



**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 2018**

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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.

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## Annotations

| Annotation  | Meaning   |
|---|---|
| <b>BP</b>   | 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. |
| <b>L1</b>   | Level 1   |
| <b>L2</b>   | Level 2   |
| <b>L3</b>   | Level 3   |
| <b>SEEN</b>   | Noted but no credit given   |
|  | Tick  |

| Question |     | Answer   | Marks | Guidance  |
|----------|-----|--|-------|---|
| 1        |     | C  | 1     |   |
| 2        |     | A  | 1     |   |
| 3        |     | C  | 1     |   |
| 4        |     | D  | 1     |   |
| 5        |     | B  | 1     |   |
| 6        |     | (Product) Life Cycle   | 1     | Can have 'assessment' or 'analysis' on the end.   |
| 7        |     | (Primary) Recycling / reuse  | 1     | Focus on recycling e.g. accept secondary recycling.   |
| 8        |     | Global Unity   | 1     | This is the only correct answer.  |
| 9        |     | Culture, Cultural, Ethnic, Ethics  | 1     | Any one word.   |
| 10       |     | Care Labelling / Care label  | 1     | Both words must be correct to award mark.   |
| 11       |     | False <input type="checkbox"/> <input checked="" type="checkbox"/>   | 1     |   |
| 12       |     | True <input checked="" type="checkbox"/> <input type="checkbox"/>  | 1     |   |
| 13       |     | False <input type="checkbox"/> <input checked="" type="checkbox"/>   | 1     |   |
| 14       |     | False <input type="checkbox"/> <input checked="" type="checkbox"/>   | 1     |   |
| 15       |     | True <input checked="" type="checkbox"/> <input type="checkbox"/>  | 1     |   |
| 16       | (a) | Any <b>four</b> points, one mark each: <ul style="list-style-type: none"> <li>• Silky appearance/ luxurious feel and look/sheen</li> <li>• Soft /comfortable/non-irritating / not itchy</li> <li>• Lightweight</li> <li>• Drapes well</li> <li>• Absorbent</li> <li>• Non static</li> <li>• Dyes very well(fibre retains the dye)</li> <li>• Can be washed and ironed</li> <li>• Breathable</li> <li>• Does not pill</li> </ul>  | 4     | Answers can relate to the performance characteristics of viscose (rayon)<br><a href="http://www.swicofil.com/products/200viscose.html">http://www.swicofil.com/products/200viscose.html</a> |
| 16       | (b) | The definition of a regenerated fibre is: 'It is created by dissolving the cellulose area of plant fibres in chemicals and making it into fibres again'. <ul style="list-style-type: none"> <li>• Made from a natural starting point / resources</li> <li>• Fibre 'broken down'</li> <li>• Wood pulp (pine, beech or eucalyptus), bamboo, short cotton fibres</li> <li>• Creates a cellulose (thick, sticky substance)</li> <li>• Treated with chemicals to make into fibre</li> </ul> | 2     | Marks are for the explanation and could be one point well explained or two simple points in less detail.  |

| Question |     | Answer   | Marks | Guidance  |
|----------|-----|--|-------|---|
|          |     | <ul style="list-style-type: none"> <li>• (Heavily) processed</li> <li>• Acetate, triacetate, Tencel, Modal &amp; Lyocell.</li> </ul>   |       |   |
| 16       | (c) | <p><b>State two advantages to the environment of regenerated fibres:</b></p> <ul style="list-style-type: none"> <li>• Made from sustainable / renewable or natural resources/ trees</li> <li>• Biodegradable/ decomposable</li> <li>• Can be recycled</li> <li>• reduced pollution/ reduced CO2 emissions</li> <li>• reduced carbon footprint</li> <li>• can be recycled / reused</li> <li>• reduced waste / less waste / less in landfill/ no landfill</li> <li>• Traditional methods of producing regenerated cellulose fibres involved the use of chemicals that were costly to recycle- but not necessarily causing pollution</li> <li>• Lyocell (Tencel) is a solvent spun regenerated cellulose fibre that is totally environmentally friendly. It is an enclosed (closed loop) system with the solvent being completely recycled within.</li> </ul> | 2     |   |
| 16       | (d) | <p><b>Disposal of fullness:</b></p> <ul style="list-style-type: none"> <li>• Gathers</li> <li>• Darts</li> <li>• Pleats</li> <li>• Cuffs at ankles</li> <li>• Ruched up sides</li> <li>• Add ties/ roll up</li> <li>• elasticated waistband</li> <li>• drawstring/ toggles</li> </ul> <p><b>Pattern and Colour</b></p> <ul style="list-style-type: none"> <li>• Single image or motif drawn or shown.</li> <li>• Repeat pattern.</li> <li>• Use of colour on design - labelled or shaded</li> </ul>  | 6     | <p>2 x for each area = 6</p> <p>No credit for seams or fastenings or construction details.</p> <p>Do not credit decorative components, it must be a decorative technique.</p> |

