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General Certificate of Education

Design and Technology: Product Design (Textiles) 2560

TEXT1

Mark Scheme

2009 examination - January series

Mark schemes are prepared by the Principal Examiner and considered, together with relevant questions, by a panel of subject teachers. This mark scheme includes amendments made at the standardisation meeting attended by all examiners and is the scheme which was used by them in this examination. The standardisation meeting 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 the standardisation meeting each examiner analyses a number of candidates' scripts: alternative answers not already covered by the mark scheme are discussed at the meeting and legislated for. If, after this meeting, examiners encounter unusual answers which have not been discussed at the meeting they are required to refer these to the Principal Examiner.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of candidates' reactions to a particular paper. Assumptions about future mark schemes on the basis of one year's document should be avoided; whilst the guiding principles of assessment remain constant, details will change, depending on the content of a particular examination paper.

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COMPONENT NUMBER: 2560

COMPONENT NAME: TEXT1

STATUS: Final

DATE: 30-01-09

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

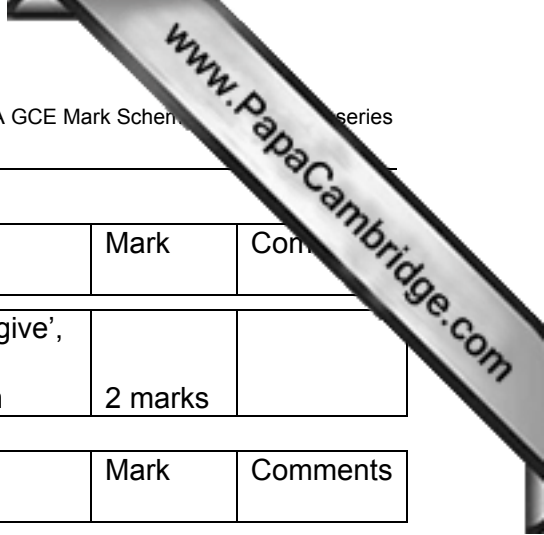
Question	Part	Sub Part	Marking Guidance	Mark	Comments
1	a		e.g. Fibres which soften (1 mark) in presence of heat (1 mark) can be set into permanent shape/can be reformed (1 mark) by applying heat/when exposed to high temperatures (1 mark) Any two appropriate points, 1 mark each	2 marks	
1	b		Nylon/polyamide, polyester, acrylic, acetate, PVC Any 2 appropriate fibres, 1 mark each	2 marks	

Question	Part	Sub Part	Marking Guidance	Mark	Comments
2			e.g. to make fibres lie parallel to each other/ straighten them out, to remove impurities, to remove tangles. Any 2 appropriate reasons, 1 mark each	2 marks	

Question	Part	Sub Part	Marking Guidance	Mark	Comments
3			e.g. some fibres do not contain moisture so are 'dry' (1 mark). static develops when fabrics made from dry fibres are subjected to friction (1 mark)	2 marks	

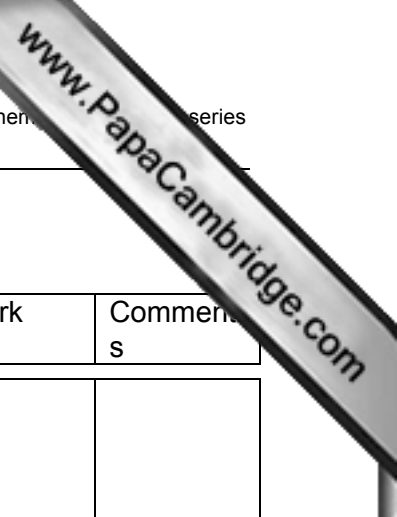
Question	Part	Sub Part	Marking Guidance	Mark	Comments
4	a		Weft knit	1 mark	
4	b		Horizontal rows = courses Vertical rows = wales	2 marks	

Question	Part	Sub Part	Marking Guidance	Mark	Comments
5	a		e.g. knitted in, printed on, embroidered. Any 2 appropriate methods, 1 mark each	2 marks	
5	b		e.g. batik, tie dye. Any two appropriate methods, 1 mark each	2 marks	



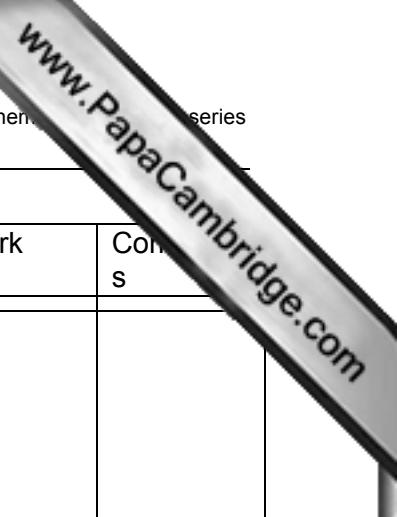
Question	Part	Sub Part	Marking Guidance	Mark	Comments
6			Same care requirements, allows some 'give', does not burn, is strong. Any 2 appropriate reasons, 1 mark each	2 marks	

