

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

**MARK SCHEME for the October/November 2010 question paper
for the guidance of teachers**

0445 DESIGN AND TECHNOLOGY

0445/21

Paper 2 (Graphic Products), maximum raw mark 50

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.

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A1 Accuracy and proportion of:

V	(1)	
A	(1)	
L	(1)	
S	(1)	
Spacing	(1)	
Height	(1)	[6]
		[Total: 6]

A2 (a) Octagon
Outline (8 sides)
Regular

(1)
(1) [2]

(b) Triangle – correct size
Fuselage (width 1 – O/L 1)
Nose R10
Quadrant R30 (height 1- arc 1)
Angle on fuselage 30°

(1)
(2)
(1)
(2)
(1) [7]

[Total: 9]

A3 (a) 66 centres
Ø56 equidistant apart
Ø56 part circle drawn ×2
R 68 arc drawn from Ø56 centre ×2
Arc R40 drawn ×2

(1)
(1)
(2)
(2)
(2) [8]

(b) Suitable cut / triangular slit / insert 0–2 pr

[2]

[Total: 10]

B4 (a) *Plan and F. E*

Plan length	95	(1)	
Plan width	95	(1)	
Thickness top	2	(1)	
Thickness sides	2	(1)	
Thickness bottom	2	(1)	[5]

(b) *Centre positions of 4 holes*
2 verticals – correct 4 spaces
2 horizontals – correct 4 spaces

(4)
(4)

Cup in position on plan

A circle representing top of cup
Ø80 to scale

(1)
(1)

A circle representing bottom of cup
Ø36 circle (Ø40 – thickness) to scale

(1)
(1)

Correct position on plan (1) [13]

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- (c) *Cup in position on front elevation*
- | | | |
|-------------------------------------|-----|--|
| Ø80 projected | (1) | |
| Ø40 projected | (1) | |
| Height 100 from inside of base (50) | (1) | |
- (d) *The correct size hole needed in top*
- | | | |
|-------------------------------|-----|-----|
| Size Ø30 +/- 1 mm | (1) | |
| In one of 3 spare positions | (1) | |
| Evidence of projection 0–2 pr | (2) | [4] |

[Total: 25]

- B5 (a) *Pie chart***
- | | | |
|-----------------------------------|-----|-----|
| Circle drawn | (1) | |
| Divided into 5 | (1) | |
| Correct divisions 75/90/45/120/30 | (4) | |
| 2 largest sectors – clear labels | (2) | |
| Pie chart label 2006 | (1) | [9] |
- (b) *Two dimensional chart*
- | | | |
|----------------------------------|-----|-----|
| Appropriate method (e.g. bar) | (1) | |
| Suitable scale selected | (1) | |
| Information correctly plotted ×5 | (5) | |
| Labels evident | (1) | |
| Colour enhancement | (1) | [9] |
- (c) *2009 figures for annual report*
- | | | |
|--|-----|-----|
| Symbol to match freight pr 1–2 | (2) | |
| Symbol to match private pr 1–2 | (2) | |
| Freight larger than private | (1) | |
| Freight approx 2.5 × larger than private | (1) | |
| Colour enhancement | (1) | [7] |

[Total: 25]