| Question |     | Answer   | Marks | Guidance  |
|----------|-----|--|-------|---|
|          |     | <p><b>Decorative technique:</b></p> <ul style="list-style-type: none"> <li>• Printing- stencilling, block, transfer, roller, screen</li> <li>• Batik</li> <li>• Tie-dye</li> <li>• Single colour dye</li> <li>• Appliqué</li> <li>• Embroidery / stitching- does not need to be specified</li> <li>• Mola</li> <li>• Patchwork</li> <li>• Quilting</li> </ul>  |       |   |
| 16       | (e) | <p>*</p> <p>Marks to be awarded for ethical points relating to:</p> <ul style="list-style-type: none"> <li>• Workers receiving low wages</li> <li>• Paid by piece time (numbers made)</li> <li>• Poor working conditions/ environment in factory</li> <li>• Long hours of working</li> <li>• Use of child labour</li> <li>• High eco footprint- carbon emissions</li> <li>• Multinational companies making large profits</li> <li>• Lack of education for workers</li> <li>• Lack of correct health &amp; safety regulations- exposure to fumes, dangerous machinery etc</li> <li>• low quality products</li> <li>• low quality materials</li> <li>• Limited training for workers</li> </ul> | 6     | <p><b>Level 3 (5-6 marks)</b><br/>A thorough explanation of the ethical and economic issues associated with manufacturing textile products in a sweatshop. 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.</p> <p><b>Level 2 (3-4 marks)</b><br/>A sound understanding of ethical and economic issues associated with manufacturing textile products in a sweatshop. 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</p> <p><b>Level 1 (1-2 marks)</b><br/>Some basic examples of ethical and economic issues associated with manufacturing textile products in a sweatshop. 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.</p> <p><b>0= no response worthy of credit</b></p> |

| Question |   | Answer  | Marks | Guidance   |
|----------|---|---|-------|--|
| 17       | a | <p>One mark for identification of the characteristic, one for linking it to the use:</p> <ul style="list-style-type: none"> <li>• Cotton fibres are absorbent so will help the person using the robe to get dry</li> <li>• Cotton fibres are hardwearing/ durable/ strong so will withstand wear and tear</li> <li>• Cotton fibres are non-irritating, comfortable / soft next to the skin to wear over swimsuit</li> <li>• Cotton fibres can be washed at high temperatures so hygienic / wash well</li> <li>• Terry towelling has a looped structure, increasing the absorbency of the fabric</li> <li>• The loops make it hardwearing / durable / strong</li> <li>• Warm and insulating after going in the sea.</li> </ul> | 4     | <p>4x1</p> <p>Two explained points needed for the four marks.</p>  |
| 17       | b | i   | 1     |  |
|          |   | ii  | 2     | <p>Any two reasons, one mark each:</p> <ul style="list-style-type: none"> <li>• Strong seam / long lasting – stitched twice</li> <li>• Flat / comfortable next to the skin</li> <li>• All raw edges are enclosed / no neatening needed/ prevents fraying</li> <li>• Looks good from both sides / attractive</li> </ul>   |
| 17       | c |   | 2     | 2x1  |
| 17       | d |   | 6     | <p><b>Level 3 (5-6 marks)</b></p> <p>A thorough explanation of how computer applications can be used when designing <u>and</u> manufacturing textiles 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.</p> |

