

**MARK SCHEME for the October/November 2011 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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<b>1 (a) (i) Plan view</b>		
Any Hexagon drawn		1
Hexagon correct to size		1
Any Slot drawn		1
Slot correct size and position		1
Hexagon and slot in correct orientation		1
		[5]
<b>(ii) Front view</b>		
Front view projected from plan (candidate solution)		1
Box width correct		1
Box height correct		1
Two inner lines in correct position		1
Back panel correct to height		1
Back panel correct width		1
		[6]
<b>(iii) End view</b>		
Width – consistent with plan (regardless of size)		1
Height – projected from front view (regardless of size)		1
Box outer correct size		1
Back panel correct height		1
Back panel correct side (check projection)		1
		[5]
		<b>[16]</b>
<b>(b) Sketched answers in reasonable proportion</b>		
Six surfaces for the box		1
Six surfaces that match the width from hex top		1
One long glue tab to hold box together		1
Bottom hexagon		1
9/10 glue tabs to hold bottom and top in place		1
Back panel in correct position		1
No fold lines indicated on back panel		1
		[7]
		<b>[7]</b>

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<b>(c) (i)</b>	Image of house used	1
	The word HAVEN included in the design	1
	Image and words combined (brought together)	1
	Ideas developed (progression)	1
		<b>[4]</b>
		<b>[4]</b>
<b>(ii)</b>	Final design accurately drawn in the box	1
	Design fills the space appropriately	1
	Colour used appropriately	1
		<b>[3]</b>
		<b>[3]</b>
		<b>[30]</b>

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<b>2 (a)</b>	Isometric drawing (30 degrees left and right)	1
	Overall height of drawing (180 mm)	1
	Overall width of drawing (120 mm)	1
	Overall depth of drawing (80 mm)	1
	Tubular frame largely the correct size (6 mm)	1
	Two feet (2x1)	2
	Two uprights (2x1)	2
	Top	1
	Bottom rail	1
	Information board drawn	1
	Information board of correct size 120 x 96	1
		[13]
		[13]
<b>(b)</b>	Exploded three dimensional sketch	1
	Horizontal section drawn	1
	Vertical section drawn	1
	Vertical section drawn square	1
	Cheese head bolt	1
	Plain shank and thread shown	1
	Barrel nut with threads shown	1
	Positioning of the four parts to form an exploded view	
	Two parts (1), three parts (2) or four parts (3)	3
		[10]
<b>(c) (i)</b>	Clip fastens to the frame	1
	Clip holds the foam board in position	1
	Foam board easily removed from the clip	1
	Ideas developed (progression)	1
		[4]
<b>(ii)</b>	Three dimensional sketch of the final design	1
	Function of the clip shown	1
	Colour used to show an appropriate material	1
		[3]
		[7]
		[30]

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<b>3</b>	<b>(a) (i) Design 1</b>	
	Bottom circle 24 mm diameter	1
	Top circle 16 mm diameter	1
	Height to second circle – 16	1
	Height to top point – 25	1
	Sloping lines (awarded if circles incorrect)	1
		<b>[5]</b>
	<b>(ii) Design 2</b>	
	End view width in proportion	1
	End view height in proportion	1
	End view pitch in proportion	1
	Front view width and height in proportion	1
	Front view roof line to end view	1
		<b>[5]</b>
	<b>(iii) Design 3</b>	
	Eye line and two VP's used	1
	Left hand side in good proportion	1
	Right hand side in good proportion	1
	Any sloping roof	1
	Centre of roof determined & drawn to corners	1
		<b>[5]</b>
		<b>[15]</b>
	<b>(b) (i)</b>	
	Idea plus notes/development of waterproof	1
	Suitable symbol that communicates waterproof	1
	Idea plus notes/development of quick assembly	1
	Suitable symbol that communicates quick assembly	1
		<b>[4]</b>
		<b>[4]</b>
	<b>(ii)</b>	
	At least two tones/colour applied to house	1
	Developed Waterproof symbol added	1
	in correct circle	1
	Developed Quick assembly symbol added	1
	Acceptable quality of graphic	1
	High quality graphic	1
		<b>[6]</b>
		<b>[6]</b>
		<b>[25]</b>

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<b>4 (a) (i)</b>	AQUA written in capitals	1
	AQUA on correct surface and approximate size	1
	AQUA in isometric/perspective	1
		<b>[3]</b>
<b>(ii)</b>	Wave added to correct surface	1
	Wave in the correct orientation	1
	Four waves in reasonable proportion	1
		<b>[3]</b>
		<b>[6]</b>
<b>(b)</b>	Plan divided horizontally into any six divisions	1
	Six equal divisions	1
	Construction evident	1
	Existing 5 vertical divisions extended accurately	1
	Divisions projected to front view	1
		<b>[5]</b>
		<b>[5]</b>
<b>(c) (i)</b>	'Open' isometric tray – sides	1
	'Open' isometric tray – ends	1
	'Open' isometric tray – bottom	1
	Isometric tray in good proportions	1
	Reinforcing visible and tucked in	1
	L/H handle	1
	R/H handle	1
	Glue tabs visible (inside or outside)	1
		<b>[8]</b>
		<b>[8]</b>
<b>(ii)</b>	Glue	1
	being applied to tabs	1
	Put together	1
	for 5 mins – word or clock	1
	Cartons	1
	being put in the tray	1
		<b>[6]</b>
		<b>[6]</b>
		<b>[25]</b>

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5	(a)	Length of line – 50 mm	1
		direction of line – north	1
		Length of line – 80 mm	1
		direction of line – north east	1
		Length of line – 40 mm	1
		direction of line – south	1
			[6]
			[6]
	(b)	Any Square	1
		Square correct size	1
		Diamond correct size and position	1
		Circle added	1
		Circle correct size and position	1
		DROP added	1
		Correct style and size	1
		Correct position / spacing	1
			[8]
			[8]
	(c)	Points T1 and T2 located on start circle	1
		Circle divided into min 12 (half into 6)	1
		Chord of 1/12 th outer circle stepped off six times	1
		Radius T1/T2 drawn	1
		At least four points (1) or six points (2) of T1 <b>correctly</b> plotted	2
		At least four points (1) or six points (2) of T2 <b>correctly</b> plotted	2
		Cross-over of plots at quarter roll	1
		Curve T1 joined with a smooth curve	1
		Curve T2 joined with a smooth curve	1
			[11]
			[11]
			[25]

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<b>6 (a)</b>	Pie chart shown	1
	One/two correct segments	1
	all segments correct	1
	Colour used	1
	Appropriate labels/key to show types of disaster	1
		[5]
<b>(b)</b>	X and Y axis evident	1
	Appropriate scale	1
	2 points plotted correctly and joined	1
	4 points plotted correctly and joined	1
	Appropriate labels to axis	1
		[5]
<b>(c)</b>	3D Bar chart (horizontal or vertical)	1
	Appropriate scale	1
	2 bars plotted correctly	1
	4 bars plotted correctly	1
	Hours and Years to show fall in response times	1
		[5]
		[15]
<b>(d)</b>	Outer ellipse drawn	1
	Outer ellipse drawn to size	1
	Inner ellipse drawn	1
	Inner ellipse drawn to size	1
	Construction evident	1
	Outline of outer ellipse to overlay	1
	Outline of inner ellipse to overlay	1
	Four boxes of approximate size and position/orientation	1
	Words added – correct name and position	1
	Four arrows of approximate size – correct position/orientation	1
		[10]
		[10]
		[25]