Cambridge Assessment International Education

Cambridge IGCSE™

DESIGN AND TECHNOLOGY **0445/53**

Paper 5 Graphic Products **October/November 2020**

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 2020 series for most Cambridge IGCSE™, Cambridge International A and AS Level and Cambridge Pre-U components, and some Cambridge O Level components.

[Turn over

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.

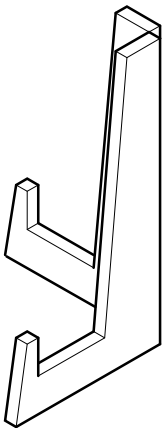
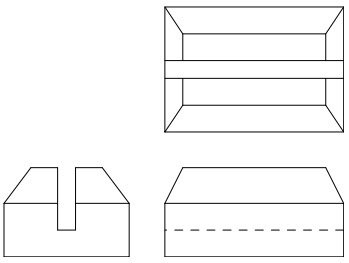
Section A

Question	Answer	Marks
A1(a)	Rectangle 65 mm high × 50 mm wide (1) Rectangle spaced 10 mm from bottom edge, 15 mm from left edge (1)	2
A1(b)	Major axis 80 mm (1) Minor axis 50 mm (1) Some construction (1) Axis + four or less points plotted (1) six or more points plotted (1) Ellipse profile correct to overlay (1)	6
A1(c)	Width 50mm (1) Top and bottom lines drawn 25mm above given axis (1) Arcs scribed to locate corners (1) Diagonal lines drawn in correct positions (1)	4
A1(d)	Two semi circles R15 (1) On horizontal axis (1) Arc R56 Left (1) Arc R56 Right (1)	4

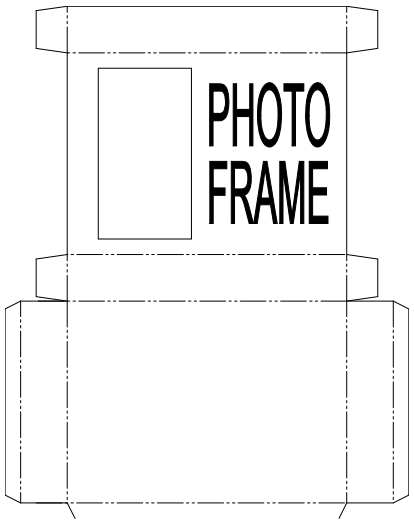
Question	Answer	Marks
A2	Rule or cutting mat (1)	1

Question	Answer	Marks
A3(a)	Glass: Drawn in isometric between frame and mount and in alignment (1) 75 mm high (1) 60 mm wide (1) thickness visible through glass (1)	4
A3(b)	Hole drawn 10 mm from edge (1) Drawn in centre of frame (1) Thickness evident (1) 2/3 mm inner edges shown (1)	4

Section B

Question	Answer	Marks
B4(a)	 Thick line added to: *Front piece:* Front right, bottom, left bottom, left sloping side and top edges of front piece [BLUE] (1) Top right edge and top back edge [RED] (1) Back of long sloping edge [GREEN] (1) Right hand edge of small upstand on front [PURPLE] (1) *Back piece:* Outer edge of back piece [GREY] (1) Extended line on long sloping edge [ORANGE] (1) Zero marks if all lines added.	**6**
B4(b)(i)	 *Side view:* Baseline 100 mm long (1) Two vertical ends 30 mm long (1) Horizontal bottom edge of slope to cand soln (1) Top horizontal edge 80 mm long and 10 mm from each end (1) Hidden detail to show inside of channel (1) Two sloping edges added (1)	**6**

Question	Answer	Marks
B4(b)(ii)	*Plan view:* Outer edge – rectangle projected (1) 70 wide (1) Two horizontal channel lines 10 mm apart (1) Running full length (1) Top surface added 15 mm either side of channel (1) Sloped corner edges from corners of rectangle (1) to corresponding point on side view (1)	**7**
B4(c)	Different method other than one given shown using card (1) Different method that will support photo holder standing up (1) Different method shown will fold flat (1)	**3**
B4(d)(i)	Lithography / Offset lithography, flexography, gravure	**1**
B4(d)(ii)	High set up *costs* but each print is extremely cheap (1) therefore set up costs have to be spread over large numbers of prints (1) / the cost of first print is very high (1) but *each subsequent print gets cheaper* and cheaper (1) / the more you print the cheaper each one becomes (1)	**2**

Question	Answer	Marks
B5(a)(i)	 Bottom – Rectangle 90 × 65 (1) L/H on bottom 15 (1) R/H end added 15 (1) Tab added to R/H end (1) Front added 90 × 15 (1) L/H tab added (1) Tapered (1) R/H tab added (1) Tapered (1) Top 65 wide (1) Back 15 (1) L/H tab (1) R/H tab (1) Correct fold lines (1)	**14**

Question	Answer	Marks
B5(a)(ii)	Rectangle 55 × 30 (1) In correct position (1)	**2**
B5(b)(i)	Any **one** from: Image could be scanned / by using a scanner By photographing with a **digital** camera Accept 'taking a photograph' answer must relate to a camera or phone.	**1**
B5(b)(ii)	Any **two** from: Rotating – turning the image around Stretching/shrinking – altering the size and aspect ratio of the image Re-colouring – adding colour / changing colour of the image Deleting parts of the image / adding extra lines to the image Adding borders, shadows or outlines to the image Or any other valid answer	**2**
B5(b)(iii)	Vinyl cutter, Laser cutter, Roland, CAMM2 Stikka (1)	**1**
B5(c)(i)	Turn on heater / place heater over plastic sheet (1) Diamond shape drawn around 'Is plastic hot enough? (1) 'NO' added to feedback arrow (1) Raise bed (1)	**4**
B5(c)(ii)	Draft angle added to vertical sides / Two top corners given larger radius' accept slope / taper, etc. (1)	**1**