Question	Part	Sub Part	Marking Guidance	Mark	Comments
7	a		The Woolmark	1 mark	
7	b		The product is made from pure new wool (1 mark) It is a quality mark (1 mark) It is a certification trade mark (1 mark) Any two appropriate points, 1 mark each	2 marks	

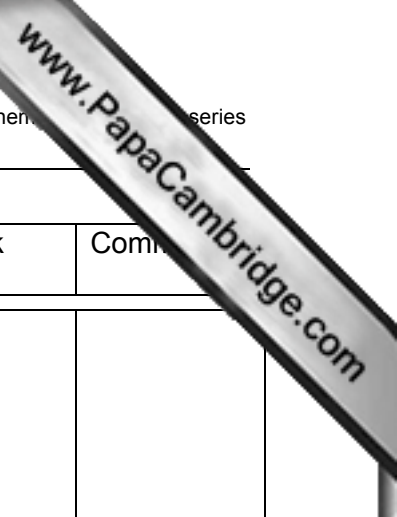


Section B

Question	Part	Sub Part	Marking Guidance	Mark	Comments
8	a	i	<p>Acrylic is strong and resistant to abrasion so will wear well with constant friction, is lightweight and warm to touch so feels good on feet, 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 less expensive than wool.</p> <p>Polyamide is abrasion resistant and improves durability of acrylic, is shrink resistant so may counteract acrylic's tendency to shrink, has little absorbency, can be heat-set to maintain shape, lightweight, has some elasticity so gives flex.</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 socks, 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 socks and their overall contribution to the blend. There will be some understanding 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. 6-7 marks 	7 marks	

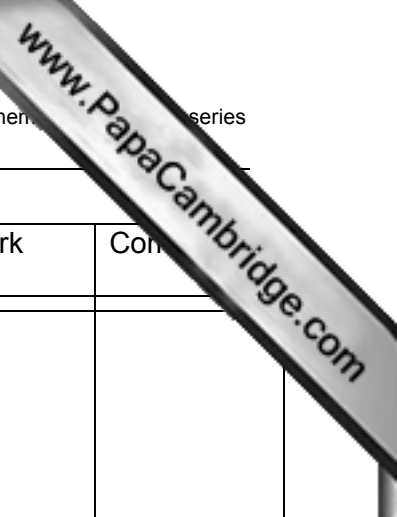


Question	Part	Sub Part	Marking Guidance	Mark	Comments
8	a	ii	<p>Elastane is very stretchy so makes socks easier to wear (1 mark)</p> <p>Only a small amount needed for good stretch (1 mark)</p> <p>Good recovery so maintains shape better (1 mark)</p> <p>Any 2 appropriate points, 1 mark each</p>	2 marks	
8	b	i	<p>The loops trap air so make the socks warmer to wear, the fabric will be softer against skin and cushion feet, loops aid transportation of moisture away from skin. The knitted structure adds to the stretch qualities allowing the socks to be put on easily and to mould to the shape and size of the foot. The knitted construction allows for seamless construction of the socks.</p> <p>Marks awarded as follows:</p> <ul style="list-style-type: none"> • Candidate shows little understanding of the function of the looped structure and provides little explanation. There will be many inaccurate and confused points. 0-2 marks <p>Sound understanding of the function of the looped structure with a range of points showing knowledge across a number of areas. Information will be accurate. 3-5 marks</p>	5 marks	
	b	ii	<p>e.g. loops may catch on sharp objects and snag, spoiling appearance, loops may catch on toes causing snagging and discomfort, loops may become matted during wear spoiling appearance looped construction may lead to large holes/ladders if a loop is broken.</p> <p>Identification of problem, 1 mark, Explanation of problem, 1 mark.</p>	2 marks	

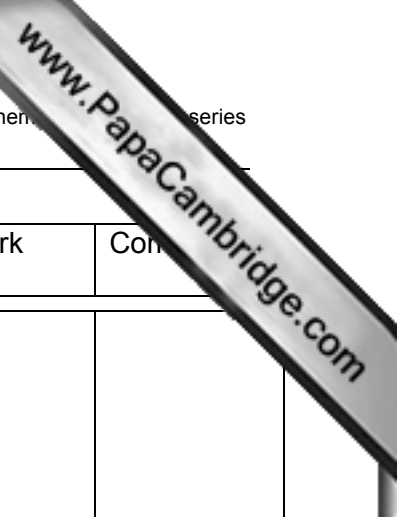


Question	Part	Sub Part	Marking Guidance	Mark	Comments
8	c		<p>The acrylic/polyamide blend is thermoplastic so excessive heat will cause it to soften and melt. Wash at 40 so as not to heat set fabric, because the fibres are strong and resist abrasion, they do not require reduced mechanical action, do not bleach as the socks are coloured, do not tumble dry to avoid heat setting fabric, do not iron as fabric will melt.</p> <p>Marks awarded as follows:</p> <ul style="list-style-type: none"> • Candidate shows little understanding for the advice given and will tend to explain the meaning of the symbols. There may be some inaccurate and confused points. 0-2 marks • Sound understanding of the meaning of the symbols and how they relate to the fabric qualities. Information will be detailed and accurate. 3-4 marks 	4 marks	

