OCR
RECOGNISING ACHIEVEMENT

GCSE

Design & Technology (Resistant Materials)

General Certificate of Secondary Education **GCSE 1956**

General Certificate of Secondary Education (Short Course) **GCSE 1056**

Mark Schemes for the Components

June 2008

1956/1056/MS/R/08

Oxford Cambridge and RSA Examinations

OCR (Oxford, Cambridge and RSA Examinations) is a unitary awarding body, established by the University of Cambridge Local Examinations Syndicate and the RSA Examinations Board in January 1998. OCR provides a full range of GCSE, A- level, GNVQ, Key Skills and other qualifications for schools and colleges in the United Kingdom, including those previously provided by MEG and OCEAC. It is also responsible for developing new syllabuses to meet national requirements and the needs of students and teachers.

The mark schemes are published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which marks were awarded by Examiners. It does not indicate the details of the discussions which took place at an Examiners' meeting before marking commenced.

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.

The reports on the Examinations provide information on the performance of candidates which it is hoped will be useful to teachers in their preparation of candidates for future examinations. It is intended to be constructive and informative and to promote better understanding of the syllabus content, of the operation of the scheme of assessment and of the application of assessment criteria.

Mark schemes and Reports should be read in conjunction with the published question papers.

OCR will not enter into any discussion or correspondence in connection with this mark scheme or report.

Any enquiries about publications should be addressed to:

OCR Publications
PO Box 5050
Annesley
NOTTINGHAM
NG15 0DL

Telephone: 0870 770 6622
Facsimile: 01223 552610
E-mail: publications@ocr.org.uk

CONTENTS

General Certificate of Secondary Education Resistant Materials (1956)

General Certificate of Secondary Education (Short Course) Resistant Materials (1056)

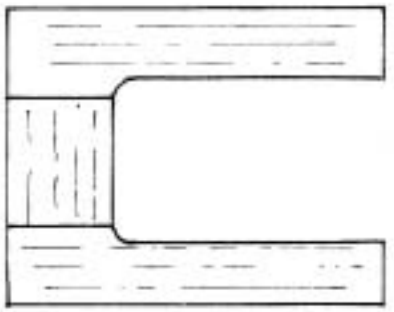
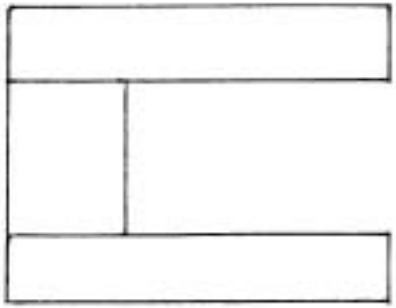
MARK SCHEMES FOR THE UNITS

1056/01, 1956/01 Paper 1 (Foundation)

Question			Syllabus Ref	Expected Answer	Mark
1	(a)			Template: used to mark out the shape of the wooden base. (1) Tenon saw: used to cut the shape of the wooden base. (1) Sanding machine: to make the edges/ends of the wooden base flat/smooth. (1) Varnish: used to make the wooden base attractive/protect it. (1)	**[4]**
	(b)			Safety precaution appropriate to use of sanding machine: wear eye protection, dust mask, and keep fingers behind sanded edge.	**[1]**
	(c)			Brace and bit, hole saw, lathe, power router, milling machine 2 marks (Not jig saw) Drill hole and insert blade of coping/ Hegner or equivalent saw. 1 mark Saw shape of hole. 1 mark Drill hole: 1 mark	**[2]**
	(d)			Clock hung on wall: method shown. (0-2) details of fittings. (1) Best method some form of slot screw/plate set in back with screw in wall. Use of nail only 1 mark. Use of nail with some provision in back 2 marks.	**[3]**

