

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the May/June 2006 question paper

0445 DESIGN AND TECHNOLOGY

0445/01

Paper 1, maximum raw mark 100

These mark schemes are published as an aid to teachers and students, to indicate the requirements of the examination. They show the basis on which Examiners were initially instructed to award marks. They do not indicate the details of the discussions that took place at an Examiners' meeting before marking began. Any substantial changes to the mark scheme that arose from these discussions will be recorded in the published *Report on the Examination*.

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.

Mark schemes must be read in conjunction with the question papers and the *Report on the Examination*.

The minimum marks in these components needed for various grades were previously published with these mark schemes, but are now instead included in the Report on the Examination for this session.

- CIE will not enter into discussion or correspondence in connection with these mark schemes.

CIE is publishing the mark schemes for the May/June 2006 question papers for most IGCSE and GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.

Page 1	Mark Scheme	Syllabus
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Question number		Detail mark	Mark on script	Total mark
1	Complete car	1		
	Half car vertical cut -2 horizontal cut -1	2		
	Quality of shading	1	4	
2	Modifications to leg	2		
	Fixing to ground	2	4	
3	Metal	1		
	Tenon saw (or similar)	1		
	Marking across	1		
	Coping/ fret saw	1		
	Odd leg calipers	1	5	
4	Choose material			
	Select datum edge			
	Plane or file datum edge	1x4		
	Mark width			
	Plane or file to width		4	
5	Permanent	1		
	Screws/Bolts	1		
	Metal	1		
	Permanent	1		
	Staple/Glue	1	5	
6	Plywood veneers - 2 or 1	2		
	End grain - 2 or 1	2	4	
7	Drop over edge	1		
	Level for 90°	1		
	Curve up to level of start	2	4	
8	Calculation for first support A or B A = 45	2		
	Answer for second B = 75	1	3	
9	Belt /pulleys, chain/sprockets, gears	2		
	Correct direction	1	3	
10	Two good reasons explained	2x2		
	Reasons only without explanation	1x2	4	40

Question number		Detail mark	Mark on script	Total mark
11	(a) Accept any suitable points – little space, stable, correct angle, adjustable angle, folds up, lightweight etc.	1x4	4	
	(b) Accept any suitable flexible joints – hinges, fabric, screw, bolt etc.	2x2	4	
	(c) Any suitable ideas. Communication Simple drawings displaying low standard or limited range of techniques Clear drawings displaying a good standard and a range of techniques – shading/colour/annotation High quality drawings using a wide range of techniques with clear annotation and detail Suitability Simplistic designs showing outlines only Rather more detail, sensible solutions that could work Accurate solutions, good fitness for purpose, detailed construction	0-2 3-4 5-6 0-3 4-6 7-9	6	
	(d) Evaluation of each of the ideas. At least 3 evaluations up to 2marks each. Selection and justification. (1+1)	0-6 2	6 2	
	(e) Quality of drawing Poor line quality, proportions, little detail Good line work, use of colour, proportions, some detail High standard throughout with a range of techniques that show clearly all detail Dimensions Construction details A simplistic approach showing little or no detail of constructions to be used Most constructional detail may be obvious from overall views or with some annotation All constructional detail will be clear with good annotation and additional detail drawings as necessary	0-3 4-6 7-8 2 0-3 4-6 7-8	8 2	
	(f) Suitable materials stated. Reasons for choice.	1 3	4	
	(g) Suitable method stated. Good detailed description of process, including materials (2), processes (2) and tools (2).	1 6	7	60

