

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

**7048 CDT: DESIGN AND COMMUNICATION**

**7048/01**

Paper 1, maximum raw mark 80

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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Page 2	Mark Scheme: Teachers' version	Syllabus	Paper
	GCE O LEVEL – October/November 2010	7048	01

<b>1 (a) (i) No marks for 2D</b>			
Base length (irrespective of orientation) to overlay	1		
Base depth (irrespective of orientation) to overlay	1		
Orientation (base length to left)	1	[3]	
Six square corner posts	1		
Height of best post (to overlay)	1	[2]	
Wall set in from corner post	1		
Overall height of wall (to overlay)	1		
Entrance gap	1		
Wall thickness to overlay	1	[4]	
Running track attempted	1		
Elliptical corner evident (or hole in roof 1 mark only)	1	[2]	
			<b>[11]</b>
<b>(ii)</b> Any evidence of thick outline on any correct position	1		
Thick line applied to most outer edges	1		
Thick lines applied to one corner post correctly	1	[3]	
			<b>[3]</b>
<b>(b) (i)</b> Ellipse centre in correct position	1		
Major axis 80 mm	1		
Minor axis 50 mm	1		
Ellipse – some evidence of construction	1		
Correct construction	1		
Profile of ellipse correct to candidate solution	1	[6]	
<b>(ii)</b> The word 'WELCOME' added	1		
The word 'WELCOME' consistent in height or central to space	1	[2]	
			<b>[8]</b>
<b>(c)</b> Min two geometrical shapes evident (one shape = 0)	1		
'P' evident	1		
Contains three shapes and 'P' combined	1	[3]	
			<b>[3]</b>
<b>(d) (i)</b> Design added	1		
Horizontal lines angled – verticals remain upright	1		
Curves distorted	1	[3]	
<b>(ii)</b> Shading makes the pole look cylindrical	1		
Shading makes the top look spherical	1	[2]	
			<b>[5]</b>
			<b>[30]</b>

Page 3	Mark Scheme: Teachers' version	Syllabus	Paper
	GCE O LEVEL – October/November 2010	7048	01

<b>2</b>	<b>(a) (i)</b> Width of end view-seating area (to overlay)	1	
	<b>End</b> Height to roof angle (to overlay)	1	
	Roof angle 60°	1	
	Three equal 'steps' (to overlay)	1	
	Roof support	1	
	Advertising board triangle (width and height)	1	[6]
	<b>(ii)</b> Height of stand projected from End view	1	
	<b>Front</b> Width of stand (to overlay)	1	
	Edge of steps projected	1	
	Advertising board projected	1	
	(to overlay or candidate solution in <b>(i)</b> )		
	Roof projected to candidate solution in <b>(i)</b>	1	[5]
	<b>(iii)</b> Width of stand projected to candidate solution	1	
	<b>Plan</b> Depth of stand projected to candidate solution	1	
	Roof projected to candidate solution	1	
	Advertising board projected to candidate solution	1	[4]
			<b>[15]</b>
	<b>(b)</b> Front and base completed (size to overlay)	1	
	Fold line extended (long chain)	1	
	Second triangular end in position (45° or not)	1	
	Second glue tab in appropriate positions	1	
	Second locating tab in position to candidate solution	1	[5]
			<b>[5]</b>
	<b>(c)</b> Two fruit shapes evident	1	
	'ZING' evident	1	
	Shapes and 'ZING' combined	1	[3]
			<b>[3]</b>
	<b>(d) (i)</b> Advertising board aligned to VP1 and VP2	1	
	Triangular shaped end completed	1	
	Base shown beyond triangle and aligned to VP2	1	[3]
	<b>(ii)</b> Design added	1	
	Design added in perspective	1	[2]
	<b>(iii)</b> Any colour added	1	
	Colour added in a way that enhances the illustration	1	[2]
			<b>[7]</b>
			<b>[30]</b>

Page 4	Mark Scheme: Teachers' version	Syllabus	Paper
	GCE O LEVEL – October/November 2010	7048	01

<b>3 (a)</b>	Length of rectangle (148 mm to 152 mm)	1	
	Height of rectangle (103 mm to 107 mm)	1	
	Three equal divisions (49 mm plus or minus 2 mm)	1	[3]
	Three equal size squares	1	
	Three squares to overlay	1	
	Any three equal size circles	1	
	Three circles correct size	1	
	Three circles in correct position	1	[5]
	Any 'Stripe' at 45 degrees	1	
	Stripe 30 mm wide (to overlay)	1	[2]
	Semi-circle in correct position	1	
	Semi-circle correct to overlay or candidate solution	1	[2]
			[12]
	<b>(b)</b>	<b>Stage 1</b>	
Strip of acrylic shown (could be 2D)		1	
Folds shown by a dashed line		1	
Cuts for base shown by a solid line		1	[3]
<b>Stage 2</b>			
Strip of acrylic shown in 3D		1	
90 degree fold shown	1		
Cuts for base clearly visible	1	[3]	
		[6]	
<b>(c)</b>	3D sketch of square base	1	
	Thickness of square base evident	1	
	3D sketch of triangle	1	
	in appropriate position above base	1	
	3D sketch of two pegs	1	
	in appropriate position between base and triangle	1	
Two holes shown in triangle <b>or</b> base	1	[7]	
		[7]	
		[25]	

