

Mark Scheme (Results)

Summer 2017

Pearson Edexcel GCSE In Design and Technology (5TT02) Paper 1 Textiles Technology



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General Marking Guidance

• All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.

• Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.

• Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.

• There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.

• All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.

• Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.

• When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.

• Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.

Question Number	Answer	Mark
1	A	(1)
Question Number	Answer	Mark
2	A	(1)
Question Number	Answer	Mark
3	С	(1)
Question Number	Answer	Mark
4	A	(1)
Question Number	Answer	Mark
5	В	(1)
Question Number	Answer	Mark
6	A	(1)
Question Number	Answer	Mark
7	С	(1)
Question Number	Answer	Mark
8	С	(1)
Question Number	Answer	Mark
9	D	(1)
Question Number	Answer	Mark
10	С	(1)

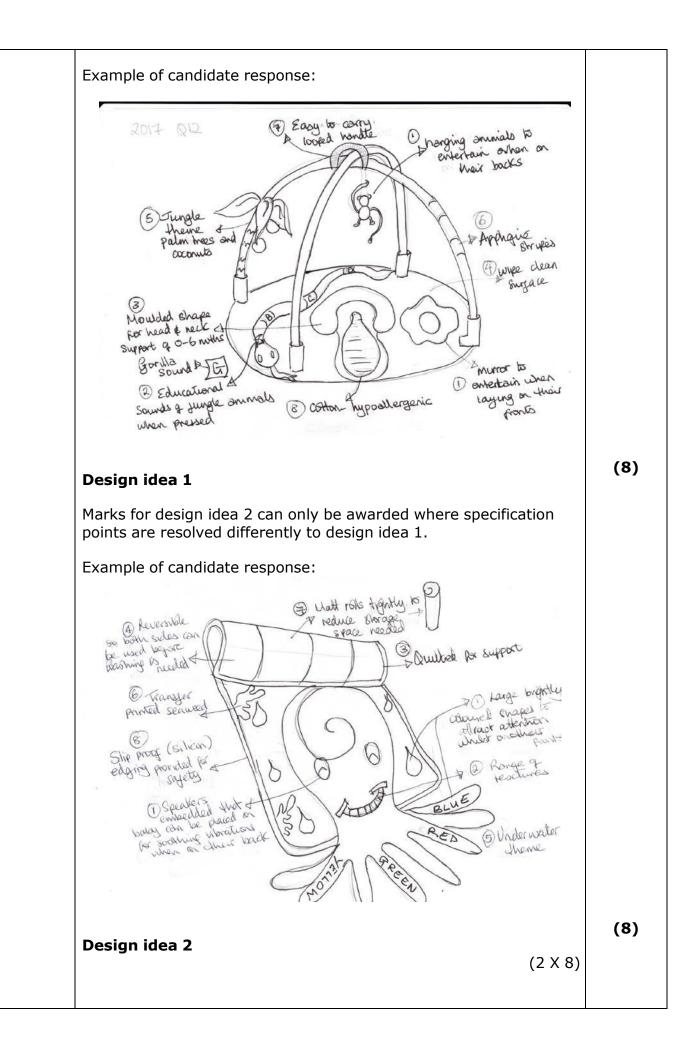
Question	Answer		Mark
Number 11 (a)			
(*)	NameIroning boardNo to any job an iron could do onits own. E.g. get rid of / iron outcreases	Use (a)(i) Iron/ press/ lay clothes/ products on a flat surface. Firm structure to press onto. Used to stretch/ lay out clothes ready for	
		ironing. Shape edges used for moulding. Do not accept ironing on its own.	
	(a)(ii) Silk screen/ screen printer/printing Accept squeegee	Used to print a design through a thin plastic sheet/mesh with cut out design or plastic coating where a pigment can pass through	
	Bobbin	(a)(iii) Used to hold/ store/ keep thread. Stops thread tangling. Produce lower thread for the sewing machine. One of the threads needed for secure stitching	
	(a)(iv) Foot control/ foot pedal/ sewing machine pedal/ pedal Do not accept presser foot/foot presser.	Used to adjust speed of sewing machine	(4)
		(4 x 1)	
Question Number	Answer		Mark
11 (b) (i)	 Any one reason from the following: (Plain) woven cotton/ identical on both sides (1) as texture could distract from possible construction issues/ as structure is firm it can show possible construction issues / non stretchy/ stable/ easy to work with/ increased use of fabric/ less waste layplanning (1) *Comes in different weights (1) so can suit a range of designs/ test performance/ consider aesthetic or performance requirements (1) Readily available (1) so easy to source (1) Unbleached/ not fully processed cotton (1) so it will be suitable for a range of skin types/ hypoallergenic (1) Unprinted/ plain/ light cream colour/ easy to manipulate (1) so can be drawn on easily, communicating design changes back to designer/ pattern cutter/ see construction lines clearly for adjusting/ test colour / decoration is appropriate/ e.g. crease/fold/gather (1) *Fabric is strong/ durable (1) as it can withstand a lot of changes (1) 		
	Allow for any order. Not asi for mix & match answers w	(1 X 2) king about sustainable issues. Allow here appropriate.	(2)