Page 3	Mark Scheme	Syllabus
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Question number		Detail mark	Mark on script	Total mark	
12	(a)	Accept any suitable points – Attract attention, represent area/country, looks modern, impression of speed/movement etc.	1x4	4	
	(b)	Accept any suitable methods – tabs and slots, slide into formed joining pieces, 'velcro', adhesive tape etc.	1x4	4	
	(c)	Any suitable ideas.			
		Communication			
		Simple drawings displaying low standard or limited range of techniques	0-2		
		Clear drawings displaying a good standard and a range of techniques – shading/colour/annotation	3-4		
		High quality drawings using a wide range of techniques with clear annotation and detail	5-6	6	
	Suitability	Simplistic designs showing outlines only	0-3		
		Rather more detail, sensible solutions that could work	4-6		
		Accurate solutions, good fitness for purpose, detailed construction	7-9	9	
	(d)	Evaluation of each of the ideas. At least 3 evaluations up to 2marks each.	0-6	6	
		Selection and justification. (1+1)	2	2	
(e)	Quality of drawing				
	Poor line quality, proportions, little detail	0-3			
	Good line work, use of colour, proportions, some detail	4-6			
	High standard throughout with a range of techniques that show clearly all detail	7-8	8		
	Dimensions	2	2		
Construction details	A simplistic approach showing little or no detail of constructions to be used	0-3			
	Most constructional detail may be obvious from overall views or with some annotation	4-6			
	All constructional detail will be clear with good annotation and additional detail drawings as necessary	7-8	8		
	(f)	Two methods with materials	2x2	4	
(g)	Appropriate item	2			
	Good communication skills	3			
	Good clear detail	2	7	60	

Question number		Detail mark	Mark on script	Total mark	
13	(a)	Accept any suitable points - little maintenance, safe in use, adjustable, transportable, not damaged by elements etc.	1x4	4	
	(b)	Accept any two suitable systems – screw, bolts/nuts, over centre device, wedge etc.	2x2	4	
	(c)	Any suitable ideas.			
		Communication			
		Simple drawings displaying low standard or limited range of techniques	0-2		
		Clear drawings displaying a good standard and a range of techniques – shading/colour/annotation	3-4		
		High quality drawings using a wide range of techniques with clear annotation and detail	5-6	6	
		Suitability			
	Simplistic designs showing outlines only	0-3			
	Rather more detail, sensible solutions that could work	4-6			
	Accurate solutions, good fitness for purpose, detailed construction	7-9	9		
	(d)	Evaluation of each of the ideas. At least 3 evaluations up to 2marks each.	0-6	6	
		Selection and justification. (1+1)	2	2	
(e)	Quality of drawing				
	Poor line quality, proportions, little detail	0-3			
	Good line work, use of colour, proportions, some detail	4-6			
	High standard throughout with a range of techniques that show clearly all detail	7-8	8		
	Dimensions	2	2		
	Construction details				
	A simplistic approach showing little or no detail of constructions to be used	0-3			
Most constructional detail may be obvious from overall views or with some annotation	4-6				
All constructional detail will be clear with good annotation and additional detail drawings as necessary	7-8	8			
(f)	Suitable materials stated.	1			
	Reasons for choice.	3	4		
(g)	Suitable method stated.	1			
	Good detailed description of process, including materials (2), processes (2) and tools (2).	6	7	60	

Question number		Detail mark	Mark on script	Total mark	
14	(a)	Accept any suitable points – stores water and food, easy to clean, good access for birds, does not scare birds, animals cannot climb/get to etc.	1x4	4	
	(b)	Accept any two suitable points – height, overhang, away from high walls/trees, small access to food, materials that animals cannot climb etc.	2x2	4	
	(c)	Any suitable ideas. Communication Simple drawings displaying low standard or limited range of techniques Clear drawings displaying a good standard and a range of techniques – shading/colour/annotation High quality drawings using a wide range of techniques with clear annotation and detail	0-2 3-4 5-6	6	
		Suitability Simplistic designs showing outlines only Rather more detail, sensible solutions that could work Accurate solutions, good fitness for purpose, detailed construction	0-3 4-6 7-9	9	
	(d)	Evaluation of each of the ideas. At least 3 evaluations up to 2marks each. Selection and justification. (1+1)	0-6 2	6 2	
	(e)	Quality of drawing Poor line quality, proportions, little detail Good line work, use of colour, proportions, some detail High standard throughout with a range of techniques that show clearly all detail	0-3 4-6 7-8	8	
		Dimensions Construction details A simplistic approach showing little or no detail of constructions to be used Most constructional detail may be obvious from overall views or with some annotation All constructional detail will be clear with good annotation and additional detail drawings as necessary	2 0-3 4-6 7-8	2	
	(f)	Suitable materials stated. Reasons for choice.	1 3	4	
	(g)	Suitable method stated. Good detailed description of process, including materials (2), processes (2) and tools (2).	1 6	7	60