

## MARK SCHEME for the October/November 2013 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.

Cambridge is publishing the mark schemes for the October/November 2013 series for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level components and some Ordinary Level components.

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**Section A**

- 1 (a) Each suitable reason given 1 mark  
 e.g. easier to cut in a school situation [1]  
 safer to use [1] [2]
- (b) (i) Making of grooves described [0–3]  
 Details of tools, equipment and safety precautions  
 (if necessary) [0–3] [6]
- (ii) Making dowel joint described [0–3]  
 Details of tools, equipment and safety precautions  
 (if necessary) [0–3] [6]
- (iii) Making of part B described [0–3]  
 Details of tools, equipment and safety precautions  
 (if necessary) [0–3] [6]
- [Total: 20]
- 2 (a) Appropriate finish named [1]  
 e.g. paint, galvanising  
 Suitable reason given [1] [2]  
 e.g. improves appearance, protection, prevents rusting
- (b) (i) Cutting out hole described [0–2]  
 Smoothing edges described [0–2]  
 Details of tools, equipment and safety precautions  
 (if necessary) [0–2] [6]
- (ii) Welding together parts A and B described [0–3]  
 Details of tools, equipment and safety precautions  
 (if necessary) [0–3] [6]
- (iii) Marking out described [0–2]  
 Drilling holes described [0–2]  
 Details of tools, equipment and safety precautions  
 (if necessary) [0–2] [6]
- [Total: 20]

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- 3 (a) Explanation of perforation  
e.g. series of small slits that make it easier to tear bottom of ticket off
- (b) (i) Correct 'tool' chosen [1]  
Font style chosen [1]  
Font size chosen [1]  
Colour chosen [1]  
Adding text in correct position [0–2] **[6]**
- (ii) Correct 'tools' chosen [0–2]  
Importing photograph and resizing [0–4] **[6]**
- (iii) Correct 'tools' chosen [0–2]  
Drawing and colouring logo [0–4] **[6]**
- [Total: 20]**

**Section B**

- 4 (a) Appropriate explanation [0–2] **[2]**  
e.g. a material that will break down (rot) over a period of time
- (b) Problem one identified and described [0–2]  
Problem two identified and described [0–2] **[4]**  
e.g. problems related to the development (net) being the wrong shape and the wrong size
- (c) Explanation of how problem one could be overcome [0–3]  
Explanation of how problem two could be overcome [0–3] **[6]**  
e.g. development (net) needs to be based on a truncated cone rather than a cylinder, development (net) needs to be shorter so it will fit on cup
- (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)** Explanation of what the symbol means  
 e.g. tidy man or do not litter symbol encourages people to dispose of unwanted packaging etc. carefully and thoughtfully
- (b)** Problem one identified and described [0–2]  
 Problem two identified and described [0–2] **[4]**  
 e.g. no top on bin therefore litter would blow away  
 a bin made from plastic would be lightweight and easily blown or knocked over
- (c)** Explanation of how problem one could be overcome [0–3]  
 Explanation of how problem two could be overcome [0–3] **[6]**  
 e.g. added a lid to bin, make bin from another material or fix it to the ground
- (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)** Explanation of anthropometric data [0–2] **[2]**  
 e.g. data on human sizes
- (b)** Problem one identified and described [0–3]  
 Problem two identified and described [0–2] **[4]**  
 e.g. child has nothing to put their feet on  
 handle would be difficult/uncomfortable for adult to use
- (c)** Explanation of how problem one could be overcome [0–3]  
 Explanation of how problem two could be overcome [0–3] **[6]**  
 e.g. add footrests or pedals to tractor  
 make handle more ergonomic
- (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 [1]
- 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]**

Questions 8 and 9 as for Question 7