



**General Certificate of Education (A-level)
June 2012**

**Design and Technology: TEXT1
Product Design (Textiles)**

(Specification 2560)

Unit 1: Materials, Components and Application

Final

Mark Scheme

Mark schemes are prepared by the Principal Examiner and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation events which all examiners participate in and is the scheme which was used by them in this examination. The standardisation process ensures that the mark scheme covers the candidates' responses to questions and that every examiner understands and applies it in the same correct way. As preparation for standardisation each examiner analyses a number of candidates' scripts: alternative answers not already covered by the mark scheme are discussed and legislated for. If, after the standardisation process, examiners encounter unusual answers which have not been raised they are required to refer these to the Principal Examiner.

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COMPONENT NUMBER: 2560

COMPONENT NAME: TEXT1

STATUS: Post-Standardising

NB This mark scheme is intended as a guide to the type of answer expected but is not intended to be exhaustive or prescriptive. If candidates offer other answers which are equally valid they must be given full credit.
Many responses at this level are assessed according to the quality of the work rather than the number of points included. The following level descriptors are intended to be a guide when assessing the quality of a candidate's response.

(low mark range)
The candidate has a basic but possibly confused grasp of the issues. Few correct examples are given to illustrate points made. This candidate does not have a clear idea of what s/he is writing about.
(mid mark range)
The candidate has some knowledge but there will be less clarity of understanding. Some correct examples given to illustrate points made. This candidate knows what s/he is writing about but is confused in part.
(high mark range)
The candidate has a thorough understanding of the issues and has provided relevant examples to support the knowledge shown. This candidate knows what s/he is writing about and provides clear evidence of understanding.

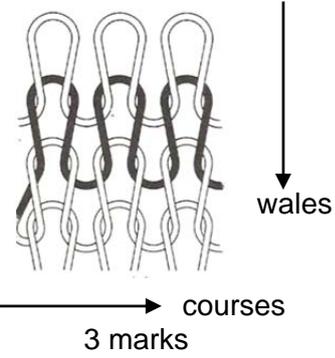
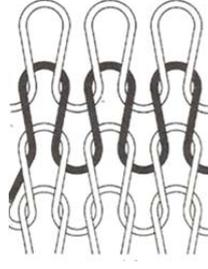
Section A

Qn	Part	Marking Guidance	Mark
1		<p>E.g. Silk fabrics:</p> <ul style="list-style-type: none"> • have an attractive lustre • drape well • have a soft, luxurious handle • are fairly warm to wear • may be resistant to creasing • strong • can be lightweight • easy to dye • absorbance linked to comfort <p>Not 'looks expensive'. Any 3 appropriate points, 1 mark each</p>	3 marks
2		<p>Twist adds strength to the yarn (1 mark) It holds the fibres together as a yarn (1 mark) Amount of twist used for some effects, e.g. crepe yarn, colour and light effects (1 mark), Low twist gives a bulky/more insulating yarn (1 mark) Can make a smoother yarn (1 mark)</p> <p>Any 2 appropriate points, 1 mark each</p>	2 marks
3		<p>Some fibres do not contain moisture so are 'dry' (1 mark), E.g. polyester, polyamide, acrylic (1 mark), Static develops when fabrics made from dry fibres are subjected to friction/rub against each other (1 mark) Wool, cotton, linen have high moisture content so do not develop static (1 mark)</p> <p>You are looking for understanding that it is a combination of friction and dry fibres that allows static to develop, with examples of dry fibres or the reverse. Whole answer must make sense, do not award marks by word recognition.</p>	3 marks
4		<p>Candidate should identify a reason and provide some explanation of its importance; e.g.</p> <ul style="list-style-type: none"> • To ensure that products are appropriate for their use, e.g. safety in relation to TMG, specific age ranges, specific activities • To ensure that products will sell, otherwise money and energy are wasted • To be aware of current fashions, as that is what the TMG may be looking for <p>Any 2 appropriate reasons/areas of concern, 1 mark each Explanation of its importance, 1 mark each General statement about products selling well is awarded 1 mark Need to look at quality of answer as well as individual points.</p>	4 marks

Qn	Part	Marking Guidance	Marks
5		E.g. for decoration, to strengthen edges, to define shape. Not 'neaten edges'. Any 2 appropriate reasons, 1 mark each	<i>2 marks</i>
6		Children's nightwear (1 mark) Furnishings in public buildings (1 mark) Flammability of domestic chair/sofa coverings (1 mark). There is a need for specific examples, general statements about furnishings or children's clothes are not acceptable. Any 2 appropriate areas, 1 mark each	<i>2 marks</i>
7		A moodboard is used for inspiration (1 mark), It will contain inspirational images, fabric samples, etc. (1 mark). A presentation board shows a final collection (1 mark), Is used to show products to clients (1 mark)	<i>4 marks</i>