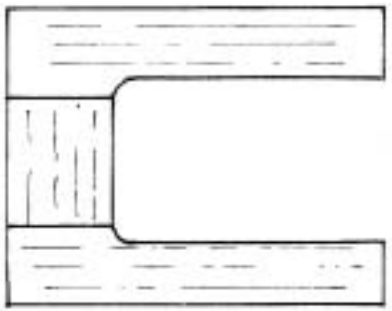
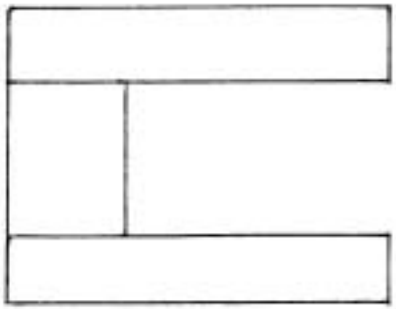
Question			Syllabus Ref	Expected Answer	Mark
2	(a)			Two positions shown in correct orientation.(2x1)	[2]
	(b)			Reason for using a chinagraph pencil or marker pen :- shows up more clearly, mistakes can be erased, scriber will leave a scratched surface.	[1]
	(c)			Three stages include: [draw] filing, scraping, wet and dry paper, Perspex polish, polishing mop /buffing wheel and polishing compound.	[1] [1] [1]
	(d)			Equipment used to heat the plastic: line bender, strip heater, hot air gun or oven.	[1]
	(e)			Partition 'glued' in position vertical or horizontal (1) Use of acrylic cement, tensol cement or equivalent (not glue) (1) Increased gluing area (1)	[3]
3	(a)	(i)		Drawing of appropriate mechanism: cam 0-2 dependent on accuracy. Accept cam-shaped wheels/off-centre wheels.	[2]
		(ii)		Correct name: cam.	[1]
		(iii)		Correct term for up and down movement: reciprocating.	[1]
	(b)			Two safety checks include: no sharp corners, secure fixing of parts, possibility of fingers being caught, non toxic finish.	[1] [1]
	(c)			Method of fixing wheel onto steel axle includes use of nut and threaded axle or star washer or drilled and tapped end of axle with discreet screw. (0-3) Method of preventing rubbing includes use of washer or 'spacer'. (0-1)	[4]

Question			Syllabus Ref	Expected Answer	Mark
4	(a)			Variety of drawing tools available including: drawing lines, setting angles, erase errors, repeat shapes, colour and fill.	[1] [1]
	(b)			CAM can be used to batch produce the wooden pieces: files can be downloaded from design to computer-controlled machine; machine can cut each of the shapes; ensured repetitive accuracy. Accept any 2 from these 3 points in description. Accurate = 1 mark Quick = 0 marks	[2]
	(c)			**Tray:** End or 3D views needed to show section through design of tray.T (0-2) **Former:** Consideration of taper or draft angles and radiused corners. F (0-2)	[4]
	(d)			Two quality control checks include: visual check to determine whether the plastic is formed at the correct temperature; visual check on overall appearance of the product; visual check on quality of surface finish; check on size tolerances. Check if puzzle pieces fit. Check condition of former.	[1] [1]
5	(a)			Increased popularity includes: For consumers: increased availability of goods for customers, collect and take home immediately, competitive prices, personal satisfaction of assembly, wide ranges available. For manufacturers: lower labour costs due to no assembly, more storage. Accept mix of answers from consumer/ manufacturer.	[1] [1]
	(b)			Appropriate K-D fitting used. (1) (dowel = 0) Correct positions to join shelf to end. (1) Reference to joint being screwed together. (1)	[3]
	(c)			Two electrical power tools include: band saw, scroll saw, jig saw, power router. (Laser/milling machine = 0)	[1] [1]

Question			Syllabus Ref	Expected Answer	Mark
	(d)			  correct arrangement (1) correct arrangement only (1) Fillet or construction (1) correct grain direction (1)	[3]

1056/02, 1956/02 Paper 2 (Higher)

