Cambridge Assessment International Education
Cambridge International General Certificate of Secondary Education

DESIGN AND TECHNOLOGY **0445/23**

Paper 2 Graphic Products **October/November 2018**

MARK SCHEME

Maximum Mark: 50

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.

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

Cambridge International will not enter into discussions about these mark schemes.

Cambridge International is publishing the mark schemes for the October/November 2018 series for most Cambridge IGCSE™, Cambridge International A and AS Level components and some Cambridge O Level components.

Generic Marking Principles

These general marking principles must be applied by all examiners when marking candidate answers. They should be applied alongside the specific content of the mark scheme or generic level descriptors for a question. Each question paper and mark scheme will also comply with these marking principles.

GENERIC MARKING PRINCIPLE 1:

Marks must be awarded in line with:

- the specific content of the mark scheme or the generic level descriptors for the question
- the specific skills defined in the mark scheme or in the generic level descriptors for the question
- the standard of response required by a candidate as exemplified by the standardisation scripts.

GENERIC MARKING PRINCIPLE 2:

Marks awarded are always **whole marks** (not half marks, or other fractions).

GENERIC MARKING PRINCIPLE 3:

Marks must be awarded **positively**:

- marks are awarded for correct/valid answers, as defined in the mark scheme. However, credit is given for valid answers which go beyond the scope of the syllabus and mark scheme, referring to your Team Leader as appropriate
- marks are awarded when candidates clearly demonstrate what they know and can do
- marks are not deducted for errors
- marks are not deducted for omissions
- answers should only be judged on the quality of spelling, punctuation and grammar when these features are specifically assessed by the question as indicated by the mark scheme. The meaning, however, should be unambiguous.

GENERIC MARKING PRINCIPLE 4:

Rules must be applied consistently e.g. in situations where candidates have not followed instructions or in the application of generic level descriptors.

GENERIC MARKING PRINCIPLE 5:

Marks should be awarded using the full range of marks defined in the mark scheme for the question (however; the use of the full mark range may be limited according to the quality of the candidate responses seen).

GENERIC MARKING PRINCIPLE 6:

Marks awarded are based solely on the requirements as defined in the mark scheme. Marks should not be awarded with grade thresholds or grade descriptors in mind.

Section A

Question	Answer	Marks
A1(a)	Rectangle 160 × 50 (1) Semi-circle R80 (1)	**2**
A1(b)	Letter 'O' Circles – Ø20 and Ø40 touching (1) Letter 'C' Semi-circles Ø20 and Ø40 (1) Horizontal and end lines top and bottom added with overall width 35 mm (1) Letter 'L' Quarter-circle Ø20 and Ø40 touching (1) Horizontal and end lines top and bottom added to correct height and width (1)	**5**
A1(c)	Three axes for points of outer triangles from centre of semi-circle at 30° (1) R40 Arcs evident to mark triangle side lengths (1) Equilateral triangle irrespective of position, any correct size (1)	**3**

Question	Answer	Marks
A2(a)	Height 170 (1) Width 200 (1) Central position – (*20 mm either side, 20 mm top & bottom*) (1)	**3**
A2(b)(i)	Digital printing	**1**
A2(b)(ii)	Sharper image, less/no seep, more resistant to water, no additional adhesive need to apply the label	**1**

Question	Answer	Marks
A3	Plan Rectangular base 110 × 50 (1) Backboard 110 × 5 (1) Semi-circle R25 (1) correct centre point (15 from back) (1) Two 15 mm vertical lines to join semi-circle to backboard (1) Rectangular indent 25 × 20 (or 30 × 20 if projected) (1) Two vertical lines for cut-out on backboard (1) Side View Rectangular base 50 × 15 (1) Rectangle 40 × 15 (1) Hidden detail lines 20 × 5 dotted (1)	**10**

Section B

Question	Answer	Marks
B4(a)	Left side – rectangle 100 × 35 (1) Right side – rectangle 100 × 35 (1) Back – rectangle 100 × 50 (1) Base – 35 × 50 (1) Lid (must be on back)– 35 × 50 (1) Tab on front of lid – 50 × 10 (1) Sloping sides to tab (1) Both side flaps to lid with sloping sides to front – 35 × 25 (1) Cut-out on front face – horizontal and vertical lines 30 × 80 (1) Three corners R10 (1) All fold lines shown as dot/dash (1)	**11**
B4(b)	*Four* glue tabs added to join: Base (1) Base (1) Base (1) One long side to back (1) Glue tabs drawn to suitable size (10–20mm width) with sloped edges (1)	**5**
B4(c)	PVA, Contact adhesive, hot melt glue, double sided tape.	**1**
B4(d)	Advantages: Many layers can be cut at once / Large quantities can be cut in quick time Cuts and scores/creases at same time / All cuts are the same (1) Disadvantages: Expensive initial set up costs / Only economic if cutting in large quantities Difficult to change/alter net design (1)	**2**
B4(e)	Acetate, HIPS (NOT Acrylic)	**1**
B4(f)	Length: any size between 84–100 (1) Width: any size between 34–50 (1)	**2**
B4(g)	A method of locking shown (1) Method clearly shows a system that will stop lid from coming open (1) Good quality of communication (drawing) (1)	**3**

Question	Answer	Marks
B5(a)	1 Top rectangle 30 × 30 (1) 2 Horizontal edge (bottom of sloping side edge (1) 3 Horizontal edge (bottom of sloping front edge (1) 4 Left side sloping top edge (1) to Cand solution 5 Right side sloping top edge (1) to Cand solution 6 Middle sloping top edge (1) to Cand solution 7 Three vertical edges 60 long (1) 8 Horizontal edge of bottom taper on side (1) 9 Tapered edges at bottom on front face (1) to Cand Solution 10 Tapered edge at bottom on side (1) to Cand solution	**10**
B5(b)	Major axis 60 mm (1) Minor axis 35/40 mm (1) Some construction (1) or clear construction (1) Six or less points plotted (1) or seven or more points plotted (1) Ellipse profile correct (1)	**7**
B5(c)	Some shading added to the side within the lines (1) Some variation in darkness of shading from left to right (1) Dark at both edges gradually fading to light in the middle (1) Some shading to top (1)	**4**
B5(d)	Size of the user's hands (1) Grip strength/Turning force/strength able to exert on different shaped lids (1)	**2**
B5(e)	Expiry date (1) Not tested on animals (1)	**2**