Section B

Qn	Part	Marking Guidance	Mark
8	(a)	<p>2 layers of fabric (1 mark) With a layer of wadding between them (1 mark) Stitched through all layers (1 mark)</p> <p>A diagram should show all of the above for 3 marks.</p>	3 marks
8	(b)	<p>The layer of wadding traps air (1 mark), which acts as an insulator (1 mark).</p> <p>Look for understanding of the trapped air and its ability to insulate.</p>	2 marks
8	(c)	<p>E.g. knitted construction (1 mark), with an extra yarn (1 mark), brushed/nap/raised surface (1 mark), on one or both sides of the fabric (1 mark)</p> <p>Any 3 points, 1 mark each.</p>	3 marks
8	(d)	<p>Polyester fleece is lightweight, soft, fluid/flexible, hardwearing and strong, not absorbent so dries quickly, easy care, warm without being bulky, cheaper than some alternatives, can have various built in properties, e.g. windproof, stain resistant. But can pill easily.</p> <p>Quilted fabrics give a padded textured and decorative effect. They are good insulators because of the air trapped in the wadding, but can be bulky when worn, and the bulk may make them difficult to care for. Cotton fabric is strong and hardwearing, but very absorbent so would not be appropriate in wet weather. The fabric is soft.</p> <p>This part is not well answered so need to award appropriately. Look for understanding that the cotton performs badly in wet weather and is also bulky to wear for sports – these points are worth high marks and carry greater weight than the properties of cotton or polyester.</p> <p>Marks awarded as follows:</p> <ul style="list-style-type: none"> • Simplistic statements based on additional warmth, there may be confused information and little attempt to evaluate the effects of the fabrics. 0-2 marks • Candidate shows knowledge of the properties of fleece and quilted cotton fabric and attempts to analyse their suitability for a sports top. Although mostly accurate, points will be limited in range. 3-4 marks • Candidate shows sophisticated understanding of the properties of both the fleece and the quilted fabric, and makes a sound evaluation of their suitability for uses given. Information will be accurate and relevant. 5-6 marks 	6 marks

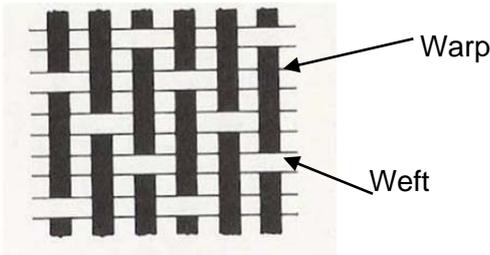
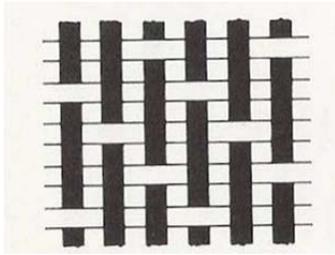
Qn	Part	Marking Guidance	Mark
8	(e)	<p>Candidate should explain how various fibres and yarns can help improve thermal insulation. e.g., comparisons between those which are able to trap air and those which are smooth and do not trap air, wool fibres and crimp, smoother fibres such as cotton and linen, hollow polyester fibres, bulked yarns, staple yarns and filament yarns, loosely or tightly twisted yarns.</p> <p>Marks awarded as follows:</p> <ul style="list-style-type: none"> • Basic information with evidence of only limited knowledge, fibre and yarn properties will be given scant coverage. Candidate will not understand basic principles of insulation. Information will be generalised rather than specific. 0-2 marks • Candidate shows knowledge of the fibre and yarn properties but there will be a lack of specific information. Some understanding of the principles of insulation but there will probably be elements of confusion. A number of examples given but some will be inappropriate. 3-4 marks • Candidate shows detailed knowledge and understanding of the properties of fibres and yarns and has a clear understanding of the principles of insulation. A wide range of accurate examples will be given to support points made. 5-6 marks 	<i>6 marks</i>
9	(a)	<p>Candidate may respond by means of a written explanation or a labelled diagram which includes all the points.</p> <p>Weft knit uses one continuous yarn (1 mark), horizontal rows of loops – courses - (1 mark), interlock with those in the row above and below (1 mark).</p> <p>An accurate diagram showing points above is acceptable for 3 marks.</p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  <p>2 marks</p> </div> </div>	<i>3 marks</i>