Question			Syllabus Ref	Expected Answer	Mark
1	(a)			Variety of drawing tools available including: drawing lines, setting angles, erase errors, repeat shapes, colour and fill.	[1] [1]
	(b)			CAM can be used to batch produce the wooden pieces: files can be downloaded from design to computer-controlled machine; machine can cut each of the shapes; ensured repetitive accuracy. Accept any 2 from these 3 points in description. Accurate = 1 mark Quick = 0 marks	[2]
	(c)			**Tray**: End or 3D views needed to show section through design of tray. T (0-2) **Former:** Consideration of taper or draft angles and radiused corners. F (0-2)	[4]
	(d)			Two quality control checks include: visual check to determine whether the plastic is formed at the correct temperature; visual check on overall appearance of the product; visual check on quality of surface finish; check on size tolerances. Check if puzzle pieces fit. Check condition of former.	[1] [1]
2	(a)			Increased popularity includes: For consumers: increased availability of goods for customers, collect and take home immediately, competitive prices, personal satisfaction of assembly, wide ranges available. For manufacturers: lower labour costs due to no assembly, more storage. Accept mix of answers from consumer/ manufacturer.	[1] [1]
	(b)			Appropriate K-D fitting used. (1) (dowel = 0) Correct positions to join shelf to end. (1) Reference to joint being screwed together. (1)	[3]

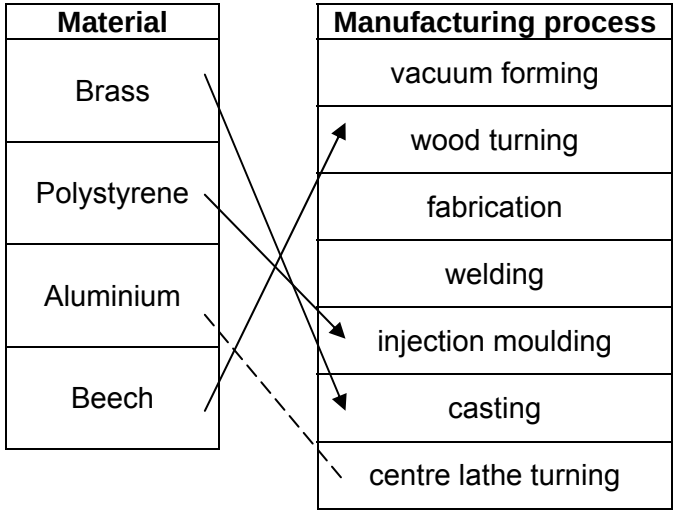
Question			Syllabus Ref	Expected Answer	Mark
	(c)			Two electrical power tools include: band saw, scroll saw, jig saw, power router. (laser or milling machine = 0)	[1] [1]
	(d)			  correct arrangement (1) correct arrangement only (1) fillet or construction (1) correct grain direction (1)	[3]
3	(a)			Rotation by means of metal rod, marbles and groove, ball race. (0-2) Details of materials and fittings used. (1)	[3]
	(b)			Method of positioning each DVD includes use of strips/guides/recesses onto/into the base and/or the central column. (0-2) Details of construction. (1) Details of materials and fittings used. (1)	[4]
	(c)			Jig or former must be appropriate to assist batch production of the DVD stand. (1) Details of the jig or former shown clearly. (0-2) Template = 0 marks	[3]

Question			Syllabus Ref	Expected Answer	Mark
4	(a)			The mild steel would be heated. (1) Allowed to cool. (1)	[2]
	(b)			Mild steel bent to shape using:- vice, folding bars, former, folding machine, soft faced hammer or mallet. 1 mark for each item used. Use of oxy-acetylene torch to heat up metal then hammer to shape.	[2]
	(c)			Modification to bracket Br (0-1) Modification to display boards Bd (0-1) Will it work W (0-2) Details of materials and fittings used. D (0-2)	[6]
5	(a)			Two benefits of injection moulding process include: Repetitive accuracy and precision; opportunities for large or small detailed or 'crude' mouldings; cost effective for volume production.	[1] [1]
	(b)			Method of adjustment to fit different size lids. (0-2) Method of gripping lids effectively. (0-2) Ergonomic considerations. (0-2) Details of materials and fittings used. (0-2)	[8]

1956/03 Paper 3 (Foundation)

