

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

9705/12

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. mild steel, stainless steel, aluminium
 Suitable reason related to strength and/or ease of maintenance/cleaning/finishing (1) [2]
- (b) (i) Making of template described (0–2)
 Using template described (0–2)
 Details of tools, equipment and safety precautions (if necessary) (0–2) [6]
- (ii) Cutting out shape and smoothing edges (0–2)
 Bending shape (0–2)
 Details of tools equipment and safety precautions (if necessary) (0–2) [6]
- (iii) Appropriate method of joining identified (1)
 e.g. riveting, soldering, welding
 Joining method described (0–3)
 Details of tools, equipment and safety precautions (if necessary) (0–2) [6]

[Total: 20]

- 2 (a) (i) Suitable sheet plastic named (1)
 e.g. acrylic, perspex, polystyrene
- (ii) Suitable softwood named (1) [2]
 e.g. pine, spruce, cedar, parana pine, douglas fir
- (b) (i) Making jig described (0–2)
 Using jig described (0–2) [6]
 Details of tools, equipment and safety precautions (if necessary)
- (ii) Appropriate method of making grooves identified (1)
 e.g. router, plough plane
 Appropriate method of making grooves described (0–3)
 Details of tools, equipment and safety precautions (if necessary) (0–2) [6]
- (iii) Appropriate joining method identified (1)
 e.g. mortise and tenon, dowel joint, screws
 Appropriate joining method described (0–3)
 Details of tools, equipment and safety precautions (0–2) [6]

[Total: 20]

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- 3**
- (a)** Appropriate scale used (1)
 Bottom and back (1)
 Sides (1)
 Front (1)
 Top and fold over flap (1)
 Glue tabs (at least 2 correct tabs) (1) [6]
- (b)** Suitable sheet plastic named (1)
 e. g. polystyrene
 Suitable reason for choice given (1) [2]
 e.g. flexible, ready coloured
- (c)**
- (i)** Appropriate method described (0–2)
 Some details given about tools/equipment (1) [3]
- (ii)** Appropriate method described (0–2)
 Some details given about tools/equipment (1) [3]
- (iii)** Appropriate method of securing top/flap identified (1)
 Making/attaching securing method described (0–3)
 Details of tools, equipment and safety precautions (if necessary) (0–2) [6]
- [Total: 20]**
- 4**
- (a)** Sketch and notes explain how board slots in the back of container (0–2) [2]
- (b)** Problem 1 described (0–2)
 Problem 2 described (0–2) [4]
 e.g. Problems related to bags falling/blowing out of container, container being low down on ground
- (c)** Explanation of how problem 1 could be overcome (0–3)
 Explanation of how problem 2 could be overcome (0–3) [6]
 e.g. add a lid/top, make sides higher, put container on a stand.
- (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]**

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- 5 (a) Sketches and notes explain what the male and female formers look like (0–2) [2]
- (b) Problem 1 described (0–2)
 Problem 2 described (0–2) [4]
 e.g. Problems related to the tray being hard to pick up and things being able to slide off the ends
- (c) Explanation of how problem 1 could be solved (0–3)
 Explanation of how problem 2 could be solved (0–3) [6]
 e.g. hand holes made more accessible, lip goes all the way round the tray.
- (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 of function of feature X (0–2) [2]
 e.g. Related to helping to prevent steps slipping or damaging surfaces or people.
- (b) Problem 1 described (0–2)
 Problem 2 described (0–2) [4]
 e.g. Problems related to stability, safety, steps collapsing.
- (c) Explanation of how problem 1 could be overcome (0–3)
 Explanation of how problem 2 could be overcome (0–3) [6]
 e.g. Extra bracing pieces need to be added to both sides and back 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 (0–3) [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]
- [Total: 80]**

Questions 8 and 9 as for Question 7