Question Number	Answer	Mark
11 (b) (ii)	Any one reason from the following:	
	 Lightweight (1) so makes it easier to test draping/ fall of fabric/ shape (1) Imitates softer/lighter/sheer fabric (1) so will give a better view of outcome/ so designers/ clients are able to understand how modest or risky the final product might be (1) Very fine/ thin/ flexible (1) so it is easier to manipulate into intricate design ideas (1) Like calico it is (allow any appropriate MS answer from b(i) (1) so that (allow any suitable response from b(i)).* Do not refer to these bullet points Accept cheap when clarified e.g. similar characteristics to calico. (1 X 2) 	(2)
Question Number	Answer	Mark
11 (b) (iii)	 Any two advantages from the following: Reflects light (1) Dries quickly (1) Absorbs moisture/ comfortable/ cool/ breathable/ easily dyed- strong colours (1) Good conductor/ doesn't build up static electricity (1) Low warmth (1) Drapes well (1) Soft handle (1) It is washable (1) Low piling (1) No to environmental issues. (2 X 1) 	(2)
Questien		
Question Number	Answer	Mark
11 (b) (iv)	 Any one disadvantage from the following: Weaker when wet/ not durable (1) as it can be damaged if twisted when laundered (1) Chemical finish is needed for safety/ flame proofing (1) as viscose burns easily (1) Can be damaged by detergent (1) expensive cleaning method might be necessary/ delicate detergent is needed (1) Creases easily (1) so extra time/effort required for good presentation (1) (1 X 2) 	(2)
Question Number	Answer	Mark
11 (c) (i)	Any one technique from the following:	
	 Snipped/ slits/ notches (1) Small, evenly cut out triangles (1) Cuts made up to the stitch line (1) Trim back seam allowance/ 5mm seam allowance (1) Under/ staystitch (1) (1 X 1) 	(1)
	Any minimal trimmed seam allowance amount allowed.	\ - <i>)</i>

To To Iay Alle eve Str risl ECF : if (o	cription from the following: reduce bulk (1) so a smooth curve is formed (1) reduce excess (1) so a flatter seam is formed/ rs flat, sits (1) ows movement (1) as it will release tension enly around the curve (1) rengthens the seam allowance (1) reducing the k of fraying (1) c)(i) is incorrect, but (c)(ii) is correct in relation ect (c)(i) credit response in (ii)	
 To lay Allo evo Str risl ECF : if (or 	reduce excess (1) so a flatter seam is formed/ vs flat, sits (1) ows movement (1) as it will release tension enly around the curve (1) rengthens the seam allowance (1) reducing the k of fraying (1) c)(i) is incorrect, but (c)(ii) is correct in relation	
		(-)
Question Answer	(1 X 2)	(2) Mark
Number		HUIK
Quality of a Second Sec	the collar sits down flat against the shoulders/ es not stand rigid (1) equately reinforces shape (1) check t/ accurately measured/ position interfacing centrally ition the edges don't overlap beyond fabrics edge (1) the machinist can follow the correct seam owance line/ so it leaves room for the seam owance/ is not too large (1) check take sure interface is firmly fused/ placed onto the ong side (1) tion adhesive is not left on the surface of iron/ ironing ard (1) there are no wrinkles or blisters in the finished collar ges of adhesive do not peel/lift up (1) check - manufacture m away/ grade seam allowance/ check correct e & shape (1)	(4)