Ques	Part	Responses	Mark	Additional Information
1	(a)	Easy to work, readily available in variety of thicknesses, paints well, glues together easily 2 x 1 for **different** points	2	If two correct points given against 1 or 2 reward positively Easy to assemble is not seen as a property of MDF Do not reward "durable" Do not reward "layered"
	(b)	1. Pencil, marking knife, try square, sliding bevel, marking gauge (accept cutting gauge), rule, tape measure = 1 2. Tenon saw, band saw, back saw, bench hook, sawing board, vice, circular saw = 1 3. Glass paper, sandpaper, cork block, sanding disc, orbital sander, linisher, (accept file) =1	3	Do not reward scriber Accept Hegner, Vibro, scroll, coping, jig even though not 100% technically correct (if machine saw stated give BOD) Do not reward junior hacksaw, hacksaw or just "saw" Do not accept wet and dry, emery cloth
	(c)	Screwed to body / dowel (axle) and external fix e.g. star washer, split pin 0-1 for axle 0-1 for fixing	2	Round head screw 2 marks (axle and fix) Countersunk screw 1 mark unless additional washer shown, then 2 marks Accept bolt/machine screw 1 mark. Fixing to body/nut required for second mark 1 mark for nail Do not reward pop rivet
	(d)	fixed to cab/base in some way. Rope, string, cord, chain, strap, handle 0-1 for attachment 0-1 for strap/handle/rope/cord/string	2	If "pushed along", no marks Fixing method must be clear Accept any method Accept annotation, e.g. hook, hook and eye as suitable fixing Do not accept glued
	(e)	Making: Any appropriate safety rule In use, with reference to the toy: non toxic paint, no sharp edges, no small parts, no loose parts	1	Accept reference to making or product

Ques	Part	Responses	Mark	Additional Information
2	**(a) (i)**	Acrylic, Hips, ABS, PVC, Polystyrene, Polycarbonate	**1**	Do not accept thermoplastic Accept trade names such as perspex, plexiglass
	(a) **(ii)**	Easy to work, comes in a range of colours, self finished surfaces, ability to be bent 2 x 1 for **different** points	**1** **1**	Do not accept durable, tough, sturdy Do not reward readily available Do not reward easy to drill
	(b)	Easier / Easier to hold in position. Less risk of accident(safer)to operator/less risk of damage to work piece /safer to work with, no need for packing desk tidy to avoid potential cracking, less chance of cracking acrylic, faster production by this method. Drill may damage another part of work piece. Generally more accurate. 2 x 1 for **different** points	**1** **1**	When folded there is more chance of the plastic cracking at the point of drilling and at the bends
	(c)	Batch production.	**1**	If more than one circle no marks can be awarded
	(d)	**the pens and pencils do not slide around or fall out of the desk tidy** 0-1 for **m**ethod 0-1 **d**etails **it stores paper clips** 0-1 for **m**ethod 0-1 **d**etails	**4**	**Sliding around** If 2 marks for method no annotation, if 1 mark indicate with tick. If solution is based on drilled holes they must be "blind", or equivalent, for 2 marks. Hole on its own 1 mark **Paper clips:** if 2 marks for method no annotation, if 1 mark indicate with tick
3	**(a)**	Butt joint.	**1**	Reward dowel or biscuit
	(b)	Polyvinyl-acetate (PVA). Casein (Cascamite/extramite), synthetic resin (Aerolite), polyurethane (Gorilla glue)	**1**	Not "wood glue", glue gun, superglue Accept "aliphatic" adhesive

Ques	Part	Responses	Mark	Additional Information
	(c)		**3**	Tick all correct responses in materials box. Responses that include aluminium or centre lathe turning are **not** rewarded. Do not reward multiple links i.e. a double link nullifies that response to this question. Vacuum forming not suitable for this product (drawer knob).
	(d)	Suitable methods shown. Will it work and how well will it work? • is able to slide in and out; = 0-1 for **m**ethod 0-1 **d**etails • does not go too far inside the cabinet. = 0-1 for **m**ethod 0-1 **d**etails	**4**	Putting a back in the carcase could act as a stop= 1 mark, extra detail needed for 2 marks
	(e)	Plastic coating splits, wood chippings splits (chips), difficulty screwing into material, special screws required, plastic coat damages easily, 15mm is thin – screw too long, screw heads need hiding / covering, lipping needed, edging required, untidy corners because of materials. Any valid point = 1 mark	**1**	

This is an overlap question with the higher tier Q 1.
Based on Industrial practices including CAD/CAM and/or effects of D&T in society.

