

Oxford Cambridge and RSA Examinations

General Certificate of Secondary Education

DESIGN AND TECHNOLOGY (RESISTANT MATERIALS)

PAPER 2

HIGHER TIER

1956/2

MARK SCHEME

1056/2

Specimen Paper 2003

| Question | Answer | Total Marks Available |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| 1(a) (i) | reason for aluminium – excellent weight-strength, malleable, variety of finishes etc. reason for steel – relatively cheap material, weight an advantage, etc. | 1 |
| (ii) | pressing assures repetitive accuracy, minimises waste. | 2 |
| (iii) | environmental advantage – metals more easily recycled and more plentiful supply, whereas plastics are a non-renewable resource. <i>Reference to both features for maximum marks</i> | 2 |
| 1(b) | <i>1 mark for each</i> design for label designed /drawn on screen vinyl-cutting machine set up instructions downloaded from computer to machine <i>Accept a variety of other relevant/important practical processes involved.</i> | 3 |
| 1(c) | quality control testing to check – accuracy of dimension, surface finish, appearance, material consistency/quality function. | 2 |
| | | Total 10 |

| | | |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 2(a) | solid wood – beech | 1 |
| 2(b) | design suitable for children – brightly painted finish, appropriate size, movement of wheels, painted features, etc. | 2 |
| 2(c) | mass-production - simple to manufacture shapes, details of windows, ladder etc. applied, spray painted finish, etc. | 2 |
| 2(d) | reasons for plastics – inherent colour, smooth and rounded parts, intricate detail possible in production, extremely durable etc. | 2 |
| 2(e) | modifications could include - use detachable pieces for cab, body etc. separate ladder hinged and lifts, etc. <i>Accept sensible features. 0 – 3 dependant on quality of proposal/communication.</i> | 3 |
| | | Total 10 |

| Question | Answer | Total Marks Available |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| 3(a) | <p><i>1 mark for each</i> parts drawn to fit Fig. 4 parts drawn showing minimum waste parts drawn showing waste between cuts</p> | 3 |
| 3(b) | <p>pivot: <i>1 mark for each</i> use of dowel or metal rod details of sizes/depth of holes details of pivot attachment</p> <p>locking method: simple interference fit (<i>1 mark</i>) crude use of nuts (<i>2 marks</i>) use of screws, threaded bolts, machined etc. (<i>3 marks</i>)</p> <p>named materials: appropriate</p> | <p>3</p> <p>3</p> <p>1</p> |
| Total 10 | | |

| | | |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 4(a) | motion - oscillating | 1 |
| 4(b) | <p><i>1 mark for each</i> tree extended disc/wheel fitted to motor spindle off-centre pivot located on motor wheel/disc linkage from tree joins motor by means of a second linkage pivots labelled</p> | 5 |
| 4(c) | <p>two modifications involve the repositioning of the pivot points (<i>2 marks for each</i>): e.g. lengthen the extended linkage from the tree to increase the fulcrum distance. e.g. reduce the diameter of the disc/wheel attached to the motor.</p> | 4 |
| Total 10 | | |

| Question | Answer | Total Marks Available |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| 5(a) | arrangement to include <i>(2 marks for each)</i> : vertical front alignment spacers to ensure each cassette can be accessed details of sizes of materials <i>Accept a modification to width of unit for slots, basic shape of unit must be retained</i> | 6 |
| 5(b) | system, jig or former must ensure repetitive accuracy. e.g. use of spacers to repeat gap required for video. ensures repetitive accuracy, including location <i>(2 marks)</i> quick and simple to use <i>(1 mark)</i> added details <i>(1 mark)</i> | 4 |
| Total 10 | | |

Total mark available: 50