Cambridge IGCSE™

DESIGN & TECHNOLOGY	**0445/52**
Paper 5 Graphic Products	**May/June 2021**
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 2021 series for most Cambridge IGCSE™, Cambridge International A and AS Level components and some Cambridge O Level components.

This document consists of **6** 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 descriptors for a question. Each question paper and mark scheme will also comply with these marking principles.

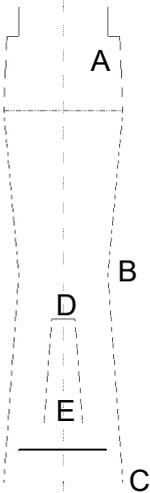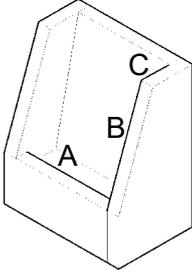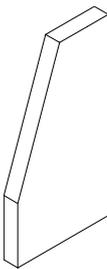| GENERIC MARKING PRINCIPLE 1: |
| --- |
| Marks must be awarded in line with:

 • 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

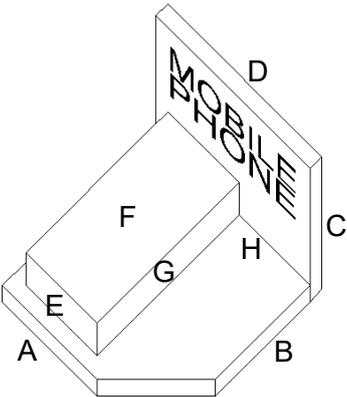| Question	Answer	Marks
A1(a)	Rectangle 105 × 70 (1) In correct position (1)	**2**
A1(b)	Rectangle 30 × 10 (1) In correct position (1)	**2**
A1(c)	Rectangle 140 × 10 (1) In correct position (1)	**2**

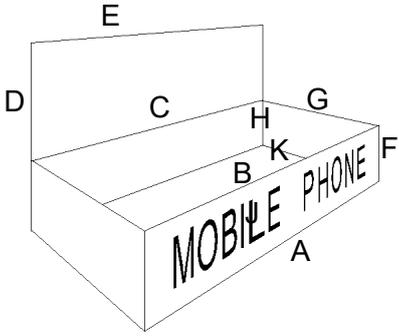| Question	Answer	Marks
A2(a)	Isosceles triangle drawn (1) To correct width and depth and in correct position (1)	**2**
A2(b)	Arc radius 45 mm (1) Arc radius 40 mm (1) Arc radius 30 mm (1) Arc radius 25 mm (1) Four ends to arcs at 45° angle (1)	**5**
A2(c)	Circle on centre point with 20 mm radius (1) Any hexagon drawn (1) Any regular hexagon (1) Hexagon drawn to overlay (correct size, position and orientation) (1)	**4**
A2(d)	Major axis 90 mm (1) Minor axis 60 mm (1) Some construction (1) Six or less points plotted (1) or seven or more points plotted (2) Ellipse profile correct to overlay (1)	**6**

Question	Answer	Marks
A3	No language barrier (1) so can be understood by people from different countries (1) Easier to understand (1) because it is common / recognisable (1) Smaller than lots of written instructions (1) so takes up less space (1) Quicker than reading the text (1) Saves manufacturer having to make multiple menus (1) can be sold all over the world (1) **Any valid reason (1) with explanation (1)**	**2**

Section B

Question	Answer	Marks
B4(a)	 Top section 'A' Mirrored from existing half (1) Middle section: 55 mm long (1) Two sloping lines from fold narrowing to 30 mm wide at 'B' (1) Horizontal fold line 'B' 30 mm long and centred(1) Fold line 'B' drawn dotted/dashed (1) Bottom section: Line 'C' 70 mm below line 'B' Bottom line 'C' 40 mm long and centred (1) Two sloping lines from fold 'B' to ends of bottom line 'C' (1) Top of cut out – line 'D' 8 mm long and centred (1) Line 'D' 15 mm below fold line 'B' (1) Two sloping lines from 'D' to given line 'E' (1)	11
B4(b)	Modification shown to the tongue (1) Modification will stop the tongue slipping out of slot (1) High quality sketches and notes showing clear solution (1)	3
B4(c)(i)	 Thick line added to outline (1) Thick line to inner edge 'A' (1) Thick line to sloping inner edge 'B' (1) Thick line to top inner edge 'C' (1)	4
B4(c)(ii)	Any appropriate shading added (1) Speckled effect added (1)	2

Question	Answer	Marks
B4(d)(i)	 Vertical front face added to correct size (1) Sloping front face added to correct size (1) Top face added to correct size (1) Back edge and bottom edge added to correct size (1)	**4**
B4(d)(ii)	PVA, double sided tape	**1**

Question	Answer	Marks
B5(a)	 Front edge of base 'A' 40 mm × 5 mm (1) Right hand side of base 'B' 40 mm × 5 mm (1) Right hand edge of back board 'C' 40 mm × 5 mm (1) Top face of backboard 'D' 65 mm × 5 mm (1) Front face of block 'E' 30 mm × 10 mm (1) Top face of block 'F' 60 mm × 30 mm (1) Side face of block 'G 60 mm × 10 mm or correct to top face (1) Block positioned 5 mm from end of base (1) Back edge of base 'H' where it meets backboard (1) Far edge of base (disappearing behind block / to candidate solution (1)	**10**
B5(b)(i)	Any suitable named knife e.g. Scalpel / craft knife / Stanley knife (1) Any suitable straight edge e.g. Safety rule / metal ruler/ cutting ruler (1) Cutting mat (1) Do not allow 'knife' or 'ruler' – must name a specific type. Do not allow 'laser cutter' or 'box cutter'.	**3**

Question	Answer	Marks
B5(b)(ii)	Send lettering to Vinyl cutter (1) cut out self adhesive vinyl & apply (1) Create stencil (cut out on laser cutter) use stencil to spray / paint letters onto foamboard (1) Print onto paper/card and cut out (1) use as a stencil (1) Allow any suitable method that uses computer	**2**
B5(c)	 Bottom line on long edge 'A' from corner to RH VP (1) Top line on long edge 'B' from corner to RH VP (1) Back edge of top 'C' to RHVP (1) LH edge of lid 'D' shorter than width of box (1) Line from top edge of lid 'E' to RH VP (1) Back vertical edge of base 'F' approx. 5–10 mm past end of lettering (1) Line from back vertical edge 'G' to LH VP (1) Vertical inner edge of box / lid 'H' at intersection of lines (1) Inside base line along long edge 'J' to RH VP (1) Inside base line along short edge 'K' to LH VP (1)	**10**