Ques	Part	Responses	Mark	Additional Information
4	(a)	Reference to CAD, Internet research, virtual (concept) modelling, presentation of ideas to client, calculations of quantities of materials needed / sizes, simulations / testing. CAD provides virtual image for early 3D evaluation. Design and making can take place at different facilities, total compatibility of manufacturing processes to product. 2 x 1 for **different** reasons Do **not** reward reference to CAM alone it is a CAD question	**1** **1**	
	(b)	WWW for selling / promotion, creation of a Web page / pop-ups etc., Researching clients needs and other companies pricing.	**1** **1**	**Not researching existing products / other products, materials etc.** **Marketing is a <u>different</u> stage from designing.**
	(c)	Ability to charge more, easier to transport, reduction in transport costs, easier to store, less storage space needed, no need to assemble, less time taken to produce, lower assembly costs, more easily palletised, easier packaging, smaller packaging, less quality control checks required 2 x 1 for **different** points	**1** **1**	Time equals money unless extra qualification given. Accept packed/transported easily.
	(d)	No need to assemble, knowledge that product is correct / correctly assembled, saves time, no risk of failure when assembling, perception of higher quality product, status / image related to product, ready for immediate use 2 x 1 for **different** points	**1** **1**	Do not reward reference to faulty goods/components. Fully assembled products might need handles added etc. but still means consumer does less work. Some consumers/users cannot assemble it themselves.

Ques	Part	Responses	Mark	Additional Information
	(e)	Monitoring Up to customer standards / Up to a set quality Test product for quality Matches specification / fits need or use of product Meets standards / safety standards Test products for quality / nothing broken / damaged / unfinished Performance of product Up to set quality Regular sampling / samples Correct with no faults / mistakes	**2**	Checking regularly implies sampling Look for **testing/checking/monitoring** for first mark

This is an overlap question with the higher tier question 2
This has pre release material and so candidate should respond well

Ques	Part	Responses	Mark	Additional Information
5	**(a)**	Chuck, keyless chuck	**1**	Do not accept knurling
	(b)	Part **B** is a depth stop - the mark is for the explanation Device for stopping drill going to far /restricting drilling depth. Adjustable rod /bar which "stops" against the work piece (wall) to restrict depth of hole. Limits/measures the depth of the hole being drilled.	**1**	
	(c)	Balanced weight, handles rounded for comfort, lip on front handle to stop hand sliding off, trigger rounded / easy to reach, horn at back to cup hand, lip at bottom of handle to avoid slippage, knurled (or equivalent) on chuck for grip when tightening, visual indication on switching, location for chuck key within easy reach, Any one = 1 mark	**1**	Do not accept handle/handle at bottom (component part) unless reference is made to ergonomic features. Accept pistol grip.

