

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS International General Certificate of Secondary Education

MARK SCHEME for the May/June 2012 question paper

for the guidance of teachers

0445 DESIGN AND TECHNOLOGY

0445/13

Paper 1 (Design), 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.

Mark schemes must be read in conjunction with the question papers and the report on the examination.

• Cambridge will not enter into discussions or correspondence in connection with these mark schemes.

Cambridge is publishing the mark schemes for the May/June 2012 question papers for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.



	Page 2		Mark Scheme: Teachers' version	Syllabus	Paper	
			IGCSE – May/June 2012	0445	13	
1	(a)	 Accept any four additional suitable points – carry all items together, waterproof, easier to transport, easy to clean reduces carrying weight, easy access to small items (hooks, floats, bait etc). (no repeats of question) Accept drawings of any two suitable methods to provide mobility – single axle, double axle, three wheel system with jockey wheel, rollers, sledge style, carrying straps, etc. innovative approach Any suitable ideas. At least three different ideas for maximum marks. Pro rata if fewer. 		rying) [4]	
	(b)			vheel,) [4]	
	(c)			mum		
		Communication				
		Simple techni	e drawings displaying a low standard or limited rang ques	e of (0–2)	
			drawings displaying a good standard and a range of ques – shading/colour/annotation etc.	f (3–4)	
			quality drawings using a wide range of techniques w ation and detail	ith clear (5–6)	
		Suital	bility			
			stic designs showing outlines only r more detail, sensible solutions that could work	(0–2 (3–4		
		Accura	ate solutions, good fitness for purpose, detailed con	struction (5–6) [12]	
	(d)	Evaluation of each of the ideas. At least 3 evaluations up to 2 m each Selection and justification. (1+1)		to 2 marks (0–6)	
				(2)	[8]	

Page 3		Mark Scheme: Teachers' version		Syllabus	Paper	
		IGCSE – N	lay/June 2012	0445	13	
(e)	Qualit	ty of drawing				
	Poor I	ine quality, proportions,	little detail	(1)		
	Good	line work, use of colour,	, proportions, some detail	(2–3	3)	
	High standard throughout with a range of techniqu clearly all detail		a range of techniques that	at show (4)		
	Dimensions 2 or 3 overall dimensions only – 1					
		Additional detail	dimensions – 2	(2)		
	Const	truction details				
	A simplistic approach showing little or no detail of construction to be used Most constructional detail may be obvious from overall views or with some annotation		iction to be (0–2	2)		
			ews or with (3–4	•)		
		nstructional detail will be onal detail drawings as r	e clear with good annotation necessary	and (5–6	S) [1	
(f)	Suitab	ole specific materials sta	ated.	(2)		
	Appro	(2)				
(g)	(g) Suitable method stated.Good detailed description of: processes		(1)			
			processes	(3)		
			tools.	(2)		
					[Total: 5	

	Page 4		Mark Scheme: Teachers' version	Syllabus	Paper	
			IGCSE – May/June 2012	0445	13	
2	(a)	Accept any four additional suitable points – cardboard greaseproof on one side, attractive with additional items, carparation to avoid contamination, carrying system, etc. (n repeats of question)			[4]	
	(b)	Accept drawings of any two different approaches to the construction of joints – based on slots, tabs or interlocking flaps, etc.		g flaps, (2x2)	[4]	
	(c)	Any suitable ideas. At least three different ideas for maximum marks. Pro rata if fewer.		kimum		
		Com	nunication			
		Simpl techn	e drawings displaying a low standard or limited rang iques	ge of (0–2)		
			drawings displaying a good standard and a range o iques – shading /colour/annotation etc.	of (3–4)		
		•	quality drawings using a wide range of techniques w ation and detail	vith clear (5–6)		
		Suita	bility			
		Simpl	istic designs showing outlines only	(0–2)		
		Rathe	er more detail, sensible solutions that could work	(3–4)		
		Accur	rate solutions, good fitness for purpose, detailed cor	nstruction (5–6)	[12]	
	(d)	Evaluation of each of the ideas. At least 3 evaluations up to 2 marks each		to 2 (0–6)		
		Selec	tion and justification. (1+1)	(2)	[8]	

Page	5	Mark Scheme: Teachers' version		Syllabus	Paper
		IGCSE – N	lay/June 2012	0445	13
(e)	Quali	ty of drawing			
	Poor line quality, proportions, li		, little detail	(1)	
	Good	line work, use of colour	r, proportions, some detail	(2–3)	
	High standard throughout with a clearly all detail		h a range of techniques that	t show (4)	
	Dime	nsions 2 or 3 overall o	dimensions only – 1		
		Additional deta	ail dimensions – 2	(2)	
	Cons	truction details			
	A sim be us		g little or no detail of constru	uction to (0–2)	
		constructional detail ma	ay be obvious from overall vi	iews or (3–4)	
		nstructional detail will b onal detail drawings as	e clear with good annotatior necessary	n and (5–6)	[′
(f)	Suitat	ole specific materials s	tated.	(2)	
	Appro	ppriate reasons for choic	ce.	(2)	
(g)	Suitable method stated. Good detailed description of:			(1)	
			processes	(3)	
			tools.	(2)	
					[Total: 5

	Page 6		Mark Scheme: Teachers' version	Syllabus		
			IGCSE – May/June 2012	0445		13
3	(a)	Accept any four additional suitable points – articulated or flexible, magnetic and non magnetic, adjust reach, hand grip etc. (no repeats of question)		(no repeats	1x4)	[4]
	(b)	Accept drawings of any two suitable designs using different mechanical principles – scissor action, levers, sliding, gears, rack and pinion, pulleys, chain, belt, Bowden cable etc.		ars, rack and	2x2)	[4]
	(c)	Any suitable ideas. At least three different ideas for maximum marks. Pro rata if fewer.		imum		
		Communication				
		Simple techni	e drawings displaying a low standard or limited rang ques		0–2)	
		Clear drawings displaying a good standard and a range of techniques – shading/colour/annotation etc.			3–4)	
		High quality drawings using a wide range of techniques with clear annotation and detail			5–6)	
		Suitat	oility			
		Simpli	stic designs showing outlines only	(0–2)	
		Rathe	r more detail, sensible solutions that could work	(3–4)	
		accura	ate solutions, good fitness for purpose, detailed con	struction (5–6)	[12]
	(d)	Evaluation of each of the ideas. At least 3 evaluations up to 2 marks each			0–6)	
		Selection and justification. (1+1)		(2)	[8]

Page 7		Mark Scheme:	Teachers' version	Syllabus	Paper	
		IGCSE – N	lay/June 2012	0445	13	
(e)	Qualit	ty of drawing				
	Poor line quality, proportions, little detail				1)	
	Good	Good line work, use of colour, proportions, some detail			2–3)	
	High standard throughout with a range of techniques that show clearly all detail				4)	
	Dimer	nsions 2 or 3 overall dir				
		Additional detail	dimensions – 2	(2	(2)	
	Const	truction details				
	A simplistic approach showing little or no detail of construction to be used				0–2)	
	Most constructional detail may be obvious from overall views or with some annotation				3–4)	
	All constructional detail will be clear with good annotation and additional detail drawings as necessary			5–6) [12]		
(f)	Suitable specific materials stated. Appropriate reasons for choice.		(2	2)		
			(2	2) [4]		
(g)	Suitable method stated.		(*	1)		
	Good detailed description of: processes		(3	3)		
	tools.		(2	2) [6]		
					[Total: 50]	