Question	Part	Sub Part	Marking Guidance	Mark	Comments
9	a	i	<p>Candidate should refer to arrangement of colour groups (1 mark) of warp threads arranged in loom as required (1 mark), weft thread changes colour as check is formed (1 mark).</p>	3 marks	

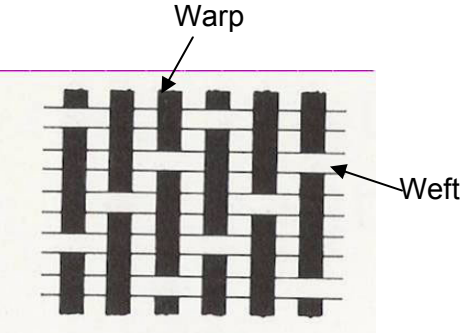
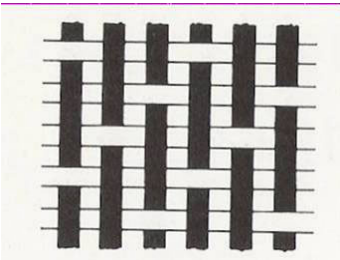


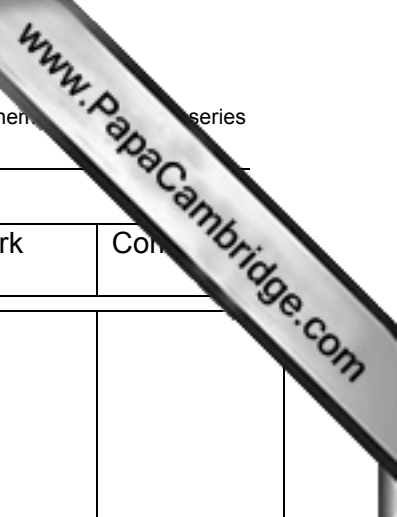
Question	Part	Sub Part	Marking Guidance	Mark	Comments
9	a	ii	<p>E.g. Wool is warm because of natural crimp soft, hardwearing, luxurious; resistant to soiling, resists creasing because of natural crimp, has low electrostatic charge because it is highly absorbent, flame retardant. But it is attacked by moths, scales on fibre can cause it to shrink when washed, high absorbency means it takes a long time to dry, it is expensive, it can irritate skin.</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 intended use. There will be confused and inaccurate information. 0-2 marks • Candidate shows understanding of the properties of wool but does not relate them in detail to the structure of the fibre. There will be a sound attempt to evaluate appropriateness of fabric for a throw. There may be minor confusion but most points will be accurate. 3-4 marks • Candidate shows sophisticated understanding of the fibre structure and properties and evaluates them in relation to the throw. Information will be detailed and accurate. 5-6 marks 	6 marks	
9	b	i	<p>e.g. (weft) knitted construction (1 mark), brushed/nap/fluffy (1 mark), brushed on both sides (1 mark), very soft (1 mark). Any 3 points, 1 mark each.</p>	3 marks	
9	b	ii	<p>e.g. polyester fleece has 'loft'/bulk (1 mark) and is able to trap air (1 mark) trapped air is an insulator (1 mark)</p>	3 marks	



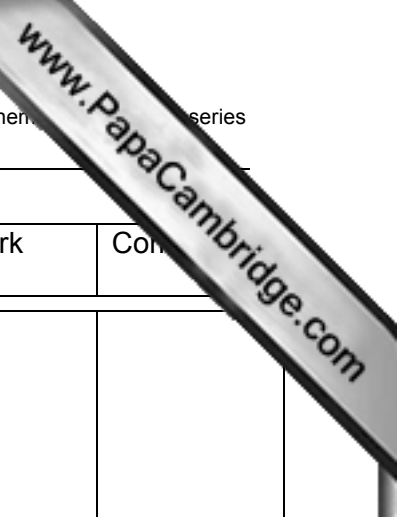
Question	Part	Sub Part	Marking Guidance	Mark	Comments
9	c		<p>Throw X: warp/loom yarns have been twisted/plaited together to give a multi-coloured fringe.</p> <p>Throw Y: edge has punched holes and a cut scalloped self fringe, may be laser cut, possible because the fabric is stable and does not fray, sealed edges are possible because of thermoplastic nature of fabric.</p> <p>Marks awarded as follows:</p> <ul style="list-style-type: none"> • Candidate provides some description of the different edge finishes but there is little explanation of how they relate to the fabric qualities. There will be some confusion. 0-2 marks • Detailed knowledge and understanding of the different edge finishes related to the qualities of the fabrics. Points will be clearly expressed and accurate. 3-5 marks 	5 marks	