Ques	Part	Responses	Mark	Additional Information
	(d)	Electric / heat insulation, lightweight, can be coloured to indicate different parts of drill, impact resistant so does not dent like metal, safety from shock, warm to the touch, does not get as hot as metal, comfortable to hold / use, complex shapes can be produced, pre coloured so colour does not scratch / rub / wear off, less fabrication required in assembly so lower costs, better integral strength due to few component parts. 2 x 1 for **different** points	**1** **1**	Do not reward easy to clean/reference to less vibration transmitted/reference to vacuum forming If safer stated details required Do not reward durable, cheaper, safer.
	(e)	Unrestricted range, use in remote locations, safer because of the lack of high voltage / cable / mains electricity. Easier to use as no cable in the way/trip hazard. Easier to transport / store because of lack of cable. Portability, lighter in weight. Reward "can be used in schools as it is not mains voltage" 2 x 1 for **different** points	**1** **1**	Accept portable as a one word answer
	(f)	**One mark for feature** Hammer drilling, laser level, reverse operation, slow speeds for screw driving, torque setting, automatic clutch, automatic cut out for over load, battery level indication, "spirit" level indication, magnetic drill bit / screwdriver bit holder, cord location for chuck, keyless chuck, plastic/magnet clip" to hold drill / screwdriver bit, for starting drilling, automatic speed increase, trigger / trigger lock/speed control/soft start, ventilation/grill, handle **Function: Additional 0-2 for details / points made / reasoning.**	**1** **2**	**If feature is either chuck or depth stop no marks can be awarded.** **If <u>two</u> features are given both must be marked but only the best mark counts** There is no power "button" on these drills. Motor/cord/casing/gears are not features If a **function** is given as a **feature** reward accordingly. Accept Chuck key holder (shown on Fig.9)

1956/04 Paper 4 (Higher)

Ques	Part	Responses	Mark	Additional Information
1	(a)	Reference to CAD, Internet research, virtual (concept) modelling, presentation of ideas to client, calculations of quantities of materials needed / sizes, simulations / testing. CAD provides virtual image for early 3D evaluation. Design and making can take place at different facilities, total compatibility of manufacturing processes to product. 2 x 1 for **different** reasons Do **not** reward reference to CAM alone it is a CAD question	**1** **1**	
	(b)	WWW for selling / promotion, creation of a Web page / pop-ups etc., Researching clients needs and other companies pricing.	**1** **1**	**Not researching existing products / other products, materials etc.** **Marketing is a <u>different</u> stage from designing.**
	(c)	Ability to charge more, easier to transport, reduction in transport costs, easier to store, less storage space needed, no need to assemble, less time taken to produce, lower assembly costs, more easily palletised, lower packaging costs, easier packaging, less quality control checks required 2 x 1 for **different** points	**1** **1**	Time equals money unless extra qualification given. Accept packed/transported easily.
	(d)	No need to assemble, knowledge that product is correct / correctly assembled, saves time, no risk of failure when assembling, perception of higher quality product, status / image related to product, ready for immediate use 2 x 1 for **different** points	**1** **1**	Do not reward reference to faulty goods/components. Fully assembled products might need handles added etc. but still means consumer does less work. Some consumers/users cannot assemble it themselves.

Ques	Part	Responses	Mark	Additional Information
	(e)	Monitoring: Up to customer standards Up to a set quality Test product for quality Matches specification / fits need or use of product Meets standards / safety standards Test products for quality / nothing broken / damaged / unfinished Performance of product Up to set quality Regular sampling / samples Correct with no faults / mistakes	**2**	Checking regularly implies sampling Look for **testing/checking/monitoring** for first mark
2	**(a)**	Chuck, keyless chuck	**1**	Do not accept knurling
	(b)	Part **B** is a depth stop - the mark is for the explanation Device for stopping drill going to far /restricting drilling depth. Adjustable rod /bar which "stops" against the work piece (wall) to restrict depth of hole. Limits/measures the depth of the hole being drilled.	**1**	
	(c)	Balanced weight, handles rounded for comfort, lip on front handle to stop hand sliding off, trigger rounded / easy to reach, horn at back to cup hand, lip at bottom of handle to avoid slippage, knurled (or equivalent) on chuck for grip when tightening, visual indication on switching, location for chuck key within easy reach, Any one = 1 mark	**1**	Do not accept handle/handle at bottom (component part) unless reference is made to ergonomic features. Accept pistol grip.