Page 5	Mark Scheme: Teachers' version	Syllabus	Paper
	GCE O LEVEL – October/November 2010	7048	01

<b>4</b>	<b>(a)</b>	Arm shown moving from up to down position (arc)	1			
		Movement of arm shown in at least 4 positions	1			
		Collar shown at end position on the pole	1			
		At least 4 positions of collar and strut shown	1			
		At least 4 points plotted for P	1			
		Plotted points joined with a smooth curve to candidate solution	1	[6]		
					[6]	
	<b>(b)</b>	<b>(i)</b>	Pictorial pole shown	1		
			Pictorial collar shown on pole	1		
			Pictorial pin shown that locates in hole on the pole	1	[3]	
						[3]
		<b>(ii)</b>	Section of pole shown	1		
			Section of collar shown	1		
			Pin shown	1		
			Pin shown in position	1		
			Appropriate hatching (ignore pin)	1	[5]	
						[5]
	<b>(c)</b>	Suitable colour selected for pole (brown/yellow)	1			
		Shading makes pole look round in shape	1			
		Wood grain shown on pole	1			
Suitable colour selected for end cap (yellow)		1				
Shading makes end cap look round in shape		1				
Shading makes end cap look shiny		1	[6]			
				[6]		
<b>(d)</b>	Bottom circle drawn $\varnothing 40$	1				
	Top circle drawn $\varnothing 30$	1				
	Inner hole indicated (any size)	1				
	Sloping sides	1				
	Vertical height 25 (between centre lines)	1	[5]			
				[5]		
				[25]		

Page 6	Mark Scheme: Teachers' version	Syllabus	Paper
	GCE O LEVEL – October/November 2010	7048	01

<b>5 (a)</b>	The remaining five/six stages shown in a flow chart	1		
	All added stages in the correct order (as given)	1		
	Lettering legible and clear	1		
	The three different flow chart symbols used anywhere	1		
	The three different flow chart symbols used correctly	1		
	Decision box has Yes and No	1		
	Feedback loop incorporated correctly	1		
	Connecting lines (between boxes)	1		
	Arrows used on all lines	1	[9]	
				<b>[9]</b>
<b>(b) (i)</b>	Plastic cup drawn on flat surface	1		
	Bottom and top circles of different sizes	1		
	Sides to cup shown	1	[3]	
	<b>(ii)</b> Appropriate size hole shown in tray	Depth of tray shown	1	[2]
		<b>(iii)</b> Top circle drawn	1	
	Cup passes through the tray (circular top lower than plastic cup top)	1		
	Curve shown where cup touches the tray	1	[3]	
				<b>[8]</b>
	<b>(c) (i)</b>	Any Logo with images <b>not</b> words	1	
		Idea shows cup/s must be placed in bin	1	
Idea shows the two different cups		1		
Idea shows the two cups must be placed in different bins		1	[4]	
				<b>[4]</b>
<b>(ii)</b> Logo added to given space		Appropriate size	1	
		Quality of presentation – good 1, excellent 2	2	[4]
				<b>[25]</b>

Page 7	Mark Scheme: Teachers' version	Syllabus	Paper
	GCE O LEVEL – October/November 2010	7048	01

<b>6 (a)</b>	Border correctly added to the two remaining signs (2 × 1 mark)	1	
		1	
	The words Eagles and Sharks added in appropriate positions to each of the signs	1	
	Words Eagles or Sharks consistent with 'Lions'	1	
	Eagle image added to sign	1	
	Good quality image of eagle added to sign	1	
	Shark image added to sign	1	
	Good quality image of shark added to sign	1	[8]
			[8]
<b>(b)</b>	Circle divided into any three sectors	1	
	Lions 120° correct size –	1	
	160 and 80 degrees (slightly less than 90° BOD)	1	
	Sectors coloured ( any colour)	1	
	Different colour used to identify each of the sectors	1	
	Colour applied with quality	1	
	One image evident on the pie chart	1	
	Two/three images used on the pie chart to enhance the illustration	1	[8]
			[8]
<b>(c)</b>	Lions data used (Lions team 6, 10, 2)	1	
	3D bar chart	1	
	Suitable scale selected (10 equal spaces)	1	
	Scale labelled (number of places)	1	
	1 <sup>st</sup> , 2 <sup>nd</sup> and 3 <sup>rd</sup> places as bars correctly plotted 3 × 1	3	
	Bars identified as 1 <sup>st</sup> , 2 <sup>nd</sup> , and 3 <sup>rd</sup>	1	
	Bar chart uses a lion image/word in some way	1	[9]
			[25]