OCR
Oxford Cambridge and RSA

GCSE

Design and Technology: Textiles Technology

Unit **A575**: Sustainability and technical aspects of designing and making

General Certificate of Secondary Education

Mark Scheme for June 2014

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This mark scheme is 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.

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

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

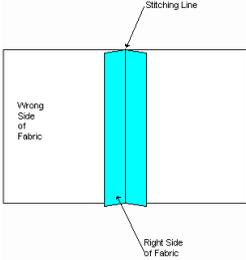These are the annotations, (including abbreviations), including those used in scoris, which are used when marking

Annotation	Meaning
BP	**Blank Page – this annotation must be used on all blank pages within an answer booklet (structured or unstructured) and on each page of an additional object where there is no candidate response.**
L1	Level 1
L2	Level 2
L3	Level 3
SEEN	Noted but no credit given
✔	Tick

MARK SCHEME

Question			Answer/Indicative content	Mark	Guidance
1			B : Polyester	1	
2			A : Bio-degradable materials	1	
3			D : Rethinking	1	
4			A : Toxic products	1	
5			A : Life cycle assessment	1	
6			Carbon Footprint	1	
7			Eco-design/eco-friendly. eco	1	Do not accept 'sustainable'
8			Repair	1	
9			Ergonomics	1	Accept various spellings as long as meaning is clear
10			Can be recycled/ made from recycled /recyclable	1	Recycle is key word
11			True	1	
12			True	1	
13			False	1	
14			True	1	
15			False	1	
16	a		**Sustainable:** • Can be produced without harm to the environment • Is natural / animal / plant source • Is renewable / won't run out / re-grows • Can be produced organically **Biodegradable** • Decomposition/ rot / breaks down naturally in soil / natural way of breaking down products • Life-cycle process • Produces useful mulch or compost / nutrients into soil • Mention of micro-organisms / bacteria / enzymes • No chemicals needed to help decomposition • Does not pollute	**4**	Maximum two marks for each one. Two marks for each area can be 1x1 for a bullet point or 2 marks for a justified explanation – e.g. decomposes naturally (1 mark)so reducing land fill (1 mark). Watch out for repeats - e.g. 'can be re-grown' is an explanation of 'won't run out' Do not credit reference to long lasting. Do not credit 'degrade'.

Question			Answer/Indicative content	Mark	Guidance
16	b		• Cheaper / free / saving money / local sourcing / use of charity shops • Individuality / uniqueness / fashion statement / creative / original / inventive • Uses unwanted materials / components / resources • Ethical issues – consumer choice / used more than once • Reduces need / use of new fabrics / components • Environmental advantages – reference to carbon footprint / less transport / CO2 / emissions /dyes / chemicals / less pollution • Energy issues – less electricity / fossil fuels • Less unwanted wastage / landfill / not throwing away materials	4	4x1 marks Do not accept repeats with the same reason for separate points. Do not accept 'helps the environment' / 'environmentally friendly' without an explanation.

16	c		**Functional details:**
			• Size, seams, finishing, name of garment recycled, functional fastening / disposal of fullness
			
			Recycled components:
			• E.g. zips, buttons, hook &eye, press stud, bias binding, lace, ribbon / pocket / beads/ sequins / piping / Velcro
			
			Decorative Techniques:
			    Any two from;
			• Decorative design / motif drawn (only allow one mark for drawn suggestions)
			• Embroidery qualified as hand or machine, quilting, patchwork, specific names of stitching
			  Applique, colour shown or named.
				6	2 x for each area= 6 marks
					
					Product used must be a garment.
					
					Recycled fastenings fall into both 'functional details' and 'recycled components'.
					
					Credit both uses if clearly annotated and shown separately.
					
					Do not credit 'tassels' if from a household product.
					
					Do not credit lace if from a household product.
					
					Do not credit 'clothing' – must be a named item.