Question	Answer	Mark
Number 12	Design idea 1	
	Candidates may answer any specification point in either graphical form or by annotation.	
Visual/	No marks are awarded for the quality of graphical communication.	
Annotation	1. Suitable for babies lying on their front and back (1): Above head & on mat, have a decorative floor and overhead entertainment, bright colours, large shapes, accessible toys, easy to access surface, adequate size to fit growing baby, plastic links to add new toys to, warm/ cool fabrics/fibres/ element (gels/ thermochromic dyes), comforting fabric, teething toys/ stimulating vibrations/ sounds.	
Visual/ Annotation Annotation	2. Be educational (1): e.g. books, numbers, letters, animals, sounds, textures, integrated electronics, interactive, encourage recognition and hand to eye coordination, vibrating, mirror, repetition, puzzles, links to add more advanced/ complex options/ variety/ range of functions. (Can be a justification of 5). No straight repetition.	
	 Support the baby's body (1): e.g. padded, quilted, moulded shape, foam, neck support, placement of supported edge. 	
Visual Annotation	4. Be easy to care for (1): e.g. reversible, wipe clean, washable and easy to iron. Suitable fabrics, e.g. PVC, Teflon coating, cotton/ polyester, easy to wash fabrics that can be washed at low temperatures, cotton that can be tumble-dried, fabrics that require less/ no ironing, woven & waterproof nylon (ripstop), removable parts/ cover. Patterned not dark colours.	
Annotation	 5. Have a visually recognisable theme (1): e.g. any theme that can be seen in the design. Reversible responses with 5 but not exactly the same statement. 	
Annotation	 Include decorative techniques (1): e.g. appliqué, embroidery, printing methods, e.g. heat transfer, screen printing, trims and frills. 	
	7. Be easy to carry or store (1): e.g. loops, not bulky, so easy to fold/ roll, flattened, secured using component (must be clarified 'how' or 'why' it functions, cannot be only visual), detachable parts.	

8. Be safe to use (1): e.g. support/ securely contained in padding, soft fabric (must be named) – velvet, felt – hypoallergenic – cotton, smooth, secure components, no places where fingers, etc. can get caught, no toxic dyes, able to lay flat on a surface, no loose cords – strangulation, no bags – suffocation, slip proof bottom, no small pieces – choking hazard. No scratchy, sharp or rough components/ non- flammable – linked to coating.
Some bullet points have easily interchangeable/very similar points. Examiner to indicate number of the bullet point credited in design. Credit can be given only once and in one place: e.g. 'Be educational' and 'visible the me'. Swapped location on something credited on 1st product is not permissible for 2nd.



Question Number	Answer	Mark
13 (a) (i)	One suitable fastening and linked justification from:	
	Fastenings	
	 Velcro (1) Push clip buckle (1) Poppers/Press stud/ press fastener (1) Magnetic stud (1) Drawstring - with bow/adjustable toggle (1) Large buttons (1) 	
	Justifications	
	 Independent dressing and undressing (1) Easily adjustable (1) Easy to open /close (1) Safe as skin/fabric won't catch (1) 	
	Accept any logical justification/combination of above points (2 X 1)	(2)
Question Number	Answer	Mark
13 (a) (ii)	One unsuitable fastening and linked justification from:	
	Fastenings	
	 (Small) buttons (1) Hooks and eyes (1) Corded tie belt (1) Drawstring/ eyelets (1) Buckle (1) 	
	Justifications	
	 Could rub against the skin (1) Not very flexible (1) Fiddly/ awkward/ tricky to undo in a rush/ fine motor skills required (1) Accuracy will be needed (1) Modesty compromised (1) Time consuming (1) 	
	Accept any logical justification/combination of above points. No to changing the position of the fastening. E.g. to side/back (2 X 1)	(2)

Question Number	Answer	Mark
13 (b)	Notes and sketches:	
	Key words: • Casing • Gathered • Reducing bulk • Straight stitch	
	Forming casing by:	
	 Measuring elastic (width), Neatening raw edge – pressing under, overlocking, zigzagging stitch, pinking shears Top stitching to main fabric round entire waistband, leaving a gap for elastic insertion Allowing for seam on one side of casing then invisible finishing Create opening in casing (1) 	
	 Insert elastic: Feed through casing using safety pin or inserting tool Fold casing around elastic 	
	 Finishing: Overlap ends of elastic & sew securely Top stitch again, closing gap left at the beginning of top stitching 	
	 (3 X 1) Quality control: e.g.'s even gathering, elastic is long enough & not under/over stretched Do not catch elastic when stitching Do not twist elastic Make sure casing width is adequate to let the elastic pass freely through Make sure waistband width is even along length Accept any appropriate examples of QC (1 X 1) 	
	Measure elastic width ELASTIC Double the width of tabric t of Interior Double the width of tabric t of Inter more Inter more Inter elastic Inter elastic Re feed elastic in user sayety pin (dragram would - Casing to Swaight. Feel as you push driverigh to ensure it has not trunsted Remare & re-insert if it does.	(4)

