

**CAMBRIDGE INTERNATIONAL EXAMINATIONS**

Cambridge International Advanced Subsidiary and Advanced Level

## **MARK SCHEME for the October/November 2015 series**

### **9705 DESIGN AND TECHNOLOGY**

**9705/13**

Paper 1, maximum raw mark 120

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### Section A

1	(a)	(i) Suitable glue named 3, e.g. acrylic cement, tensol, polystyrene cement	[1]		
		(ii) Suitable glue named, e.g. PVA polyvinyl acetate	[1]	[2]	
	(b)	(i) Appropriate vacuum forming process described	[0–3]		
		Details of appropriate of tools, equipment and safety precautions	[0–3]	[6]	
		(ii) Appropriate making process for part <b>A</b> described	[0–3]		
			Details of appropriate of tools, equipment and safety precautions	[0–3]	[6]
		(iii) Appropriate making process for parts <b>B</b> and <b>C</b> described	[0–3]		
			Details of appropriate of tools, equipment and safety precautions	[0–3]	[6]
					[Total: 20]
	2	(a)	Each appropriate way of gathering opinions 1 mark		
e.g. questionnaire			[1]		
			survey, talking to people, etc.	[1]	[2]
(b)		(i) Marking out (correct development)	[0–3]		
		Cutting out and assembly	[0–2]		
		Some appropriate mention of tools or equipment and safety precautions	[1]	[6]	
		(ii) Marking out (correct development)	[0–3]		
		Cutting out, assembly and attachment to <b>A</b>	[0–2]		
		Some appropriate mention of tools or equipment and safety precautions	[1]	[6]	
		(iii) Marking out (correct development)	[0–3]		
	Cutting out, assembly and attachment to <b>A</b>	[0–2]			
	Some appropriate mention of tools or equipment and safety precautions	[1]	[6]		
				[Total: 20]	
3	(a)	(i) Appropriate methods of marking out, cutting out and smoothing described	[0–3]		
		Details of appropriate of tools, equipment and safety precautions	[0–3]	[6]	
		(ii) Appropriate methods of making the groove and holes described	[0–3]		
			Details of appropriate of tools, equipment and safety precautions	[0–3]	[6]
		(iii) Appropriate method of making part <b>C</b> described	[0–3]		
			Details of appropriate of tools, equipment and safety precautions	[0–3]	[6]
	(b) Notes and a sketch used to show that the height and width of the holder would need to be increased	[0–2]	[2]		
				[Total: 20]	

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### Section B

4	(a) Crank correctly identified	[1]	[2]
	Slider correctly identified	[1]	
(b)	Problem one identified and described	[0–2]	[4]
	Problem two identified and described e.g. point <b>B</b> will hit table and prevent motor turning mechanism is too big and will jam when drawer is closed	[0–2]	
(c)	Explanation of how problem one could be overcome	[0–3]	[6]
	Explanation of how problem two could be overcome e.g. distance <b>A-B</b> needs to be reduced to no more than 115 distance <b>B-C</b> needs to be reduced to no more than 260	[0–3]	
(d)	Situation has been analysed and relevant issues/points identified	[0–3]	[8]
	Clear and appropriate explanations of why issues/points are considered relevant	[0–3]	
	Specific examples/evidence used to support conclusions	[0–2]	
			[Total: 20]
5	(a) Appropriate benefit described, e.g. easier and cheaper for printer to end to sweet manufacturer because it can be sent flat pack as no additional materials are required to assemble the box	[0–2]	[2]
	(b) Problem one identified and described Problem two identified and described e.g. lid will not fold to correct shape for display purposes Cannot be assembled as there are not enough glue tabs	[0–2] [0–2]	[4]
(c)	Explanation of how problem one could be overcome	[0–3]	[6]
	Explanation of how problem two could be overcome e.g. additional cut and fold lines correctly added to lid 3 additional glue tabs correctly added including double sided tape	[0–3]	
(d)	Situation has been analysed and relevant issues/points identified	[0–3]	[8]
	Clear and appropriate explanations of why issues/points are considered relevant	[0–3]	
	Specific examples/evidence used to support conclusions	[0–2]	
			[Total: 20]

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6	(a) Helps to fix fitment to a wall. Notes and a sketch used to show that a screw goes through hole and the shank of the screw fits in the slot.	[0–2]	[2]
	(b) Problem one identified and described Problem two identified and described e.g. the beaker will go through the hole and just rest on the lower horizontal piece, there is nothing to prevent it easily falling off it would be very difficult to get the toothbrushes in and out of the holes	[0–2] [0–2]	[4]
	(c) Explanation of how problem one could be overcome Explanation of how problem two could be overcome e.g. make the distance between the two horizontal pieces smaller so that part of the beaker can protrude above the top piece make the holes in the top piece rather than the bottom piece	[0–3] [0–3]	[6]
	(d) 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	[0–3] [0–3] [0–2]	[8]
			[Total: 20]

### Section C

7	(a) One pre-conceived Idea presented <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 <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 Clarity and quality of sketching and explanatory notes Evaluation (reasons for selection)	[0–4]  [5–8]  [9–12] [0–4] [0–4]	[20]
	(b) As for part (a)		[20]
	(c) As for part (a)		[20]
	(d) The drawing will exhibit a reasonable standard of outcome and show some of the required design features <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 <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	[0–5]  [6–9]  [10–14]	

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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**