Cambridge Assessment International Education

Cambridge IGCSE™

DESIGN & TECHNOLOGY **0445/53**

Paper 5 Graphic Products **October/November 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 October/November 2021 series for most Cambridge IGCSE™, Cambridge International A and AS Level 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.

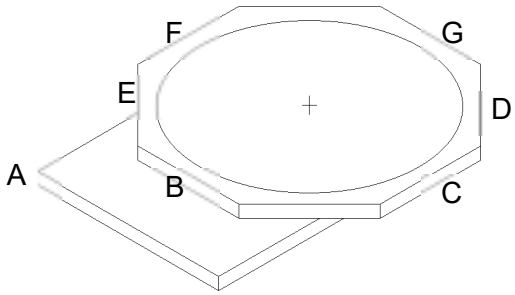
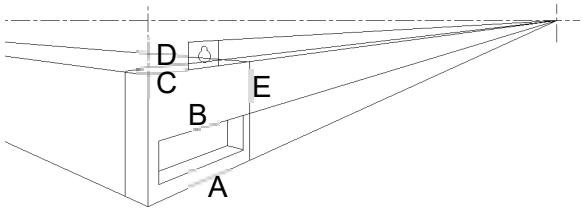
Section A

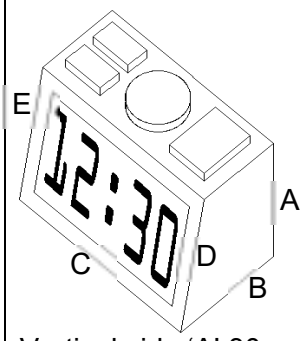
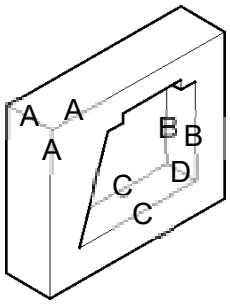
Question	Answer	Marks
A1(a)(i)	 Any octagon drawn (1) Any regular octagon (1) Regular octagon drawn to correct size (1) and in centre position (1) Bottom section 135 mm wide (1) Bottom section 45 mm below bottom edge of octagon (1) Clock face R80 (1) in centre position (1)	**8**
A1(a)(ii)	Any rectangle drawn (1) Evenly spaced border left/right and top/bottom (1)	**2**
A1(a)(iii)	Three lines added at 60° angles (1) Four lines added at 30° (1) Marker length and position correct (using existing 1 o'clock marker) (1) Number 12 added in proportion (1)	**4**
A1(b)	Minute hand drawn 60 mm long (1) Ends touch existing centre circle (1) In vertical (12 o'clock) position (1)	**3**

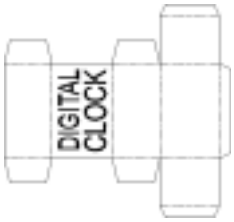
Question	Answer	Marks
A2(a)	Use internet search engine to search for a suitable image / design image / take photograph (1) Download image / copy & paste image / save image / purchase image (1) Print out image / (1)	**3**
A2(b)	3 : 1	**1**

Question	Answer	Marks
A3	Place transfer face down (1) YES and NO correctly added to decision box (1) Feedback line drawn from NO back to previous box or Start (1) Rub back of transfer with pen/pencil/coin etc. (1)	**4**

Section B

Question	Answer	Marks
B4(a)(i)	 Back board: Front face projected to correct width 90 mm (1) Vertical edge 'A' added correctly (1) Right hand side edges projected to edge of main body (1) Left side edge drawn correctly (1)	**4**
B4(a)(ii)	Main body: Side 'B' completed correctly (1) Side 'C' completed correctly or to candidate solution (1) Edge 'D' added vertical and correct to candidate solution (1) Edge 'E' added vertical and correct to candidate solution (1) Edge 'F' correctly projected from 'C' (1) Edge 'G' correctly projected from 'B' (1) Top edge projected from given face (1)	**7**
B4(b)	Major axis 130mmm (1) Minor axis 76 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**
B4(c)	 Baseline 'A' to VP (1) Top edge of battery housing 'B' to VP (1) Top front edge of mechanism 'C' to VP (1) Top back edge of mechanism 'D' to VP (1) Vertical far edge 'E' drawn with same or smaller gap than front (1) Top of line 'E' to VP (1) Vertical line inside battery housing (1) Top edge and vertical back edge of hanging tab (1)	**8**

Question	Answer	Marks
B5(a)	 Vertical side ‘A’ 30 mm long (1) Bottom side edge ‘B’ parallel with top edge projecting 10 mm further forward (1) Bottom front edge ‘C’ 70 mm long (1) Sloping front corner edge ‘D’ added to candidate solution (1) Sloping front corner edge ‘E’ added to candidate solution (1) Border around number added (1) Border added correctly – spaced 5 mm (1) Top rectangular button 20 mm × 15 mm added in correct position (1) Button 2 mm deep (same as existing buttons) (1)	**9**
B5(b)(i)	 Outline thick **and** ‘A’ lines thin (1) Sloping inner line thick **and** ‘B’ lines thin (1) Small vertical and horizontal centre section of top inner edge (1) Both short horizontal lines on top inner edge thick **and** ‘C’ lines thin (1) Inner detail line thick **and** inner line ‘D’ thin (1)	**5**
B5(b)(ii)	Injection moulding (1) Accept ‘moulding’ on its own.	**1**
B5(b)(iii)	Lightweight, absorbs impact, easy to cut shape, soft, rigid (1) Or any other valid response (Do not allow: strong, durable)	**1**

Question	Answer	Marks
B5(c)	 Top and bottom faces 40 mm × 25 mm (1) Both sides 40 mm × 20 mm (1) End 25Mmm × 20 mm (1) Three large glue flaps added same as existing (1) Two thinner glue flaps added in correct positions (1) Correct use of fold lines – dotted/dashed lines to candidate solution (1)	**6**
B5(d)	Method of joining edges together shown that does not use adhesive (1) Method allows edges to be temporarily held in place (flaps / tabs) (1) Method holds securely but can be undone (1)	**3**