| Question | Answer   | Marks | Guidance   |
|----------|--|-------|--|
|          | <ul style="list-style-type: none"> <li>• Research/ images accessed e.g clip art, to give initial ideas to develop rather than starting from scratch</li> <li>• Textures and fabrics can be mapped onto designs to give a realistic image of the product – alternatives can be shown quickly.</li> <li>• Colourways can be tested quickly and easily, no need to redraw. Colours can be filled in at the click of a mouse rather than colouring by hand</li> <li>• 3D views can be generated giving a better idea of the finished product in a short space of time</li> <li>• Designs can be e-mailed to clients giving quick communication and feedback speeding up the process</li> <li>• The amount of paper used is reduced contributing to the 6Rs and reducing costs</li> <li>• Prototypes can be generated quickly and easily to show to clients</li> <li>• Information can be downloaded directly to CAM machines speeding up the making process and improving quality e.g pattern lays (reduce waste), cutting out sublimation / transfer printing (accuracy and quality)</li> <li>• Storage space is reduced and organisation improved. Less space could mean reduced rental costs</li> <li>• Quality is improved / more accurate and errors reduced reducing costs. More realistic designs are achieved.</li> <li>• Computer controlled weaving and knitting machines allow for complex designs to be created and can run 24/7 with minimum supervision.</li> <li>• Embroidery machines – fast and minimum supervision, improved quality.</li> <li>• CIM – systems for making and planning production</li> <li>• Quality control – often improved quality when CAM used as human error removed. Reduces the number of 'seconds' produced, increasing profits.</li> <li>• Costings and time schedules can be calculated using spreadsheets, improving efficiency, saving time and money.</li> </ul> |       | <p><b>Level 2 (3-4 marks)</b><br/>A sound understanding of how computer applications can be used when designing and manufacturing textiles products, but may refer more to designing <u>or</u> making rather than a balanced explanation covering both. 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</p> <p><b>Level 1 (1-2 marks)</b><br/>Some basic examples of how computer applications can be used when designing and manufacturing textiles products. 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.</p> <p><b>0= no response worthy of credit</b></p> |

| Question |   | Answer   | Marks | Guidance   |
|----------|---|--|-------|--|
|          |   | <ul style="list-style-type: none"> <li>Safety checks as computerized checks are made for such as broken needles/metal detection.</li> </ul>  |       |  |
| 18       | a | <p>Any four, one mark each:</p> <ul style="list-style-type: none"> <li>Selvedge's not together / fabric not folded correctly with edges matching'.</li> <li>Shirt back not on fold</li> <li>Yoke hanging off the edge of the fabric / not on double</li> <li>Collar and sleeve overlapping</li> <li>Cuff and sleeve overlapping</li> <li>Front not on straight grain</li> <li>none of the pieces will be on the straight grain as the fabric is not folded correctly</li> <li>binding not on the cross</li> <li>Too much space between the pattern pieces - wastes fabric.</li> </ul>  | 4     | 4x1  |
| 18       | b | <p>One mark for shallow explanation, two if detailed, any two:</p> <ul style="list-style-type: none"> <li>overlapping pattern / incorrectly cut / damaged pattern pieces will mean the shapes are incorrect and will not fit together</li> <li>if straight grain incorrect, garment will not hang correctly, spoiling the look.</li> <li>If not placed on fold there will be two pieces rather than one. These will need to be joined making the piece smaller than it should be/ expensive to recut</li> <li>If binding is not on the bias of the fabric, it will not stretch and curve as if should to fit.</li> <li>Pattern pieces too spaced out, fabric will be wasted costing more money/ more in landfill</li> <li>If the fabric is cut out incorrectly there may not be enough fabric left over to cut more</li> <li>Nap / pile /one-way design fabrics require the pattern pieces to be laid all the same way to ensure the pattern runs the same way to ensure the pattern runs the same way / is the same colour on the garment.</li> </ul> | 4     | <p>2x2</p> <p>The explanation does not have to be about a fault identified in 18a.</p> <p>Candidates can gain a mark for identification of fault and then another for the explanation.</p> |

