

**MARK SCHEME for the October/November 2009 question paper  
for the guidance of teachers**

**9705 DESIGN AND TECHNOLOGY**

**9705/12**

Paper 12 (Written 1), maximum raw mark 120

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

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1	(a)	Drawing shows layers of wood	(1)	[2]	
		Notes identify thin layers of wood or veneers	(1)		
	(b) (i)	Making of template described	(0–2)	[6]	
		Use of template described	(0–2)		
		Details of tools and equipment	(0–2)		
	(b) (ii)	Appropriate method of cutting out sides described	(0–2)	[6]	
		Appropriate methods of cutting out slots and smoothing edges described	(0–2)		
		Details of tools / equipment / safety	(0–2)		
	(b) (iii)	Application of first coat of varnish described	(0–2)	[6]	
		Sanding and application of second coat or cleaning of equipment described	(0–2)		
		Details of tools / equipment / safety	(0–2)		
	<b>[Total: 20]</b>				
2	(a)	Suitable metal named e.g. aluminium	(1)	[2]	
		Suitable reason given e.g. weather resistant	(1)		
	(b) (i)	Pattern making described	(0–4)	[6]	
		Details of tools / equipment / safety	(0–2)		
	(b) (ii)	Casting process described	(0–4)	[6]	
		Details of tools / equipment / safety	(0–2)		
	(b) (iii)	Suitable method of hinging described	(0–4)	[6]	
		Details of tools / equipment / safety	(0–2)		
	<b>[Total: 20]</b>				
	3	(a)	Drawing showing outer layers and corrugations	(1)	[2]
			Notes explaining outer layers glue to corrugations or similar	(1)	
		(b)	Method joins corners but not securely	(0–2)	[6]
<b>OR</b>					
An appropriate secure joining method described			(0–4)		
		Notes used to clearly describe appropriate joining method	(0–2)		
(c)		Appropriate scale	(1)	[6]	
		Base	(1)		
		Each side correctly drawn and positioned 4 × 1	(4)		
(d)		Some understanding of embossing	(0–2)	[6]	
		<b>OR</b>			
		Good understanding of embossing	(0–4)		
	Details of tools / equipment / safety	(0–2)			
<b>[Total: 20]</b>					

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### Section B

- 4 (a) Appropriate use shown – fitting is screwed to two pieces to join them at right angles (0–2) [2]
- (b) Problem 1 described (0–2)  
 Problem 2 described (0–2)  
 e.g. Problems related to parts missing  
 Poor instructions, not have correct equipment etc. [4]
- (c) Explanation of how problem 1 could be overcome (0–3)  
 Explanation of how problem 2 could be overcome (0–3)  
 e.g. Provide quality control checks at the packaging stage  
 Better instructions particularly visual ones  
 Provide basic tools required for assemble with instructions for use [6]
- (d) Situation has been analysed and relevant issues / points have been identified (0–3)  
 Explanation of why these issues / points are considered relevant (0–3)  
 Specific examples or evidence has been used to support the answer (0–2) [8]
- 5 (a) Appropriate explanation – relating to adjusting height and / or angle of chair (0–2) [2]
- (b) Problem 1 described (0–2)  
 Problem 2 described (0–2)  
 e.g. Related to monitor being too high  
 Poor access to keyboard  
 Chair and / or person's legs will not fit under desk [4]
- (c) Explanation of how problem 1 could be overcome (0–3)  
 Explanation of how problem 2 could be overcome (0–3)  
 e.g. how the position of some of the shelves could be altered and possibly some shelves removed. [6]
- (d) Situation has been analysed and relevant issues / points have been identified (0–3)  
 Explanation of why these points / points are considered relevant (0–3)  
 Specific examples or evidence have been used to support answer (0–2) [8]
- [Total: 20]**
- 6 (a) Appropriate explanation related to protecting surface and / or giving it a shiny finish (0–2) [2]
- (b) Problem 1 described (0–2)  
 Problem 2 described (0–2)  
 e.g. Unstable weight at front would tip this design over  
 The part of the design holding the phone would fold flat  
 Difficult to see or take out phone [4]

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- (c) Explanation of how problem 1 could be overcome (0–3)  
Explanation of how problem 2 could be overcome (0–3)  
e.g. Making the bottom of the supporting strut angled rather than horizontal  
Adding a diagonal strut to the front part of the design  
Removing part of front, replacing with see through material [6]
- (d) Situation has been analysed and relevant issues / points have been identified (0–3)  
Explanation of why these issues / points are considered relevant (0–3)  
Specific examples or evidence has been used to support answer (0–2) [8]

[Total: 20]

### Section C

- 7 (a) One pre-conceived idea presented (0–3)  
**OR**  
The development and selection of a range of ideas into a single design proposal which would appear to work but lacks some technical detail (4–7)  
**OR**  
The development and selection of a range of ideas into a single design proposal that includes sufficient technical details to show that the proposed solution would clearly work (8–10)  
Clarity and quality of sketching and explanatory notes (0–3)  
Evaluation (reasons for selection) (0–3) [16]
- (b) As for part (a) [16]
- (c) As for part (a) [16]
- (d) As for part (a) [16]
- (e) The drawing will exhibit a reasonable standard of outcome and show some of the required design features (0–3)  
**OR**  
The drawing will exhibit a good standard of outcome and show most of the design features required to make a product function as intended (4–7)  
**OR**  
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 (8–10)
- Some use of colour and tone to enhance the visual impact of the drawing (0–2)  
**OR**  
Good use has been made of colour and tone to enhance the visual impact of the drawing (3–4)  
**OR**  
Very good use has been made of colour, tone and material representation to enhance the visual impact of the drawing (5–6) [16]

[Total: 80]

Question 8 and 9 as for Question 7