



Cambridge IGCSE™

DESIGN AND TECHNOLOGY

0445/52

Paper 5 Graphic Products

May/June 2020

MARK SCHEME

Maximum Mark: 50

Published

Students did not sit exam papers in the June 2020 series due to the Covid-19 global pandemic.

This mark scheme is published to support teachers and students and should be read together with the question paper. It shows the requirements of the exam. The answer column of the mark scheme shows the proposed basis on which Examiners would award marks for this exam. Where appropriate, this column also provides the most likely acceptable alternative responses expected from students. Examiners usually review the mark scheme after they have seen student responses and update the mark scheme if appropriate. In the June series, Examiners were unable to consider the acceptability of alternative responses, as there were no student responses to consider.

Mark schemes should usually be read together with the Principal Examiner Report for Teachers. However, because students did not sit exam papers, there is no Principal Examiner Report for Teachers for the June 2020 series.

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

Cambridge International is publishing the mark schemes for the June 2020 series for most Cambridge IGCSE™ and Cambridge International A & 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.

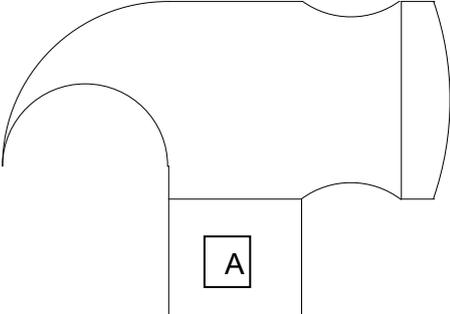
GENERIC MARKING PRINCIPLE 5:

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).

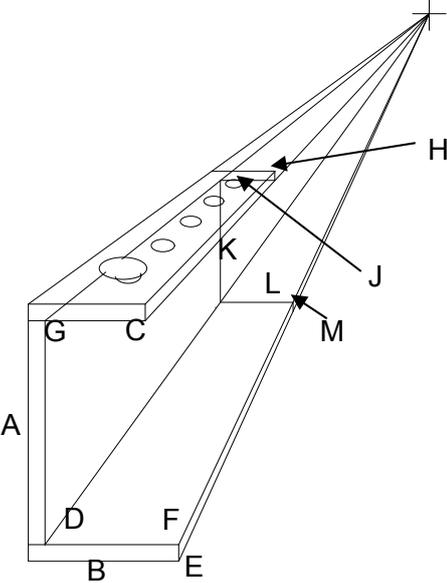
GENERIC MARKING PRINCIPLE 6:

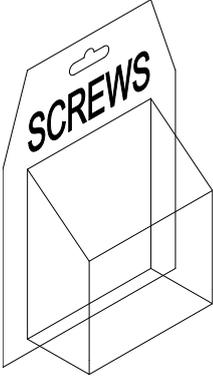
Marks awarded are based solely on the requirements as defined in the mark scheme. Marks should not be awarded with grade thresholds or grade descriptors in mind.

Section A

Question	Answer	Marks
A1(a)	Rectangle 180 wide (1) × 40 high (1)	2
A1(b)	 <p data-bbox="316 768 1077 996">Left hand vertical side of handle 50 mm long (1) Thickness of handle 40 mm and top edge (1) Top arc of claw from end of given line 90° R50 (1) Bottom arc of claw 180° R25 (1) Two arcs R25 to form the neck from cheek/shaft to bell (1) Two 10 mm lines forming side of bell (1) Face of hammer - Arc R100 (1)</p>	7
A1(c)	Two edges of shaft (1) Two arcs R45 to form head of spanner (1) Two vertical lines down from where arc bisects 100 mm height (1) 30 mm length marked (1) 30° lines to construct bottom 2 internal sides of hexagon drawn (1)	5
A2	Rectangular hole in front piece 50 × 20 (1) In correct position (1)	2
	Rotating wheel sketched with correct centre (1) Four correct points on vertical and horizontal axes (1) Ellipse shape sketched (1) Ellipse sketched accurately in correct position and to correct size (1)	4
	Back piece 100 × 60 (1) In correct position (1)	2
A3	Fastener of some kind drawn in correct position (1) Split pin drawn (1) Split pin drawn in correct position with ends splayed (1)	3

Section B

Question	Answer	Marks
<p>B4(a)</p>	 <p>End view: Vertical side 'A' 75 mm long (1) Base 'B' 45 mm long (1) 5mm thickness added to top side and base (1) Thickness of hole shown (1)</p> <p>Line from corner 'C' to VP (1) Line from corner 'D' to VP (1) Line from corner 'E' to VP (1) Line from corner 'F' to VP (1) Line from corner 'G' to VP (1)</p> <p>Back vertical edge 'H' from given corner of top surface (1) Back vertical edge 'K' drawn at intersection of line 'G' and 'J' (1) Back horizontal edge 'L' (1) Back vertical edge 'M' (1)</p>	<p>13</p>
<p>B4(b)</p>	<p>Half hexagon added correctly (1)</p>	<p>1</p>
	<p>Sides of socket drawn 100 mm (1)</p>	<p>1</p>
	<p>Major axis 80 mm (1) Minor axis 50 mm (1) Some construction (1) Six or more points plotted (1) Ellipse profile correct to overlay (1)</p>	<p>5</p>

Question	Answer	Marks
B4(c)	Vertical or Horizontal bar chart drawn with appropriate scales labelled on both axis' (1) Bar/column for spanners drawn to correct value (1) Bar column for screwdrivers drawn to correct value (1) Bar/column for hammers drawn to correct value (1) Bar column for pliers drawn to correct value (1)	5
B5(a)	 <p>Bottom edge of backboard 70 mm long (1) Two vertical sides of backboard 70 mm long (1) Top edge of backboard 50 mm (1) Two angled lines to form remainder of backboard (1)</p> <p>Outline of blister on backboard: Width 50 mm (1) Height 60 mm (1) In correct horizontal position (central) (1) In correct vertical position – 5 mm from bottom of backboard (1)</p> <p>Blister: 25 mm deep (1) Top slope 20 mm below top edge of blister outline on backboard (1) Middle vertical face 35 mm long (1) Bottom of blister outline on backboard (1)</p>	12
B5(b)(i)	Draft angle to vertical sides of the mould (1) Notes and sketches used to clearly show the size and position (1) Rounded/radiused corners (1) Radius added to top 4 corners only (1)	4
B5(b)(ii)	Vent hole(s) of some kind drawn all way through mould (1) Notes and sketches used to clearly show size and position (1)	2
B5(c)	Vacuum forming: Answers relating to the heater element of the vacuum former – Ensure plastic is cool before removing, keep hands / flammable objects away from heater. (1) Cutting out blister: use a safety rule, cutting mat (1) Gluing the blister to the cardboard: answers relating to solvent safety – work in well ventilated area (1)	3

Question	Answer	Marks
B5(d)(i)	Die cutter	1
B5(d)(ii)	Offset lithography, flexography, gravure	1
B5(e)	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)	2