

Cambridge IGCSE™

DESIGN AND TECHNOLOGY**0445/52**

Paper 5 Graphic Products

May/June 2024

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 May/June 2024 series for most Cambridge IGCSE, Cambridge International A and AS Level and Cambridge Pre-U components, and some Cambridge O Level components.

This document consists of **9** printed pages.

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 descriptions 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).

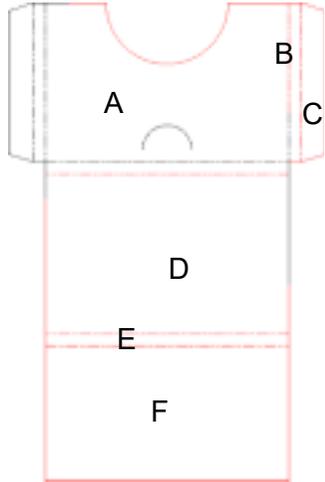
GENERIC MARKING PRINCIPLE 6:

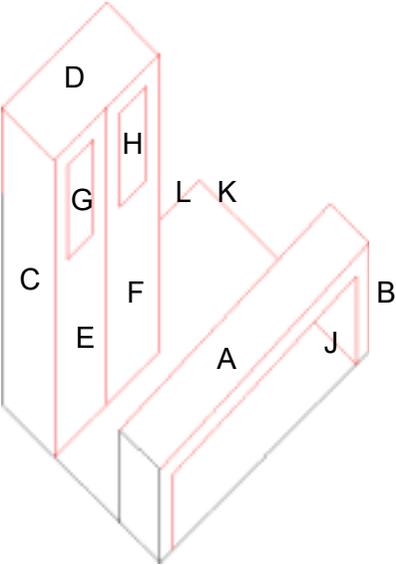
Marks awarded are based solely on the requirements as defined in the mark scheme. Marks should not be awarded with grade thresholds or grade descriptors in mind.

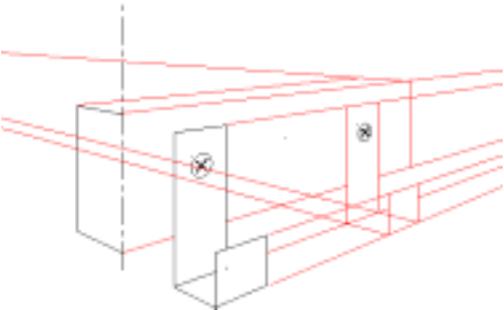
Question	Answer	Marks	Guidance
A1(a)(i)	Outline 180 wide [1] 10 mm × 10 mm angles to both corners correct to overlay [1]	2	
A1(a)(ii)	Isosceles triangle 60 × 20 [1] In correct position [1]	2	
A1(a)(iii)	Symmetrical heart shape any size [1] Heart shape correct to overlay [1]	2	
A1(a)(iv)	All three rectangles mirrored correctly [1] Two sides 36 mm apart (correct to overlay) [1]	2	
A1(a)(v)	Title outline completed with 10 mm radius on right hand end [1] Title outline 160 mm wide [1]	2	
A1(a)(vi)	Any octagon [1] Any regular octagon in correct orientation [1] Octagon correct to overlay [1]	3	

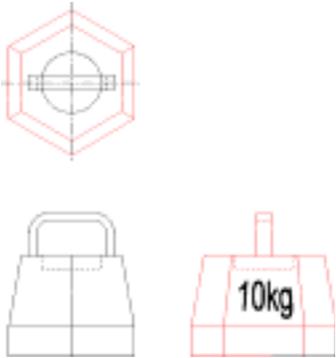
Question	Answer	Marks	Guidance
A2(a)	Photograph taken on phone / digital camera / web cam [1] then saved / downloaded onto computer [1] Or Image taken on camera [1] and scanned / uploaded into computer [1] Then Image inserted onto membership card template [1] / printed onto card [1]	3	1 mark for method of obtaining image 1 mark for sending / uploading to computer 1 mark for inserting or printing onto card
A2(b)(i)	Any one valid benefit e.g. Waterproof / more durable than card [1] Lightweight so easy to carry around [1]	1	Do not accept generic one word answers without qualification. i.e. Strong, durable, cheap, lightweight