Ques	Part	Responses	Mark	Additional Information
	(d)	Electric insulation, lightweight, can be coloured to indicate different parts of drill, impact resistant so does not dent like metal, safety from shock, warm to the touch, does not get as hot as metal, comfortable to hold / use, complex shapes can be produced, pre coloured so colour does not scratch / rub / wear off, less fabrication required in assembly so lower costs, better integral strength due to few component parts. 2 x 1 for **different** points	**1** **1**	Do not reward easy to clean/reference to less vibration transmitted/reference to vacuum forming If safer stated details required.
	(e)	Unrestricted range, use in remote locations, safer because of the lack of high voltage / cable / mains electricity. Easier to use as no cable in the way/trip hazard. Easier to transport / store because of lack of cable. Portability, lighter in weight. Reward "can be used in schools as it is not mains voltage" 2 x 1 for **different** points	**1** **1**	Accept portable as a one word answer
	(f)	**One mark for feature** Hammer drilling, laser level, reverse operation, slow speeds for screw driving, torque setting, automatic clutch, automatic cut out for over load, battery level indication, "spirit" level indication, magnetic drill bit / screwdriver bit holder, cord location for chuck, keyless chuck, plastic/magnet clip" to hold drill / screwdriver bit, for starting drilling, automatic speed increase, trigger / trigger lock/speed control/soft start, ventilation/grill, handle **Function: Additional 0-2 for details / points made / reasoning.**	**1** **2**	**If feature is either chuck or depth stop no marks can be awarded.** **If <u>two</u> features are given both must be marked but only the best mark counts** There is no power "button" on these drills. Motor/cord/casing/gears are not features If a **function** is given as a **feature** reward accordingly. Accept Chuck key holder (shown on Fig.9)

Ques	Part	Responses	Mark	Additional Information
3	(a)	**The arm is one piece of white acrylic clearly stated**. Doubling the thickness with a second piece of acrylic is worth 1 mark max but will need details of method of adhesion clearly stating. Tensol adhesive or equivalent. Accept super glue. Masked and scratched with glass paper / wet and dry and coloured with crayon / acrylic stain/paint/dye Use of Camm 1 to produce PVC stick on band. 0-2 for appropriate detail	**2**	
	(b)	**Will it pivot:** Is some form of pivot shown = 1 mark **Pivot shown:** stud, bolt, screw, dowel (assumed metal) **Retention:** Either the "pivot to the rod <u>or</u> the arms to the "pivot" = 1 mark If a washer is shown this could also gain the second mark to rounded section of rod and flat section of arm =1	**2**	Do not look for specific reference to sizes
	(c)	Ø4 mm hole (1) mark Means of stopping rotation (1) mark	**2**	If adhesive used, accept : Araldite, Superglue, Loctite Do not accept PVA
	(d)	Is there a pivot (1) mark Is there a connection above or below pivot (1) mark Is movement connected to signal arm (1) mark Will it work? (1) mark	**4**	

<table>
<tr><th>Ques</th><th>Part</th><th>Responses</th><th>Mark</th><th>Additional Information</th></tr>
<tr><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>4</td><td>(a)</td><td>Valid risk control and/or clear understanding shown for each related point (must be related to the Process/Activity). 2 x 2 marks for different situations
Do not reward generic safety i.e. wear an apron.</td><td></td><td></td></tr>
<tr><td></td><td></td><td colspan="3">
<table>
<tr><th>Process/Activity</th><th>Hazard</th><th>Risk Assessment</th><th>Control measure</th></tr>
<tr><td>Drilling the axle holes in the sides of the toy</td><td>Puncture / cut injury
Dust. inhalation,
Electric shock – faulty equipment
Slash / bruise injury from spinning work piece,
Eye injury from swarf / drill waste</td><td>Medium</td><td>Clamping work correctly
Mask warn
PAT testing
Clamping work correctly
Wearing protective mask / goggles</td></tr>
<tr><td>Using a power router to make the slots in the sides of the toy</td><td>Electric shock - cut cable / faulty equipment

Slash / bruise injury from spinning work piece,
Eye injury from swarf / router waste

Cut injury from router blade</td><td>High</td><td>PAT testing
Correctly holding equipment and position of cable / router / work piece (over shoulder?)

