

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS  
GCE Advanced Subsidiary Level and GCE Advanced Level

**MARK SCHEME for the October/November 2010 question paper  
for the guidance of teachers**

**9705 DESIGN AND TECHNOLOGY**

**9705/13**

Paper 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.

Mark schemes must be read in conjunction with the question papers and the report on the examination.

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- 1 (a) Suitable sheet material named (1)  
 e.g. acrylic, polystyrene, aluminium  
 stainless steel.  
 Suitable reason for choice given (1) [2]  
 e.g. surface finish is not required
- (b) (i) Cutting out material described (0–2)  
 Smoothing edges of material described (0–2)  
 Details of tools, equipment and safety precautions (if necessary) (0–2) [6]
- (ii) Appropriate method of fixing identified (1)  
 Fixing method described (0–3)  
 Details of tools, equipment and safety precautions (if necessary) (0–2) [6]
- (iii) Tread cutting described (0–3)  
 Details of tools, equipment and safety precautions (if necessary) (0–3) [6]
- [Total: 20]**
- 2 (a) Sketch shows two (or three) layers of material (1)  
 Materials correctly identified (MDF and veneer) (1) [2]
- (b) (i) Making joint described (0–3)  
 Details of tools, equipment and safety precautions (if necessary) (0–3) [6]
- (ii) Correct method identified (1)  
 e.g. mortise and tenon, dowel joint  
 Method of making described (0–3)  
 Details of tools, equipment and safety precautions (if necessary) (0–2) [6]
- (iii) Making metal plate described (0–2)  
 Joining frame to top described (0–2)  
 Details of tools, equipment and safety precautions (if necessary) (0–2) [6]
- [Total: 20]**

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- 3**
- (a)** Appropriate scale used (1)  
 Base, back and two sides (1)  
 Front (1)  
 Side flaps (1)  
 Top and fold over flap (1)  
 Four correct glue tabs (1) [6]
- (b)** Suitable material named (1)  
 e.g. polystyrene  
 Suitable reason for choice given (1) [2]  
 e.g. can be vacuum formed (thermoplastic).  
 ready coloured
- (c)**
- (i)** Process of making former described (0–3)  
 Details of tools, equipment and safety precautions (if necessary) (0–3) [6]
- (ii)** Process of vacuum forming described (0–3)  
 Details of tools, equipment and safety precautions (if necessary) (0–3) [6]
- [Total: 20]**
- 4**
- (a)** Difference explained (0–2) [2]  
 e. g. Stencil is a sheet of thin material with hole/s cut in it. paint/ink is applied through hole to create design (1 mark)  
 Template is a shape cut out of thin sheet material which can be drawn round. (1 mark)
- (b)** Problem 1 described (0–2)  
 Problem 2 described (0–2) [4]  
 e.g. Problems related to centres of letters O and R falling out, paper not being a suitable material, letters being very close to edge of stencil.
- (c)** Explanation of how problem 1 could be overcome (0–3)  
 Explanation of how problem 2 could be overcome (0–3) [6]  
 e.g. joining centre of letters to outer parts, alternative material used, increasing area around letters.
- (d)** Situation has been analysed and relevant issues/points identified (0–3)  
 Explanation 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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- 5** (a) Appropriate explanation related to quality and safety standards (0–2) [2]  
**A** Lion Mark, **B** 'Declaration of Conformity' meets European Community Standards, **C** British Standards Kite Mark, **D** Not suitable for very young children.
- (b) Problem 1 described (0–2)  
 Problem 2 described (0–2) [4]  
 e.g. Problems related to nothing for child to hold on to (no handles) child could easily slide/fall off back of seat.
- (c) Explanation of how problem 1 could be overcome (0–3)  
 Explanation of how problem 2 could be overcome (0–3) [6]  
 e. g. suitable handle/s added, back rest added.
- (d) Situation has been analysed and relevant issues/points identified (0–3)  
 Explanation of why issues/points are considered relevant (0–3)  
 Specific examples/evidence used to support conclusions (0–3) [8]
- [Total: 20]**
- 6** (a) Appropriate explanation (0–2) [2]  
 e.g. water runs off more quickly, uses less material, not as heavy, more stable than solid timber
- (b) Problem 1 described (0–2)  
 Problem 2 described (0–2) [4]  
 e.g. Related to strength and stability of structure
- (c) Explanation of how problem 1 could be overcome (0–3)  
 Explanation of how problem 2 could be overcome (0–3) [6]  
 e.g. Splaying legs, strengthening seat fixing where it joins legs.
- (d) Situation has been analysed and relevant issues/points identified (0–3)  
 Explanation 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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- 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 detail 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 the 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 made 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]

Questions 8 and 9 as for Question 7