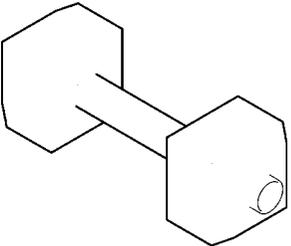
Question	Answer	Marks	Guidance
A2(b)(ii)	Polystyrene sheet (HIPS), Polyvinyl chloride acetate (PVC), Polyethylene terephthalate glycol, (PET or PETG) [1]	1	Accept any other valid response. Do not accept: Acrylic (too brittle), or acetate on its own (too thin and flimsy) or vinyl

Question	Answer	Marks	Guidance
A3(a)	 <p>Front face 'A' and half circle correct to overlay [1] Side 'B' correct to overlay [1] Glue flap 'C' correct to overlay [1] Side 'D' correct to overlay [1] Side 'E' correct to overlay [1] Side 'F' correct to overlay [1] Fold lines dotted /dashed correctly (Long dash, 2 short dashes) [1]</p>	7	

Question	Answer	Marks	Guidance
B4(a)	 <p>Bench: Top face 'A' 80 × 15 in correct position [1]: Right hand leg 'B' added [1] 5mm thickness to front face of both uprights and top [1] Lockers: Side 'C' correct to overlay [1] Top face 'D' 40 × 20 correct to overlay / candidate solution [1] Left door 'E' 80 × 20 correct to overlay or candidate solution [1] Right door 'F' 80 × 20 correct to overlay or candidate solution [1] Panel 'G' / 'H' drawn to correct size (25 × 10) [1] Panels 'G' AND 'H' in correct position to candidate solution [1] Floor: Inner edge 'J' projected from inner of leg correctly [1] Back edge 'K' projected from outer edge of leg correctly [1] Back edge 'L' projected from given corner correctly [1]</p>	12	

Question	Answer	Marks	Guidance
B4(b)(i)	Brown/orange/yellow wood colour added [1] Wood grain added to all three faces [1] High quality rendering that looks like hardwood (end grain shown) [1]	3	
B4(b)(ii)	Grey/silver shading added [1] Light/dark/medium shading on all four faces [1] High quality rendering that looks like aluminium [1]	3	
B4(c)	 <p>Backboard: Both top edges projected to VP 2 [1] Bottom front edge projected to VP 2 [1] Back vertical edge added in appropriate position [1] Top back edge projected to VP 1 [1]</p> <p>Hook: Bottom and front face of hook projected from existing hook to VP 2 [1] Base of hook projected from VP 1 [1] Front face of hook added to candidate solution [1]</p>	7	

Question	Answer	Marks	Guidance
B5(a)	 <p>Plan: Outer hexagon: Left and right hand vertical sides projected from the front view [1] Top and bottom corners projected correctly [1] Outer hexagon correct to overlay [1]</p> <p>Inner hexagon: Left and right hand vertical sides projected from the front view [1] Top and bottom corners projected correctly [1] Inner hexagon correct to overlay [1] Lines joining inner and outer hexagons at corners [1]</p> <p>Side view: Handle correct to overlay [1] Top and middle edges projected from front view [1] Outer sloping edges and vertical sides added correct to overlay [1] Inner sloping edges and vertical edges added correct to overlay / candidate solution [1] Circular recess added correct to overlay [1] Hidden detail shown as dotted lines [1]</p>	13	

Question	Answer	Marks	Guidance
B5(b)(i)	 <p>Outer edge ONLY of front and back blocks (no inner lines) [1] Two lines on middle handle pole (not curved end line) [1] Two lines on end pole protrusion [1] Inner and outer sections of circle correct [1]</p>	4	
B5(b)(ii)	<p>Hacksaw blade, hot wire cutter, coping saw, bandsaw, panel saw [1]</p> <p>PVA, or any other non-solvent based adhesives [1]</p>	2	<p>Accept any other valid response.</p> <p>Do not accept: Craft knives</p> <p>Do not accept: Double sided tape, hot glue gun</p>
B5(c)	 <p>Tube (including inner thickness) correct to overlay [1] Left hand weight correct to overlay [1] Left hand weight 'behind' tube [1] Right hand weight mirror image of left hand [1] 70mm between end weights / 70 mm centre section of tube [1] Hatching added correct to candidate solution [1]</p>	6	