

**UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS**  
International General Certificate of Secondary Education

**MARK SCHEME for the May/June 2007 question paper**

## **0445 DESIGN AND TECHNOLOGY**

**0445/02**

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.

All Examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

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<b>A1</b>	Ø46 circle	[1]	
	35 × 45 rectangle	[1]	
	52 side equilateral triangle	[1]	
	octagon 22 side	[1]	
	hexagon 30 side	[1]	<b>[5]</b>
	circle	[1]	
	rectangle	[1]	
	equilateral triangle	[1]	
	hexagon	[1]	<b>[4]</b>
	<b>A2</b>	Accuracy and Proportion of:	
	<b>L</b>	[1]	
	<b>E</b>	[1]	
	<b>T</b>	[1]	
	<b>S</b>	[1]	
	Height	[1]	
	Spacing	[1]	<b>[6]</b>
<b>A3 (a)</b>	Overall height 141 ± 2mm	[1]	
	regular octagon	[1]	
	cuts to square	[1]	
	evidence of plots for clock	[1]	
	elliptical clock face drawn	[1]	
	base and tower in proportion	[1]	
	slope base to tower	[1]	<b>[7]</b>
<b>(b)</b>	One direction shadow	[1]	
	Graduation	[1]	
	Quality of reality	[1]	<b>[3]</b>

**[Total Section A: 25]**

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**B4 (a)** on given centre lines

<b>(i)</b> Rocket body & nose cone:			
Nose cone		[1]	
Ø20 tube		[1]	
Ø20 / Ø30 disc		[1]	
Ø30 tube		[1]	
Solid line to base of Ø30 tube		[1]	<b>[5]</b>
 Tail fins:			
Height		[1]	
Width		[1]	
Angle		[1]	
Construction of ellipse		[1]	
Outline of ellipse		[1]	<b>[5]</b>
 <b>(ii)</b> Plan:			
Circle evident		[1]	
4 fins at 90° (4x1)		[4]	<b>[5]</b>
 <b>(iii)</b> Pentagonal base:			
Disc of Ø100		[1]	
Construction evident (Pr 1-2)		[2]	
Regular pentagon (Pr 1-2)		[2]	<b>[5]</b>
 <b>(b)</b> Tail fin joint:			
Method of joining two fins (cross halving) (Pr 1-2)		[2]	
Method of joining fins to Ø30 tube (Pr 1-2)		[2]	
Notes		[1]	<b>[5]</b>
			<b>[Total: 25]</b>

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**B5 (a) EV**

Overall height to hexagon	[1]	
Top evident	[1]	
Inset of top in hidden detail	[1]	
Hidden detail of hole in top	[1]	
Base evident	[1]	
Inset of base in hidden detail	[1]	
Projected in line from plan	[1]	

**PLAN**

Hexagon correct size to scale	[1]	
Regular hexagon	[1]	
Circle drawn for hole in top	[1]	<b>[10]</b>

**(b) Development sides:**

Six sides all same width as given (6×1)	[6]	
Two regular hexagons (2×1)	[2]	
Hex with Ø60 hole	[1]	
One end only	[1]	
Fold in spacers (2×2)	[4]	
One flap	[1]	<b>[15]</b>

**[Total: 25]**