Clamping work correctly

Wearing protective mask / goggles

Training on equipment. Holding machine and work piece in correct manner, correct rotation of cutting tool</td></tr>
</table>
</td></tr>
<tr><td></td><td></td><td></td><td>2

2</td><td>Hazard must be correct for control measure to be awarded.
No repeat of hazard or control measure.
“Injury” is not sufficient for reward.
If action suggested is created by poor operator practice do not reward.</td></tr>
</table>

Ques	Part	Responses	Mark	Additional Information
	(b)	**Height adjustable:** 0 to 2 : method (1) appropriate detail (1) **Securely fixed:** 0 to 2 : method, (1) appropriate detail (1) **Materials = (1)** **Fittings = (1)**	**6**	Where acrylic is considered as a material this is seen as inappropriate. We are not rewarding inappropriate materials. Glued into hole not given, even if epoxy resin stated Accept pivoted even though possibly unsafe as a pushing action.
5	**a**	Appropriate weight related to purpose, appropriate cost (not cheap), availability – stock sizes, strength to weight ratio, durable/hard wearing, resistance to damage i.e. cars bumping the sign. 2 x 1 mark	**2**	Easy to bend only if qualified
	b	The two halves of the tubular frame will twist when opened and closed. Also remember the acrylic is only 3mm thick and is brittle. Attachment to the fame = 1 mark Hanging vertically = 1 mark --- if attached rigidly to **both** parts of the frame **ZERO** marks	**2**	**Use of string not rewarded (not a resistant material).** Cable ties, wire and chain accepted.
	c	**<u>0-2 marks</u> Is there some method of the two halves of the frame being joined.** **0-2 marks Will the tubes (halves of the frame) rotate.** **0-2 method of stopping the frame** **The better, more detail and success will gain the higher marks**	**6**	Ticks to be awarded against the stem of the question: • Joined together • Allow opening • Stop at a set point 1 tick for method 2nd marks for details **Do not worry about a specific angle – look for the movement being "stopped"**

Grade Thresholds

General Certificate of Secondary Education
Design and Technology (Resistant Materials) 1956
June 2008 Examination Series

Component Threshold Marks

Component	Max Mark	A*	A	B	C	D	E	F	G
01	50				25	21	17	14	11
02	50		26	21	16	11			
03	50				31	27	23	19	15
04	50		32	27	22	17			
05	105		81	69	57	46	35	25	15

Specification Options

Foundation Tier

	Max Mark	A*	A	B	C	D	E	F	G
Overall Threshold Marks	175				94	79	64	50	36
Percentage in Grade					27	25.6	21.4	13.4	7
Cumulative Percentage in Grade					27	52.7	74.1	87.5	94.6

The total entry for the examination was 11498

Higher Tier

	Max Mark	A*	A	B	C	D	E	F	G
Overall Threshold Marks	175	135	118	101	85	66	56		
Percentage in Grade		10.5	21.8	30.4	23	11	1.8		
Cumulative Percentage in Grade		10.5	32.3	62.7	85.7	96.8	98.6		

The total entry for the examination was 12517

Overall

	A*	A	B	C	D	E	F	G
Percentage in Grade	5.5	11.4	15.9	24.9	18	11.1	6.4	3.4
Cumulative Percentage in Grade	5.5	16.9	32.8	57.7	75.7	86.9	93.3	96.7

The total entry for the examination was 24015

Statistics are correct at the time of publication.

OCR (Oxford Cambridge and RSA Examinations)
1 Hills Road
Cambridge
CB1 2EU

OCR Customer Contact Centre

14 – 19 Qualifications (General)
Telephone: 01223 553998
Facsimile: 01223 552627
Email: general.qualifications@ocr.org.uk

www.ocr.org.uk

For staff training purposes and as part of our quality assurance programme your call may be recorded or monitored

Oxford Cambridge and RSA Examinations
is a Company Limited by Guarantee
Registered in England
Registered Office; 1 Hills Road, Cambridge, CB1 2EU
Registered Company Number: 3484466
OCR is an exempt Charity

OCR (Oxford Cambridge and RSA Examinations)
Head office
Telephone: 01223 552552
Facsimile: 01223 552553