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**DESIGN AND TECHNOLOGY**

**0445/21**

Paper 2 Graphic Products

**October/November 2019**

MARK SCHEME

Maximum Mark: 50

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**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 2019 series for most Cambridge IGCSE™, Cambridge International A and AS Level components and some Cambridge O Level components.

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This document consists of **7** 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:**

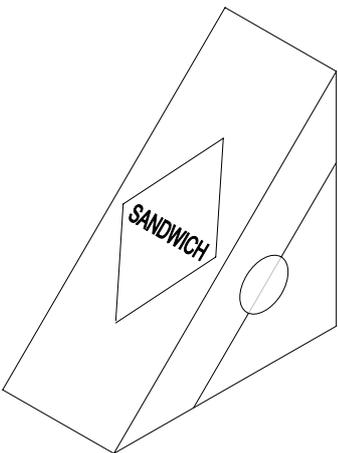
Marks should be awarded using the full range of marks defined in the mark scheme for the question (however; the use of the full mark range may be limited according to the quality of the candidate responses seen).

**GENERIC MARKING PRINCIPLE 6:**

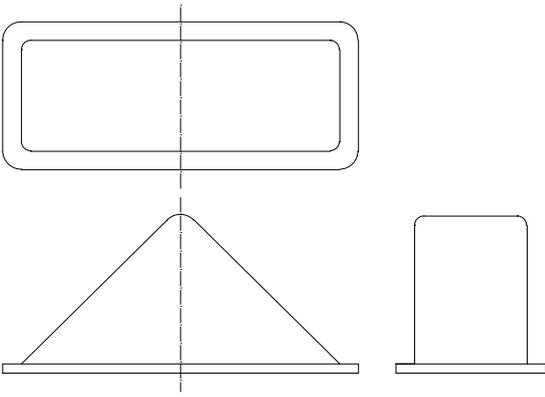
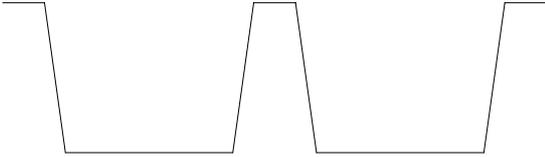
Marks awarded are based solely on the requirements as defined in the mark scheme. Marks should not be awarded with grade thresholds or grade descriptors in mind.

## Section A

Question	Answer	Marks
A1(a)	<u>Hexagon</u> Any Hex drawn (1) Any regular hexagon (1) Hexagon to O/L (1)	3
A1(b)	<u>Base of bun</u> Lower rectangle 140 · 20 (1) 25mm below horizontal CL (1) 20mm radius to both bottom corners (1)  <u>Lid of bun</u> Two vertical line 5mm either side (1) Two chamfer lines (1) Top curve of bun R96 (1) Two sides of equilateral triangle 10 · 10 drawn correctly on centre line (1)	7
A1(c)	<u>Filling</u> Two semi circles R15 each end (1) Bottom rectangle for cheese 150 · 5 (1)	2
A1(d)	<u>Lettering:</u> Accuracy and proportion of N (1) Accuracy and proportion of C (1) Spacing (1)	3

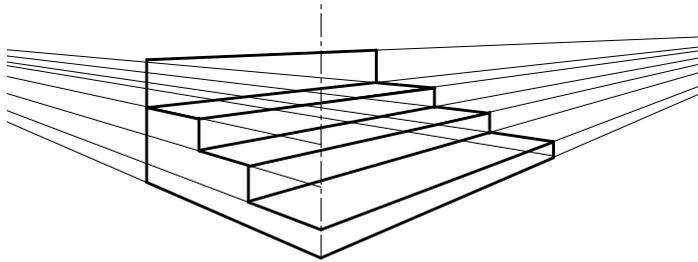
Question	Answer	Marks
A2(a)	 <p>Triangular side face 120 high (1) · 120 long (1) Front face 60 wide (1)</p>	3
A2(b)	Diamond drawn 100 · 50 (1) Diamond drawn in centre of front face / centred on lettering (1)	2
A2(c)	Edge of flap shown on side face (1)	1

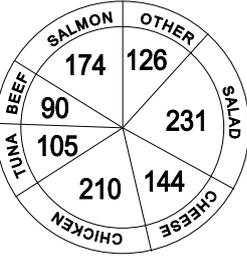
Question	Answer	Marks
A3(a)	Method shown with some type of tab and some type of slot shown Method shown will 'lock' the lid in place Clear communication	(1) (1) (1) (1) <b>4</b>

Question	Answer	Marks	
B4(a)	 <p>Plan view Inner rectangular 85 · 30 Radii to all inner corners Outer rectangle 95 · 40 6mm radii to outer corners</p> <p>Side view Base rectangle complete 95 · 3 mm Left sloping side of triangle 6mm radius between sloping sides</p> <p>End view Rectangle 30 · 40 Radius to top left corner</p>	(1) (1) (1) (1)  (1) (1) (1)  (1) (1)	<b>9</b>
B4(b)	 <p>Two trays shown Top of left tray and right tray 50 mm wide Any draft shown on left Any draft shown on Right Depth of left tray 40 mm Depth of right tray 40 mm Sides of trays symmetrical Full line across top Left and right tops 10 Centre section 10</p>	(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	<b>10</b>

Question	Answer	Marks
B4(c)(i)	Polystyrene, HIPS,	<b>1</b>
B4(c)(ii)	The draft angle makes the vacuum formed item <i>easier</i> to remove from the <i>mould</i>	(1) (1) <b>2</b>
B4(d)	Heater Former, mould Bed / platen	(1) (1) (1) <b>3</b>

## Section B

Question	Answer	Marks
B5(a)	 <p><u>Left hand (end view)</u></p> <p>Top edge of bottom step to VP2 (1)  Top edge of bottom step to VP (1)  R/H vertical of bottom step (1)  R/H end of bottom step to VP1 (1)  Approximate width of bottom step (1)  Width of bottom step to VP2 (1)</p> <p>L/H vertical of step 2 (height) to VP1 (1)  L/H vertical of second step to VP 2 (1)  R/H end of step 2 to VP1 (1)  Approximate width of step 2 (1)  Width of step 2 to VP2 (1)</p> <p>Front edge (height) of step 3 (1)  Front edge (height) of step 3 to VP1 and VP2 (1)  L/H side of top to VP2 (1)  R/H edge of top (1)</p>	15
B5(b)	<p><u>Advantages:</u>  Cheaper postage / delivery costs, less likely to get damaged in transit, can fold up when not in use, easier to dispose of.</p> <p><u>Disadvantages:</u>  Time taken to assemble it, may be difficult to assemble, could assemble incorrectly, parts may be missing/lost.</p>	2

Question	Answer	Marks
B5(c)	 <p>Accept different order of fillings</p> <p>Beef – 30°                      Cheese – 48°              Salad – 77°                  Tuna – 35°              Chicken – 70°                Other – 42°</p> <p>Outer circle correct (1)              Inner circle correct (1)              Two sectors correct (1)              Three sectors correct (1)              Four sectors correct (1)              All sectors correct (1)              Labels added around edge (1)              Numbers sold (1)</p>	8