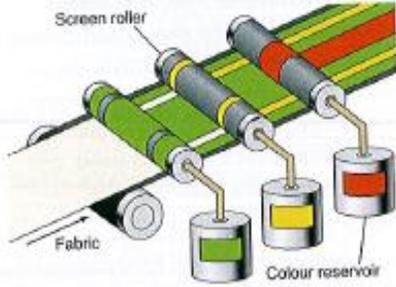| Question			Answer/Indicative content	Mark	Guidance
16	d*		**Points to consider:** • Products have been made/ produced in accordance to Fair-trade standards • Was established in 1992 own website www.fairtrade.org.uk • International/ global set standards • Reassures consumers that workers have received fair wage • Reassure consumers that working conditions are supervised • Fair price for the product • Education and trading benefits • Hours of work are supervised • Sustainability encouraged • Often made from organic/ natural sources/fibres • Products will be labelled with symbol/ CE label • Companies care about/ try to reduce carbon footprint • Polices that have 'green' issues • Non-profit making organisation • Can be a negative that the costs of the products are higher than the more mass produced products. • No child labour		**Level 3 (5-6 marks)** Thorough explanation, showing clear understanding what the logo means and what it says about the product to the consumer. Can provide clear examples of current products. Specialist terms will be used appropriately and correctly. The information will be presented in a structured format. The candidate will demonstrate the accurate use of spelling, punctuation and grammar. **Level 2 (3-4 marks)** Adequate explanation, showing an understanding of the meaning of the fair-trade logo and what it signifies says to the consumer. Candidates can give/ provide a description with two or more examples. There will be some use of specialist terms, although these may not always be used appropriately. The information will be presented for the most part in a structured format. There may be occasional errors in spelling, grammar and punctuation **Level 1 (1-2 marks)** Basic explanation, showing some understanding of the meaning of the fair-trade logo and what it signifies says to the consumer. Candidates can give/ provide a basic description with one or more examples. There will be little or no use of specialist terms. Answers may be ambiguous or disorganised or 'list like'. Errors of grammar, punctuation and spelling may be intrusive. **0 = no response worthy of credit**

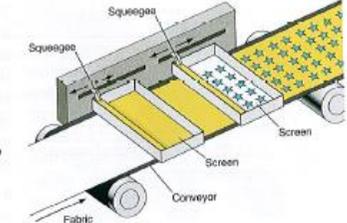| Question			Answer/Indicative content	Mark	Guidance
17	a		**Link the boxes to the correct areas on the shirt**	**5**	5x1 End of line or arrow **head must** touch the feature or point clearly to it. Descriptors that have multiple arrows must not be marked unless all arrows to same thing i.e. 2 cuffs/ all button holes etc…
17	b		**Performance characteristics** • Hardwearing/ strong/ durable/ long lasting • Washable • Dyes well / holds colour well • Absorbent • Comfortable / not irritating / non allergenic • Cool to wear / takes away heat • Woven – not stretchy	**2**	2x1 Not 'soft' or 'lightweight'. Not 'breathable' Not 'creases easily'
17	**c**	**i**		**2**	One mark for a basic sketch showng an open seam as in the diagram. One mark for labelling as in the diagram.
17	**c**	**ii**	• Over locking • Bias binding • Zig zag stitch • Turn edges and stitch down- straight or zigzag stitch	**2**	**Do not accept blanket stitch or hand sewing** Not pinking shears or hemming.

Question			Answer/Indicative content	Mark	Guidance
17	d	i	• Easy to repeat with accuracy / reliability / identical • Speed of machinery saves money/ makes it easier to produce more • Quick and easy to download from computer • easy to re programme changes or re run of images / modify • efficient / quicker / saves time • accurate / better quality / made to perfection / professional / precise • Good quality control checks- less human error	2	Question is about using CAD / CAM embroidery, not making patterns, pattern lays or cutting fabric. Do not accept 'neat'. 2x1
17	d	ii	• Strengthen fabric • Support fabric / stiffens fabric • Prevents puckering of fabric (or alternative wording) / prevents movement • Stops distortion of motif/ image/ design / better quality / more accurate • Keeps its shape / prevents stretching	2	2x1
18	a		Symbols named in order: • Wool mark / wool • Iron on hot heat/ temperature / 220 / can be ironed / iron • Drip dry Naming of household textile products Credit any correct product. E.g. Carpet, blanket, rug, teapot cosy, tablecloth, cushion cover, duvet cover/oven glove, flannel, cloth, sheets, pillowslips, tea towel/ apron, net curtains, bed throw lampshade cover.	6	3x1 for correct name of symbol 3x1 for identification and naming of **different** household textile product. Any combination is acceptable. Candidates can gain marks for the item even if they get the naming of the symbol is wrong. Do credit clothes or toys. Do not credit repeats

Question			Answer/Indicative content	Mark	Guidance
18	b		Protective clothing: • Ear defenders / ear protection • Goggles / safety glasses / protective eye wear • Gloves / chain mail gloves • Overalls / apron / protective suit • Hats / hair net / hard hat • Masks • Boots / wellingtons / steel toe capped shoes • Reflective jackets / high visibility	3	Do not credit 'coat' or 'helmet' or just shoes. Not just 'eyewear' Not 'hair tieback' 3x1
18	c		Risk assessment: • Health and Safety at Work Act 1974 • Protects employees form hazards at work / reduces risks • Identifying the risks to the health and safety of people and to the environment. • Looks at all the activities carried out in the work place • Careful & detailed examination is carried out • Procedures & systems must be put in place where risks are identified • Layout of workplace • Environment of workplace • Storage & use of tools & equipment • Includes the storage of chemicals & dyes. • Identification of protective clothing / procedures	2	One mark for two points identified. Two marks for detailed explanation of any one point. Risk assessment involves: • Identification of the hazard • Identification of the potential accident / injury • Procedures in place to reduce / prevent the accident.