Qn	Part	Marking Guidance	Mark
9	(b)	<p>Acrylic is strong and resistant to abrasion so will wear well, is lightweight and warm to touch so feels good on skin, is crease resistant so easy care, non-absorbent so dries quickly, is able to wick moisture away from skin, providing greater comfort, does not irritate skin, has lustre so provides sparkle in fabric, is relatively inexpensive. But it can shrink, may be damaged by excessive heat, pills easily.</p> <p>Polyamide is abrasion resistant and improves durability of acrylic, shrink resistant so may counteract acrylic's tendency to shrink, has little absorbency, can be heat-set to maintain shape/fashion creasing, lightweight, has some give. But can be damaged by excessive heat.</p> <p>The knitted construction gives elasticity and drape but can snag easily if loops become caught. If the fabric is washed at too high a temperature it can become misshapen and lose its intended creases. May need the use of fabric softeners to maintain soft handle.</p> <p>Marks awarded as follows:</p> <ul style="list-style-type: none"> • Basic information will tend to concentrate on the properties of the individual fibres with evidence of only limited understanding of the effects of blending them. Qualities will be generalised rather than related specifically to the top, and may list the overall fabric qualities without specific reference to the individual fibres. There will be confused and inaccurate information. 0-2 marks • Candidate shows sound knowledge of the properties of the individual fibres and is able to give limited explanation of their suitability for a fashion top and their overall contribution to the blend. There will be some good understanding at the top end of the mark range, but some points may be general rather than specific. 3-5 marks • Candidate shows detailed knowledge and understanding of the properties of the individual fibres and is able to relate to their combined contribution to the blend and intended use. The overall qualities of the blend will be given detailed and accurate consideration with clear explanation of points made. • There must be some reference to the knit construction for full marks. 6-8 marks 	8 marks
9	(c)	<p>The fibres in the blend are thermoplastic (1 mark) So soften (not melt) with heat (1 mark), This allows them to be creased or set when soft (1 mark) And retain the creases when cooled (1 mark) 3 appropriate points, 1 mark each</p>	3 marks

Qn	Part	Marking Guidance	Mark
9	(d)	<p>The top can be washed but at a temperature not exceeding 30°C, and with a reduced mechanical action / short spin speed – this is because the synthetic fibre content will soften at higher temperatures and may become heat-set into a different shape/lose its creases. The lower temperature is more eco-friendly as less energy is used to heat the water. The reduced mechanical action prevents damage to the fairly delicate knit structure.</p> <p>Do not bleach - this will remove the colour.</p> <p>Do not tumble dry - this will heat-set the creases into a different form, and may damage the delicate structure.</p> <p>Do not iron - this will remove the intentional creases.</p> <p>The top should be dried flat to prevent the knit structure from stretching out of shape.</p> <p>Many candidates refer to the fabric melting rather than softening; this is not strictly true and we would expect greater precision for full marks.</p> <p>Marks awarded as follows:</p> <ul style="list-style-type: none"> • Basic information, candidate will explain the meaning of most of the symbols with little/no reference to the fabric qualities. There may be confused and inaccurate information. 0-2 marks • Candidate shows some knowledge of the fibre and fabric properties and there will be some attempts to relate them to the care advice given. There will be elements of confusion. 3-4 marks • Symbols will be accurately interpreted and there will be detailed knowledge and understanding of the properties of fibres and fabric with accurate links to the care advice given. 5-6 marks 	6 marks

Section C

Qn	Part	Marking Guidance	Mark
10	(a)	<p>This question needs to be marked leniently as it is a difficult concept and candidates have found it challenging, especially in terms of showing the alterations. Information may be given through diagrams and annotation. There is no requirement for candidates to show pattern markings.</p> <p>The candidate should explain: Making the yoke pattern from the top part of the skirt blocks, including closing of the darts; Adding an allowance for the front pleat; Creation of a pattern for the pocket. There may be some reference to the A-line shape or shorter length.</p> <p>Marks awarded as follows:</p> <ul style="list-style-type: none"> • Poor understanding of the adaptations needed with inaccurate and incomplete templates presented. It will be difficult to follow the line of thought in adapting the blocks. 0-2 marks • A good attempt to show the modifications needed although there will be some confusion and inaccuracy. The templates presented may not be the most efficient but will make a reasonable copy of the design, especially at the top end of the mark range. There may be minor pieces missing. 3-5 marks • Candidate provides a clear and largely accurate explanation of the modifications needed. The templates will be right for the design with only very minor omissions 6-8 marks 	<i>8 marks</i>
10	(b)	<p>Seam allowance: Provides space for the seam to be sewn, allows space for seam neatening, is the space between the cutting and sewing lines, allows space for fitting adjustments.</p> <p>Balance marks: Allow pattern pieces to match accurately, allow for differentiation between back and front of skirt, show placement of style features such as pleat, pocket, yoke sections. (Allow only 1 named feature).</p> <p>Grain line: Indicates straight thread of fabric, ensures any pattern is even/level, ensures that skirt will hang correctly.</p> <p>Marks awarded as follows for each:</p> <ul style="list-style-type: none"> • Vague and generalised explanation which may be repetitive. 0-1 mark • A clear and accurate explanation with some detail of use. 2 marks 	<i>6 marks</i>

