

CAMBRIDGE INTERNATIONAL EXAMINATIONS
GCE Advanced Subsidiary Level and GCE Advanced Level

MARK SCHEME for the October/November 2012 series

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 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.

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Section A

| | | | | | |
|------------|--------------|--|------------------------|--------------------|--|
| 1 | (a) | (i) Suitable softwood named e.g. pine, spruce, cedar, parana pine, douglas fir | (1) | [1] | |
| | | (ii) Suitable sheet material named e.g. MDF, plywood | (1) | [1] | |
| | (b) | (i) Process of making handle described | (0–2) | | |
| | | Assembly of handle described | (0–2) | | |
| | | Details of tools, equipment and safety precautions (if necessary) | (0–2) | [6] | |
| | (ii) | Process of making joint described | (0–3) | | |
| | | Details of tools, equipment and safety precautions (if necessary) | (0–3) | [6] | |
| | (iii) | Process of attaching base described | (0–3) | | |
| | | Details of tools, equipment and safety precautions (if necessary) | (0–3) | [6] | |
| | | | | [Total: 20] | |
| | 2 | (a) | Appropriate scale used | (1) | |
| | | | Sides | (0–2) | |
| Base | | | (1) | | |
| Glue tabs | | | (0–2) | [6] | |
| (b) | | Corrugations shown | (1) | | |
| | | Two outer surfaces shown | (1) | [2] | |
| (c) | | (i) Process described | (0–2) | | |
| | | (ii) Process described | (0–2) | | |
| | | (iii) Process described | (0–2) | [6] | |
| (d) | | Making stencil described | (0–2) | | |
| | | Using stencil described | (0–2) | | |
| | | 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. easy to clean, no surface finish required, easy to bend
- (b) (i)** Cutting out described (0–2)
 Smoothing edges described (0–2)
 Details of tools, equipment and safety precautions (if necessary) (0–2) [6]
- (ii)** Bending process described (0–3)
 Details of tools, equipment and safety precautions (if necessary) (0–3) [6]
- (iii)** Joining process described (0–3)
 Details of tools, equipment and safety precautions (if necessary) (0–3) [6]
- [Total: 20]**

Section B

- 4 (a)** Problem 1 described (0–2)
 Problem 2 described (0–2) [4]
 e.g. related to pieces not fully slotting together because slots are not long enough, bird would not stand up
- (b)** Explanation of how problem 1 could be overcome (0–3)
 Explanation of how problem 2 could be overcome (0–3) [6]
 e.g. making slots an appropriate length so that pieces will join together correctly, making feet more stable by increasing size or adding more material to increase weight at base
- (c)** Appropriate explanations 2 × 1 mark (2) [2]
 e.g. card box can be recycled, plastic inner packaging cannot currently be recycled
- (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 (0–2) [2]
 e.g. finger cut-out which enables bottle to be easily removed from the holder
- (b)** Problem 1 described (0–2)
 Problem 2 described (0–2) [4]
 e.g. related to there being no finger cut-outs, hard to get the holder off the former
- (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 finger cut-outs to the design, slope edges of former and round corners
- (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]**
- 6**
- (a)** Notes and sketch correctly explain how the knock down fitting could be used to join leg and rail together (0–2) [2]
- (b)** Problem 1 described (0–2)
 Problem 2 described (0–2) [4]
 e.g. related to two other tables not being able to fit under design B because there are too many legs and rails.
- (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 one leg and two rails to produce a workable design
- (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 (0–4)
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 (5–8)
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 (9–12)
 Clarity and quality of sketching and explanatory notes (0–4)
 Evaluation (reasons for selection) (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 (0–5)
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 (6–9)
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 (10–14)
- 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) [20]
- [Total: 80]**

Questions 8 and 9 as for Question 7