Question Number	Answer	Mark
-	 One description from the following: Smooth, silky fabric is usually used (1) as it increases quality/ comfort/ stops the outer fabric sticking to the user/ makes the trousers easier to slip on/ hang better (1) Warmer or cooler fabric can be selected (1) to suit weather conditions/ to suit performance requirements (1) Trousers last longer/ durable/ extends life/ creates a barrier 	
	 (1) as lining reduces friction between skin and fabric/ reduces wear and tear to outer shell/ helps prevent fabric splitting at the seams (1) Better concealment (1) ensures modesty (1) (1 X 2) No to 'comfortable' unless specified 'how' or 'why'. Answer can be taken in any order. No to stretch as both fabrics would have to be stated or below the knee benefits as it is not a benefit of the lining. Watch out for 2 separate points as opposed to 1 justified one. 	(2)

Question Number	Answer		Mark
*13 (d)	Discussion to address the fo Form, function and user requ	-	
	Product A	Product B	_
	Form &	Function	
	Longer length to cover all the way down to ankles	However, the shorter length allows it to ride up when sitting	
	Vertical pockets at the front so articles do not fall out	Whereas this has pockets at the back & front with rivets which could press into skin when leaning back	
	Elasticated at the sides for a snug fit	Comparatively, the <u>belted</u> waist and central belt loop can cause abrasion and requires an additional component (belt) for fitting	
	High back so lower back stays covered/ no gap	Whereas hipsters expose a lot of flesh and lack modesty	
	between trousers & top	In comparison, the high fronted waistband can make the excess	
	Lower front at waist to make bending/ folding movement more	fabric uncomfortable on the abdomen	(6)
	comfortable/ reduce bunching up	While the seam allowance is overlocked together which can rub, chafe and irritate the	
	Flat back seams to lessen rubbing	skin	

	User requirements	
fit behind reduce I sitting f time. Lo the botto	cut provides -close d the knees to pulk when or a long ose fit around om and top of o there is space	Whereas the tight fitted fabric from waist to thighs which makes them restrictive. Also it is flared from knees so the fabric could get caught in wheels of chair
Knitted c	onstruction as e easier to pull	However woven fabric has no stretch and may rip or tear easily or hinder circulation These acrylic fibres can cause
is machin	abric – as it ne washable, ile and will ntain a	sweatiness and itchiness rendering the wearer uncomfortable & clammy
stable bo temperat	ody ture	Central back belt loop – can cause abrasion along the back when sitting & pressed against
are an a i	t loops at the front id the pulling on of the trousers	Whereas short zipper at the
opening	ning of the fly to make access ig) easier	front restricts access and can be painful if skin gets caught. Could rub against the skin & I also not very flexible

Comfort must be backed up with other qualifying statement.

Level	Mark	Descriptor
	0	No rewardable material
Level 1	1-2	Candidate identifies the area(s) of comparison with no development OR identifies and develops one area. Shows limited understanding of the comparison. Writing communicates ideas using everyday language but the response lacks clarity and organisation. The candidate spells, punctuates and uses the rules of grammar with limited accuracy.
Level 2	3-4	Candidate identifies some areas of comparison with associated developments showing some understanding of the comparison. Writing communicates ideas using D&T terms accurately and showing some direction and control in the organising of material. The candidate uses some of the rules of grammar appropriately and spells and punctuates with some accuracy, although some spelling errors may still be found.
Level 3	5-6	Candidate identifies a range of areas of comparison with associated developments showing a detailed understanding of the comparison. Writing communicates ideas effectively, using a range of appropriately selected D&T terms and organising information clearly and coherently. The candidate spells, punctuates and uses the rules of grammar with considerable accuracy.