Qn	Part	Marking Guidance	Mark
10	(c)	<p>Twill weave: weft yarns pass over 3 then under 1 warp yarns (1 mark), moving forward one yarn on each row (1 mark), Other twill weaves acceptable.</p> <p>An accurate diagram incorporating all points, and clearly identifying warp and weft above will be acceptable for 3 marks.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>(3 marks)</p> </div> <div style="text-align: center;">  <p>(2 marks)</p> </div> </div> <p>Warp and weft labelling on incorrect diagram, eg plain weave - 0mark</p>	<p><i>3 marks</i></p>

Qn	Part	Marking Guidance	Mark
10	(d)	<p>Polyester is a strong, lightweight fibre which is resistant to abrasion so will withstand wear and tear, counteracting the weakness in the viscose fibre. It can be washed easily without shrinking, and dries quickly because it is non-absorbent. Because it does not crease easily, it will counteract this tendency in the viscose and means that the fabric will require little ironing. It is thermoplastic so pleats can be heat-set.</p> <p>Viscose gives some absorbency and softness to the fabric. But it creases and shrinks badly, and is weaker when wet. These properties will be offset by the polyester content of the fabric. The viscose may cause the fabric to pill.</p> <p>Twill weave is firm and hardwearing, and provides some surface interest, although it can have a tendency to fray as a result of the fairly loose structure.</p> <p>Marks awarded as follows:</p> <ul style="list-style-type: none"> • Little understanding, simplistic statements only, candidate typically concentrates on limited fibre qualities without reference to structure of the fabric or intended use. There may be confused and inaccurate information with little real evaluation of the fabric's suitability. 0-2 marks • The candidate may show understanding of the contribution made by the fabric structure but most points will relate to fibre content. There will be a sound attempt to analyse appropriateness of fabric for the skirt, but points will tend to emphasize the positive aspects. The interaction between the fibres in the blend will not be fully understood. There may be minor confusion but most points will be accurate. 3-5 marks • Candidate shows sophisticated understanding of the contribution made by the fabric structure and/or fibre content in relation to the skirt. There will be clear understanding of the interaction between the fibres in the blend. Information will be accurate and evaluation will consider a range of positive and negative aspects of the fabric. There must be reference to both fibre content and fabric construction for the full 8 marks. 6-8 marks 	8 marks
10	(e)	<p>Thread, zipper, interfacing, buttons. Not pockets. Any 3 appropriate components for the skirt shown, 1 mark each</p>	3 marks

Qn	Part	Marking Guidance	Mark
10	(f)	<p>E.g. QC will be needed in relation to:</p> <ul style="list-style-type: none"> • the pockets – size, shape, position, stitching; • the seams – width, straightness, finishing; • the yoke/waistband – even width and matching across seams, neat finish at top; • zip setting – securely attached/tapes caught along length, slider even distance from top on both sides, even stitching • pleat - even in width across both sides along entire length • buttons/buttonholes – accurate placement and correct length, buttons securely attached. <p>This question is about manufacturing the skirt, not the design/choice/quality or buying of the materials and components.</p> <p>Identification of area to be considered (1 mark) Explanation of what will be looked for / consequences of inaccurate manufacture (2 marks)</p> <p>Answers need to be specific about the area and the issues. Some candidates are treating the fastenings as one area – this is acceptable. 2 different areas of QC, 3 marks each</p>	6 marks
10	(g)	<p>This question is testing understanding that some parts of a product may be made separately before being attached to the main product. There will be some overlap with CAM as these systems are often used to manufacture individual sections such as pockets, embroidered areas.</p> <p>There may be references to the use of specialist machinery/processes including CAM, to use specially trained/skilled workers, to save money on buying expensive equipment, to speed up manufacture on the main assembly lines, to reduce overall costs as parts made elsewhere may be cheaper to manufacture, to improve quality, to reduce waste.</p> <p>Processes might include making of a lining, pockets.</p> <p>Marks awarded as follows:</p> <ul style="list-style-type: none"> • Basic and limited knowledge of sub-assembly, information will be generalised rather than specific. 0-2 marks • Candidate some knowledge of sub-assembly but there will be a lack of specific information. Examples may be given but some will be inappropriate. 3-4 marks • Detailed knowledge and understanding of sub-assembly including specific information and examples to support points made. 5-6 marks 	6 marks