.</p> <p>Economic reasons must be backed up by reference to long term cost reduction.</p> <p><i>'Cheap'</i> scores zero marks.</p> <p><i>'Cheap in long term'</i> scores one mark.</p>
	(b)	<p>Standard components.</p> <p>Benefits may include:</p> <ul style="list-style-type: none"> <li>• Cheaper than producing yourself</li> <li>• Speeds up production process</li> <li>• Can be used on different products</li> <li>• Reliable/quality assured by producer</li> <li>• Ease of repair/maintenance</li> <li>• Easy to source</li> <li>• Will fit common tools</li> <li>• Can transfer across different products</li> </ul> <p><b>Any other suitable response</b></p>	2	<p>One mark per correct description up to a total of two marks.</p> <p>Unqualified <i>'cheap'</i> scores zero marks.</p> <p>Unqualified <i>'quick/fast'</i> scores zero marks.</p>
	(c)	<p>CAM.</p> <p>Drawbacks:</p> <ul style="list-style-type: none"> <li>• Setup costs</li> <li>• Training costs</li> <li>• Hardware/software costs</li> <li>• Breakdown</li> <li>• Deskilled workforce</li> <li>• Employability issues</li> <li>• Increased energy use</li> </ul> <p><b>Any other suitable response</b></p>	2	<p>One mark per correct description up to a total of two marks.</p> <p>CAD issues such as software glitches may also attract marks.</p> <p>Responses referring to cost must refer to initial setup to gain one mark.</p>

Question		Expected Answer(s)	Max Mark	Additional Guidance
	(d)	Brand name.  Benefits may include: <ul style="list-style-type: none"> <li>• Trust in a brand name/ reputation</li> <li>• Guaranteed sales</li> <li>• Advertising</li> <li>• Premium pricing</li> <li>• Customer loyalty</li> </ul> Any other suitable response	2	One mark per correct description up to a total of two marks.
		<b>Total marks</b>	<b>8</b>	

Question		Expected Answer(s)	Max Mark	Additional Guidance
5.	(a)	<p>Generate ideas from mood board.</p> <p>Response must include aspects taken from the mood board.</p> <p><b>Example</b> Look at the images on the mood board and use the colours/ materials/patterns/shapes/etc. to influence/inspire your ideas.</p>	2	<p>One mark per correct description up to a total of two marks.</p> <p>One mark may be awarded for identifying a suitable visual element.</p> <p>One mark may be awarded for reference to applying that into ideas.</p> <p>The designer gathers lots of images and then draws ideas - <b>scores zero marks.</b></p> <p>Candidates may refer to colour, material, pattern, shape etc. that can be taken from the mood board.</p>
	(b)	<p>Open design brief.</p> <p>Any of the following reasons:</p> <ul style="list-style-type: none"> <li>• Can be more creative</li> <li>• Gives them a wider range of research/ideas</li> <li>• Diverse range of products for consumer</li> <li>• Designer can have more influence/not client driven</li> </ul> <p><b>Any other suitable response</b></p>	2	<p>One mark per correct response up to a total of two marks.</p>
	(c)	(i) <p>Initial ideas graphic technique and explanation.</p> <p>Any of the following techniques with a suitable explanations:</p> <ul style="list-style-type: none"> <li>• 2D/3D sketches</li> <li>• 3D solid model/CAD model/ inventor (any modelling package)</li> </ul> <p><b>Any other suitable response</b></p> <p><b>Example</b> Initial ideas would be produced quickly using sketches.</p>	2	<p>One mark for correct graphic technique and one mark for explanation.</p> <p>Modelling on its own does not imply a graphic technique and scores zero marks.</p> <p>Explanations referring to the accuracy of CAD are acceptable.</p>

Question		Expected Answer(s)	Max Mark	Additional Guidance
	(ii)	<p>Planning for manufacture graphic technique and explanation.</p> <p>Any of the following techniques with a suitable explanation:</p> <ul style="list-style-type: none"> <li>• Orthographic drawings</li> <li>• Scaled up detail</li> <li>• Exploded/assembly drawing</li> <li>• 3D solid model/CAD model/ inventor (any modelling package)</li> <li>• Dimensioned views</li> <li>• Working drawing</li> </ul> <p><b>Any other suitable response</b></p> <p><b>Example</b> When planning for manufacture a working drawing must be produced. This will provide all the relevant dimensions clearly to the manufacturer, ready for production.</p>	2	<p>One mark for correct graphic technique and one mark for explanation.</p> <p>Modelling on its own does not imply a graphic technique and scores zero marks.</p> <p>Note - a different graphic technique and explanation must be used for 5c(i) and 5c(ii).</p>
		<b>Total marks</b>	<b>8</b>	

[END OF MARKING INSTRUCTIONS]