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**DESIGN AND TECHNOLOGY**

**0445/23**

Paper 2 Graphic Products

**October/November 2016**

MARK SCHEME

Maximum Mark: 50

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**Published**

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.

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**A1 (a) FRAGILE**

- Outer box completed in isometric and in good proportion [1]
- Word FRAGILE added (any size or style) [1]
- Word FRAGILE added in isometric and in good proportion [1]

**Arrow**

- Arrow added to correct surface [1]
- Isometric arrow added in the same style as shown on the front view (not a single line arrow) [1]
- Isometric arrow to overlay [1]

[6]

**(b) Front**

- Horizontal line added [1]
- Vertical line added [1]

**End**

- Outer box completed to overlay [1]
- Sloping line added (lower line matches front and higher point in approximate position) [1]

[4]

**A2 (a) Acceptable reasons include:**

- Resists moisture [1]
- Easy to apply [1]
- Does not require glue to fix to the box [1]
- Smooth flat surface for printing on [1]
- Available in a range of colours [1]

[2]

**(b) Some understanding that an inner liner is required or the top and bottom of the box need to be different sizes [1]**

- Sketched and notes/labels clearly communicate the design for a lift off lid [1] Liner has 2 sides correct length or 4 sides

[2]

**A3 (a) (i) Planometric drawing of 'X' pieces completed (any size and thickness) [1] - T shape [0]**

- Width and height of the surfaces match the given surface [1]
- Thickness shown [1]
- Corrugations added to the top edges [1]

[4]

**(ii) Two slots drawn on the centre line [1]**

- \*Both slots of a consistent width [1]
- \*Both slots half the height of the material [1]

\*Slots can be on the top or bottom surface but not sides

[3]

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- (b) Three bars of a consistent width drawn [1]  
Accurate scale plotted on the vertical axis [1]  
Labels on the horizontal axis [1]  
Data correctly plotted to scale shown [1]

[4]

**[Total: 25]**

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### Section B

#### B4 (a) Base

- 1 Top line of right side of base extended ( to VP1) [1]
- 2 Top line of left side of base drawn from VP1 [1]
- 3 Vertical corner of base completed [1]
- 4 Right side top edge of base added [1]
- 5 Left side back edge of base added [1]

#### Upright

- 6 Bottom edge drawn from VP1 [1]
- 7 Top edge of upright drawn from VP1 [1]
- 8 Left upright added to candidate solution [1]

#### Shelf

- 9 Top front edge completed to VP1 [1]  
Bottom front edge completed (to VP1) [1]
- 10 Underside back edge drawn [1]  
Underside back edge drawn to VP1[1]
- 11 Vertical end to shelf [1]
- 12 Underside drawn to VP2 [1]

Drawing correctly lined I [1]

[15]

#### (b) (i) Three layers shown [1]

- Top and bottom layers labelled as card or paper [1]  
Middle layer labelled as foam (or polystyrene) [1]

[3]

#### (ii) Acceptable answers include:

- Easy to cut [1]  
Lightweight [1]  
Smooth flat surface for printing on [1]  
Rigid [1]  
Available in a range of colours [1]  
Can be written on [1]

[2]

#### (c) (i) Stanley knife or craft knife or scalpel [1] – do not accept ‘Knife’

- Safety / steel rule or metal straight edge [1]

[2]

#### (ii) Notes and sketch show:

- Understanding that a stencil is a sheet with letters cut out [1]  
Stencil positioned against the foam board [1]  
Pencil, pen or stippling brush, air brush, spray can used to apply the letters [1]

[3]

**[Total: 25]**

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**B5 (a) Backing Card**

- Corner 1 of backing card (original) drawn to VP1 [1]
- Corner 2 of backing card (original) drawn to VP [1]
- Any top and bottom line of backing card drawn [1]
- Top and bottom line of backing card drawn parallel [1]
- Right hand upright of backing card shown vertical [1]

**Blister**

- Any four lines of blister rectangle (back) completed [1]
- Four lines of blister rectangle p// in pair 1 to rect back [1]
- p// in pair 2 to rect back [1]
- Any top rectangle drawn [1]
- Top rectangle smaller than backing rectangle [1]
- Four sloping lines 4×1 [4]

[14]

**(b) Key stages in lithography include:**

- Original image [1]
- Digital image [1]
- Colour separation [1]
- Plate preparation [1]
- CYMK plates [1 × 4]
- Registration [1]
- Separate printing of each colour [1]

Any 5 from 7 for [5] marks

- 
- Sequence [1]
  - Quality of communication [1]

Tick (✓) to show each stage

[7]

**(c) The flange is required so that the blister and card backing can be joined together [1] with glue, staple or double-sided tape [1]**

[2]

**(d) Modification allows the blister package to hang on a rack**

- Sketch [1]
- Notes [1]

[2]

**[Total: 25]**