Question	Answer/Indicative content	Mark	Guidance
18 d	- Flame resistant/ match resistant/ cigarette resistant fire resistant - Tells consumer that it has passed required legal requirements for safety - Reference to 1988 Safety regulations - Tells consumers that a finish has been applied - Rigorous tests have been under taken and passed - Tested to withstand certain temperatures - Set level of fire resistance - Does not contain highly flammable materials. - Ensures safety in the home. - Reduces toxic fumes - Reduces the risk of fire spreading	4	

Question			Answer/Indicative content	Mark	Guidance
19	**a**		Process should be outlined using notes and diagrams and cover the following points in a logical sequence. Any **six**, in correct order, one mark each: • Wash fabric (to remove finish / stains /ensure clean/ no stains) • Description or drawing of equipment used • Description / drawing of a stencil / areas of the screen need to be blocked off to prevent the dye going through. Can be done using paper stencils or a light sensitive chemical, or etch away an insoluble polymer • A separate screen or stencil if used, is needed for each colour- two in this case- or wash the screen between colours • The fabric needs to be laid on a flat surface/ table • Secured • Print light colours first • Place screen / frame /mesh on top of fabric • Stencil in-between screen and fabric if that method is being used • Pour ink / dye along one edge/ end of screen • Move the ink /dye backwards and forwards across the screen using the squeegee / action of the squeegee (accept description/ spellings of the squeegee(piece of wood) • Lift screen/ peel of stencil • Repeat for second colour/ print second part/ repeat of some of the stages • Mention of registering / aligning the colour • Fix colour /normally using heat Industrial method acceptable including carousel printing.	**6**	6x1 Do not credit reference to allowing the fabric to dry between colours Do not credit reference to the drawn design.

Question	Answer/Indicative content	Mark	Guidance
	Figure 2.41 Carousel screen printing		

The screens needed to print the design are attached to a revolving frame, which rotates over printing areas with the T-shirts fixed to them. The screens need to be aligned carefully when setting up to ensure the colours match when the printing is done.

Rotary screen printing is the most frequently used method, as it allows continuous production. The screen is formed into a cylinder with reservoirs to hold the printing ink. The ink is pumped through inside the screen and pushed through with a squeegee or a blade as it rolls over the fabric.

Figure 2.42 Rotary screen printing

Question			Answer/Indicative content	Mark	Guidance
			Figure 2.43 Flatbed screen printing In flatbed screen printing, the fabric is laid out flat on a conveyor and held in place. The screens are lowered on to the fabric and the printing ink applied. The fabric is moved along, a screen width at a time.		
19	b		Interactive Textiles • Electronic textiles / link modern technology to product • Conductive fibres/ threads- carbon/ silver/steel • Conductive inks • Wearable computers- voice activated • Communication systems- iPod/phone/GPS/ tracking device • Lumalive textiles- led lights • Performance analysing sportswear • Automotive transport- heated seats/ seatbelts • Entertainment wear- fibre optics in clothing- movement activated	3	Do not credit photochromic or thermochromic dyes. Do not credit smart / reactive materials (must be interactive) A candidate can achieve two marks for an explained example, e.g. a tracking device so that parents know where children are would be worth two marks. 3x1

Question			Answer/Indicative content	Mark	Guidance
19	c*		**Points to consider:** • Appearance- colour, pattern, texture • Fastenings- suitability/ safety/ size and ease of use • Durability / strength both fastenings and fabric • Washability -care of fabrics • Stain resistant • Non toxic • Elasticity- comfort, less creasing • PVC & other fabrics • Comfort- blended fibres polyester & cotton / Mixture of yarns • Non Allergenic- pure cotton- non irritating • Smart materials • Knitted (stretchy) or woven (hardwearing) references • Flame resistance/ finishes- must be for children's clothing Do not credit reference to sustainability or environmental issues.		**Level 3 (5-6 marks)** Thorough discussion, showing clear understanding of the factors to consider when choosing fabrics and components for children's garments. Specialist terms will be used appropriately and correctly. The information will be presented in a structured format. The candidate will demonstrate the accurate use of spelling, punctuation and grammar. **Level 2 (3-4 marks)** Adequate discussion, showing an understanding of the factors to consider when choosing fabrics and components for children's garments. Candidates can give/ provide a description with two or more examples. There will be some use of specialist terms, although these may not always be used appropriately. The information will be presented for the most part in a structured format. There may be occasional errors in spelling, grammar and punctuation. **Level 1 (1-2 marks)** Basic discussion, showing some understanding of the choosing fabrics and components for children's garments. Candidates can give/ provide a basic description with one or more examples. There will be little or no use of specialist terms. Answers may be ambiguous or disorganised or 'list like' or a series of questions. Errors of grammar, punctuation and spelling may be intrusive. **0 = no response worthy of credit**

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