

**CAMBRIDGE INTERNATIONAL EXAMINATIONS**

Cambridge International Advanced Subsidiary and Advanced Level

## **MARK SCHEME for the October/November 2014 series**

### **9705 DESIGN AND TECHNOLOGY**

**9705/13**

Paper 1, maximum raw mark 120

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### Section A

<b>1</b>	<p><b>(a)</b> Each appropriate reason 1 mark  e.g. reason related to lower cost  reason related to it being safer to use  more environmentally friendly</p>	[1]  [1]	<b>[2]</b>
	<p><b>(b) (i)</b> Appropriate cutting and smoothing processes described  Details of appropriate tools, equipment and safety precautions</p>	[0–3] [0–3]	<b>[6]</b>
	<p><b>(ii)</b> Appropriate bending process described  Details of appropriate tools, equipment and safety precautions</p>	[0–3] [0–3]	<b>[6]</b>
	<p><b>(iii)</b> Welding process described  Details of appropriate tools, equipment and safety precautions</p>	[0–3] [0–3]	<b>[6]</b>
		<b>[Total: 20]</b>	
<b>2</b>	<p><b>(a) (i)</b> Suitable glue named  e.g. PVA, glue stick, glue gun, spray adhesive</p>	[1]	<b>[1]</b>
	<p><b>(ii)</b> Suitable material named  e.g. foamboard, MDF, acrylic</p>	[1]	<b>[1]</b>
	<p><b>(b) (i)</b> Appropriate marking out process described  Appropriate marking out and assembly processes described  Details of appropriate tools, equipment and safety precautions</p>	[0–2] [0–2] [0–2]	<b>[6]</b>
	<p><b>(ii)</b> Appropriate marking out process described  Appropriate cutting out and assembly processes described  Details of appropriate tools, equipment and safety precautions</p>	[0–2] [0–2] [0–2]	<b>[6]</b>
	<p><b>(iii)</b> Four pieces drawn  Three fins drawn in line close together  Four pieces correctly laid out</p>	[1] [2] [3]	<b>[3]</b>
	<p><b>(iv)</b> Appropriate cutting out process described  Some details of appropriate tools</p>	[0–2] [1]	<b>[3]</b>
		<b>[Total: 20]</b>	

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- 3 (a) Appropriate method described [0–2] [2]  
e.g. matt black paint and chalk  
matt white finish and board marker (felt pen)
- (b) (i) Appropriate cutting and smoothing processes described [0–3]  
Details of appropriate tools, equipment and safety precautions [0–3] [6]
- (ii) Appropriate method of making groove described [0–2]  
Appropriate method of making sloping sides described [0–2]  
Details of appropriate tools, equipment and safety precautions [0–2] [6]
- (iii) Varnishing process described [0–3]  
Details of appropriate tools, equipment and safety precautions [0–3] [6]
- [Total: 20]**

### Section B

- 4 (a) Appropriate explanation of the purpose of feature shown at X [0–2] [2]  
e.g. This, along with the other three cut outs, allows the top to fit onto the base. The top is then rotated to lock it in place.
- (b) Problem one identified and described [0–2]  
Problem two identified and described [0–2] [4]  
e.g. parts A and B will not fit together as the slots are not long enough  
the table is not stable as the bottom is too small
- (c) Explanation of how problem one could be overcome [0–3]  
Explanation of how problem two could be overcome [0–3] [6]  
e.g. length of slots needs to be increased  
bottom needs to be wider than the top
- (d) Situation has been analysed and relevant [0–3]  
Issues/points identified [0–3]  
Clear and appropriate explanations of why issues/points are considered relevant [0–3]  
Specific examples/evidence used to support conclusions [0–2] [8]
- [Total: 20]**

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<b>5</b>	<p><b>(a)</b> Purpose of piece of paper shown at X clearly explained e.g. it is glued over the handles onto the bag and reinforces the joining of the handles to the bag</p> <p><b>(b)</b> Problem one identified and described Problem two identified and described e.g. some of the fold lines are missing the bottom of the bag is too small and will not join together</p> <p><b>(c)</b> Explanation of how problem one could be overcome Explanation of how problem two could be overcome e.g. the three missing fold lines need to be added the 25 mm at the bottom of the development needs to be increased to 55+ mm so that the parts that form the bottom of the bag can be glued together</p> <p><b>(d)</b> Situation has been analysed and relevant issues/points identified Clear and appropriate explanations of why issues/points are considered relevant Specific examples/evidence used to support conclusions</p>	<p>[0–2]    <b>[2]</b></p> <p>[0–2] [0–2]    <b>[4]</b></p> <p>[0–3] [0–3]    <b>[6]</b></p> <p>[0–3] [0–3] [0–2]    <b>[8]</b></p> <p><b>[Total: 20]</b></p>
<b>6</b>	<p><b>(a) (i)</b> Dowel is chamfered so it goes in hole easily</p> <p><b>(ii)</b> Groove allows excess glue to squeeze out</p> <p><b>(b)</b> Problem one identified and described Problem two identified and described e.g. no way of attaching jig to the wood no way of locating position of jig (holes) on wood</p> <p><b>(c)</b> Explanation of how problem one could be overcome Explanation of how problem two could be overcome e.g. show method of attaching jig to wood show method of locating the position of the jig on the wood so that holes are drilled in the correct places</p> <p><b>(d)</b> Situation has been analysed and relevant issues/points identified Clear and appropriate explanations of why issues/points are considered relevant Specific examples/evidence used to support conclusions</p>	<p>[1]    <b>[1]</b></p> <p>[1]    <b>[1]</b></p> <p>[0–2] [0–2]    <b>[4]</b></p> <p>[0–3] [0–3]    <b>[6]</b></p> <p>[0–3] [0–3] [0–2]    <b>[8]</b></p> <p><b>[Total: 20]</b></p>

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### Section C

7	(a)	One pre-conceived Idea presented	[0–4]	
		<b>OR</b>		
		The development and selection of a range of ideas into a single design proposal which would appear to work but lacks some technical detail	[5–8]	
		<b>OR</b>		
		The development and selection of a range of ideas into a single design proposal that includes sufficient technical detail to show that the proposed solution would clearly work	[9–12]	
		Clarity and quality of sketching and explanatory notes	[0–4]	
		Evaluation (reasons for selection)	[0–4]	<b>[20]</b>
	(b)	As for part (a)		<b>[20]</b>
	(c)	As for part (a)		<b>[20]</b>
	(d)	The drawing will exhibit a reasonable standard of outcome and show some of the required design features	[0–5]	
		<b>OR</b>		
		The drawing will exhibit a good standard of outcome and show most of the design features required to make the product function as intended	[6–9]	
		<b>OR</b>		
		The drawing will be completed to a high standard of outcome and fully show the design features required to make the product function as intended	[10–14]	
		Some use made of colour and tone to enhance the visual Impact of the drawing	[0–2]	
		<b>OR</b>		
		Good use has been made of colour and tone to enhance the visual impact of the drawing	[3–4]	
		<b>OR</b>		
		Very good use has been made of colour, tone and material representation to enhance the visual impact of the drawing	[5–6]	<b>[20]</b>
				<b>[Total: 80]</b>

Questions 8 and 9 as for Question 7