| Question |   | Answer   | Marks | Guidance  |
|----------|---|--|-------|---|
| 18       | c | <p>Any two, one mark each;</p> <ul style="list-style-type: none"> <li>• Stitching / tailor tacks / thread markers / tacking</li> <li>• (Drawing with) tailors chalk / pencil / chalk</li> <li>• (Drawing with) water soluble pen</li> <li>• Tracing wheel (and carbon paper)</li> <li>• Making holes with drill markers</li> <li>• Staining fabric with dye markers</li> <li>• Melting fabric with a hot notcher.</li> </ul> | 2     | <p>2x1<br/>Accept industrial methods.<br/><br/>Accept just pen.</p>   |
| 18       | d | i  | 3     | <p>One mark for each correct answer</p> <ul style="list-style-type: none"> <li>• Unpicker</li> <li>• Pinking shears / scissors</li> <li>• Band saw or knife/ vertical blade or cutter / straight knife cutter / laser cutter</li> </ul> <p>Do not accept just industrial cutter for band saw.</p>   |
| 18       | d | ii   | 2     | <p>One mark for the advantage, one mark for the disadvantage:</p> <p><b>Advantages</b></p> <ul style="list-style-type: none"> <li>• Will cut different thicknesses and types of fabric, no need to change tools, increasing speed of manufacture</li> <li>• Can cut in batches / many layers of fabric at once</li> <li>• All the pieces cut will have an identical edge finish making assembly quicker and easier / neater edges</li> <li>• Shapes are cut precisely/accurately ensuring product are the correct size and shape, improving quality of the finished item</li> <li>• Quicker than cutting with scissors, increasing productivity and profit</li> </ul> <p><b>Disadvantages</b></p> <ul style="list-style-type: none"> <li>• Expensive to install initially which may impact on profit or be too expensive for a small company</li> <li>• Training will be needed, incurring additional expense and taking worker off production line</li> <li>• Expensive to maintain and repair, reducing profits / can break down / expensive to run/ needs to be powered</li> <li>• Health and safety - risk assessments needed, increasing costs / reducing profit / personal safety / more dangerous</li> </ul> <p>1x1<br/><br/>Accept one word answers e.g. expensive.<br/><br/>Do not credit reference to incorrect set up / use of industrial cutting equipment.</p> |

| Question |   | Answer  | Marks | Guidance |
|----------|---|---|-------|----------|
| 19       | a | <p>Any six points in a logical order, one mark each. Information can be in notes or diagram:</p> <ul style="list-style-type: none"> <li>• Draw the design / make pattern / trace design onto interfacing / bondaweb / fabric</li> <li>• cut out shapes / pattern pieces</li> <li>• iron interfacing onto fabric / iron bondaweb onto fabric / pin paper onto fabric</li> <li>• cut round paper / Vilene/ bondaweb or wonder web</li> <li>• pin / tack shapes onto background / iron onto background</li> <li>• stitch in place</li> <li>• name stitch - straight stitch / zig zag on machine or blanket or herringbone hand stitch</li> <li>• reverse / secure stitching / knot ends</li> <li>• remove pins / tacking</li> <li>• cut loose threads / press</li> </ul> | 6     | 6x1      |
| 19       | b | <p>Any three, one mark each;</p> <ul style="list-style-type: none"> <li>• Beads</li> <li>• Sequins / diamante</li> <li>• Ribbon</li> <li>• Lace</li> <li>• Ric-rac</li> <li>• Braid / pom poms / tassels</li> <li>• Buttons</li> <li>• Buckles</li> <li>• Zip</li> <li>• Studs/ press studs</li> <li>• Decorative strips</li> <li>• Electronic/LED lights / reflective strips</li> <li>• Piping</li> <li>• Pocket</li> <li>• Velcro</li> <li>• thread</li> <li>• Plastic eyes / noses</li> </ul>  | 3     | 3x1      |

| Question |   | Answer   | Marks | Guidance  |
|----------|---|--|-------|---|
| 19       | c | <p>Two marks for each specification point addressed:</p> <p><b>Protect the child from the sun – any two</b></p> <ul style="list-style-type: none"> <li>• Brim / peak</li> <li>• Neck protection</li> <li>• Smart materials to monitor UV exposure / heat</li> <li>• Method of securing hat to the child's head</li> <li>• Loops for sun glasses / built in glasses</li> <li>• Holes for ventilation / mesh fabric</li> </ul> <p><b>Be suitable for boys and girls – any two</b></p> <ul style="list-style-type: none"> <li>• Choice of colour or shading sewn</li> <li>• Design feature / style of hat</li> <li>• Unisex decorative design drawn or described</li> </ul> <p><b>Additional two marks</b></p> <ul style="list-style-type: none"> <li>• Decorative technique mentioned</li> <li>• Construction technique mentioned</li> <li>• Washable</li> <li>• Fabric / fibre given</li> <li>• Method of adjustment to fit a range of sizes</li> <li>• Waterproof</li> </ul> | 6     | <p>2</p> <p>Two marks are allocated for each specification point.</p> <p>2 + 2</p> <p>To gain full marks, candidates must address each specification point.</p> |

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