Question	Answer		
Number 14 (a) (i)	State two from the following:		
14 (a) (i)	State two nom the following.		
	 Splashing/ contact with skin/ eyes resulting in 		
	irritation/ ingestion (1)		
	 Inhalation of fumes/ vapour resulting in 		
	respiratory/ breathing problems (1)		
	• Slips and falls as a result of spillage on the floor (1)		
	 Liquids near electrical products causing electrocution (1) Dense so (an eiling of even electric due to calculation c2) 		
	 Damage/spoiling of own clothing/ due to splashing? Effluents e.g. waste water/ wildlife (1) 		
	(2 X 1)	(2)	
Question	Answer	Mark	
Number			
14 (a) (ii)	One description from the following:		
	Cover eyes with goggles/ face mask/ wear gloves/ overalls		
	(1) to safeguard eye injury and stop skin irritation/		
	 staining poisoning or other harmful reactions (1) Provide COSSH data/ information (1) to warn 		
	people of potential hazards (1)		
	 Put out signs and clear up spills straight away (1) to 		
	inform of area's status (which avoids slipping) (1)		
	 Have designated areas (locked storage) for liquids 		
	away from electrical equipment (1) so that they are		
	not misused		
	or cause electrocution/ so untrained staff cannot		
	access dangerous chemicals (1)		
	 Enzymes/ water treatment (1) used to clean water 	(2)	
	before let out into waterways (1) Any order can be taken. (1 X 2)	(2)	
	Any order can be taken. $(1 \land 2)$		
Question	Answer	Mark	
Number	One evaluation from the following:		
14 (b)	One explanation from the following:		
	 It can shrink (1) which changes the overall size 		
	of the garment (1)		
	 Removing a finish ready for printing (1) to 		
	enable absorption of pigment (1)		
	To get rid of any bleeding/ more malleable/ colour running		
	(1) to minimise the transference of excess dye on to		
	other products (1)		
	No to dirt/ seeds – all fabric should be cleaned before using –	(2)	
	scoured at fibre stage. No to Insecticides safer for wearer/delicate skin (1 X 2)	(2)	
	wearer/delicate skin (1 X 2)		
Question	Answer	Mark	
Number	Allowel	Mark	
14 (c)	One disadvantage given from the following:		
~ /			
	• More fabric is used/ more fabric wastage. (1)		
	 Directional design, careful positioning need. (1) 		
	 Size of repeat is large so matching (e.g. seams) is more difficult/matching seams across the 		
	is more difficult/ matching seams across the chest. (1)	(1)	
	(1 X 1)		

Question Number	Answer	Mark
14 (d) (i)	One explanation from the following:	
	 Spacing needs to be even and matched with button planning (1) to avoid mismatching of buttons to buttonholes. (1) Size and shape templated (1) so that holes are uniform. (1) Would create buttonhole too large or too small (1) therefore the button would not fit in or would slip out (1) (1 X 2) 	(2)
Question Number	Answer	Mark
14 (d) (ii)	One description from the following:	
	 Machinery can be programmed / stitch type/ position/ tension (1), then will carry out repetitive operations/ to set quantities. (1) Less human error/ time efficient/ quicker than humans, (1) allowing for more products to pass QC (1) Products need to be identical (1) as this will produce consistently accurate/ consistent results (1) Accurate results (1) due to holding/positioning of shirt in frames/jigs. (1) No to quick/ fast without clear linked qualification. Remember 	(2)
	this is about button holes not buttons. (1 X 2)	Maria
Question Number	Answer	Mark
14 (d) (iii)	 Explanation from the following: Automated storage and retrieval systems (ASRS)/ automated machinery link manufacturing cells together (1) reducing manual handling (stock control)/ labour/ wastage (1) Allows vertical storage (1) which reduces the footprint of the factory floor (1) Allows the use of Just-in-time (JIT) (1) whilst offering variables with one-off/ bespoke specifications (1) 	(2)

Question Number	Answer	Mark
*14 (e) Reduce Reuse Recycle Repair Refuse	 Any issues discussed from the following: Cleaner technology decreases effluents released in the environment, e.g. using computerised boilers to clean the emissions before release Applying less chemical finishes to fabric finishes & fibre production reduces toxic emissions at the manufacturing plants where the chemical finishes are produced Reducing carbon emissions by less burning of the fossil fuels which contribute to global warming Less manufacturing of synthetic fibres, more emphasis on producing manmade fibres, less reliant on non-sustainable minerals, switching to alternative sources of energy Choice of fibres that decompose without releasing heavy metals & other additives into soil & groundwater decreases effects on plants, humans and atmosphere Using biomass friendly plants like jute will absorb carbon from the atmosphere, reducing global warming Use of alternative energies to power the production facility will result in the reduction of the need to generate electrical energy <i>GR's points to be considered only if there is a clear link with</i> <i>emissions beyond the basic, otherwise it stays in band 1.</i> 	(6)

Level	Mark	Descriptor
	0	No rewardable material
Level 1	1-2	Candidate identifies the issues with no development OR identifies and develops one area. Shows limited understanding of the issues. Writing communicates ideas using everyday language but the response lacks clarity and organisation. The candidate spells, punctuates and uses the rules of grammar with limited accuracy.
Level 2	3-4	Candidate identifies some issues with associated developments showing some understanding of the issues. Writing communicates ideas using D&T terms accurately and showing some direction and control in the organising of material. The candidate uses some of the rules of grammar appropriately and spells and punctuates with some accuracy, although some spelling errors may still be found.
Level 3	5-6	Candidate identifies a range of issues with associated developments showing a detailed understanding of the issues. Writing communicates ideas effectively, using a range of appropriately selected D&T terms and organising information clearly and coherently. The candidate spells, punctuates and uses the rules of grammar with considerable accuracy.

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