

## **MARK SCHEME for the October/November 2012 series**

### **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 should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

Cambridge will not enter into discussions about these mark schemes.

Cambridge is publishing the mark schemes for the October/November 2012 series for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level components and some Ordinary Level components.

| Page 2 | Mark Scheme                            | Syllabus | Paper |
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### Section A

- 1 (a) Layers of veneer shown (1)  
Grain at right angles on alternate layers (1) [2]
- (b) (i) Making of jig described (0–2)  
Using jig described (0–2)  
Details of tools, equipment and safety precautions (if necessary) (0–2) [6]
- (ii) Making joint described (0–3)  
Details of tools, equipment and safety precautions (if necessary) (0–3) [6]
- (iii) Painting process described (0–3)  
Details of tools, equipment and safety precautions (if necessary) (0–3) [6]
- [Total: 20]**
- 2 (a) Suitable finish named (1)  
e.g. laminating, varnishing, UV lacquer  
Suitable reason for choice (1) [2]  
e.g. strengthens product, gives glossy appearance, makes surface easier to clean
- (b) Slot and tab fixing drawn (0–3)  
Making process described (0–3) [6]
- (c) Appropriate scale (1)  
4 sides (0–2)  
Base (1)  
Slot and tab fixing and glue tab (or slots and tabs) (1)  
Money slot (1) [6]
- (d) Die cutting process described (0–4)  
Details of tools, equipment and safety precautions (if necessary) (0–2) [6]
- [Total: 20]**

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- 3 (a) Suitable sheet material named (1)  
e.g. acrylic, perspex, polystyrene, aluminium, stainless steel  
Suitable reason for choice given (1) [2]  
e.g. waterproof, no surface finish required, easy to bend
- (b) (i) Bending process described (0–3)  
Details of tools, equipment and safety precautions  
(if necessary) (0–3) [6]
- (ii) Cutting out described (0–2)  
Smoothing edges and holes drilled described (0–2)  
Details of tools, equipment and safety precautions  
(if necessary) (0–2) [6]
- (iii) Appropriate method of joining identified (1)  
e.g. screws  
Appropriate joining method described (0–3)  
Details of tools, equipment and safety precautions  
(if necessary) (0–2) [6]
- [Total: 20]**

### Section B

- 4 (a) Notes and sketch to show how tab fits in slot to hold box together (0–2) [2]
- (b) Problem 1 described (0–2)  
Problem 2 described (0–2) [4]  
e.g. problems related to it being difficult to get forms out of tray, not  
being able to see lettering when tray is full of forms
- (c) Explanation of how problem 1 could be overcome (0–3)  
Explanation of how problem 2 could be overcome (0–3)  
e.g. remove part of front of tray, make back of tray higher and move  
lettering up, put lettering somewhere else on tray [6]
- (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]**

| Page 4 | Mark Scheme                            | Syllabus | Paper |
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- 5 (a) Appropriate explanation related to lifting chair (0–2) [2]
- (b) Problem 1 described (0–2)  
 Problem 2 described (0–2) [4]  
 e.g. related to not being able to stack chair because of bottom cross rail, frame is wider than seat therefore will not fit over seat of another chair
- (c) Explanation of how problem 1 could be overcome (0–3)  
 Explanation of how problem 2 could be overcome (0–3) [6]  
 e.g. remove bottom rail, splay (angle) legs, make seat smaller
- (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]**
- 8 (a) Appropriate explanation related to safety symbol used to indicate an inflammable substance/material (0–2) [2]
- (b) Problem 1 described (0–2)  
 Problem 2 described (0–2) [4]  
 e.g. related to safety issues such as not wearing a mask and working in an unventilated room (closed window)
- (c) Explanation of how problem 1 could be overcome (0–3)  
 Explanation of how problem 2 could be overcome (0–3) [6]  
 e.g. showing window open, spray booth or extraction system being used, mask being used
- (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]**

| Page 5 | Mark Scheme                            | Syllabus | Paper |
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|   |                                                                                                                                                                                 |         |                    |
|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------|
| 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)   | [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</b>                                                              | (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)   | [20]               |
|   |                                                                                                                                                                                 |         | <b>[Total: 80]</b> |

Questions 8 and 9 as for Question 7