Section C

Question	Part	Sub Part	Marking Guidance	Mark	Comments
10	a		<p>Candidate may respond through an annotated diagram and/or written description.</p> <p>Twill weave: weft yarns pass over 3 then under 1 warp yarns (1 mark), moving forward one yarn on each row (1 mark), to give a diagonal line (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="text-align: center;">  <p>(3 marks)</p>  <p>(2 marks)</p> </div>	3 marks	
10	b		<p>Denim is dyed with indigo/dark blue dye (1 mark)</p> <p>Which sits on the surface of the fabric (1 mark)</p> <p>And is not stable when rubbed (1 mark)</p> <p>Any 2 acceptable points, 1 mark each</p>	2 marks	

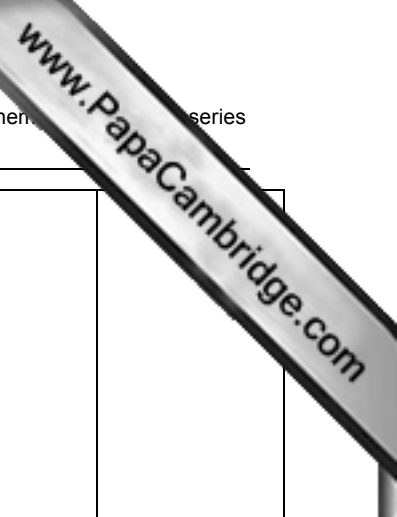


Question	Part	Sub Part	Marking Guidance	Mark	Comments
10	c		<p>e.g metal buttons, zips, studs and eyelets in keeping with the 'jeans' style and they will wear well, thread of contrasting colour used for decorative stitching, cotton tape for tie belt and straps to hold turn-ups in place.</p> <p>Marks awarded as follows:</p> <ul style="list-style-type: none"> • Candidate lists some components and will tend to describe them and relate their function rather than consider how they relate to the style. There may be some inaccurate and confused points. 0-2 marks • Detailed description of a range of components with sound consideration of how they have been used in relation to both function and style. Information will be detailed and accurate. 3-4 marks 	4 marks	
10	d	i & ii	<p>e.g. Reduce number and complexity of pockets, remove some decorative stitching, use fewer components, remove additional seams in centre of front and back legs, remove turn-ups and waist tie.</p> <p>Marks for each modification awarded as follows:</p> <ul style="list-style-type: none"> • Simplistic modification which will have little impact on costs – there may be a lack of clarity of what is intended and the change suggested may be a simple variation on a modification already described. Scant justification for modification suggested. 0-2 marks • Detailed information about a realistic modification with clear justification for the proposed change. There will be clear explanation of how the modification is to be achieved. Points will be clearly expressed and accurate. 3-5 marks <p>2 appropriate modifications, 5 marks each</p>	10 marks	

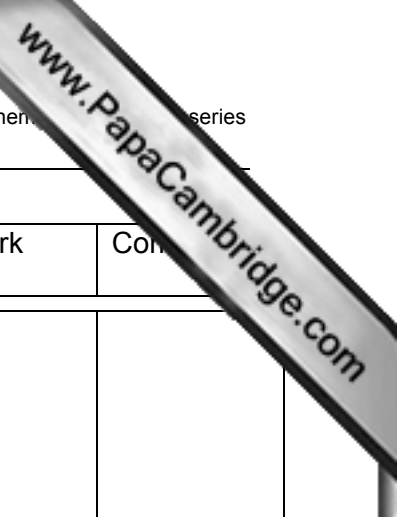


Question	Part	Sub Part	Marking Guidance	Mark	Comments
10	e	i & ii	<p>e.g. Areas to be checked include positioning of zip. size/shape of flap, fastening central, overall size of 'inner' pocket, length of darts at base of pocket, position of top stitching, width of centre pleat.</p> <p>Each QC check identified (1 mark) Detail of likely problem at a later stage of manufacture (2 marks)</p> <p>2 QC checks, 3 marks each</p>	6 marks	

Question	Part	Sub Part	Marking Guidance	Mark	Comments
10	f		<p>e.g. Denim is made from cotton which requires large amounts of pesticide and chemical fertilizers which can have adverse effects on workers' health. Land use for large cotton crops could be more effectively used to grow food for LEDCs. Farming of crops damages environment and changes landscape. Bleaching and dyeing of fabrics require vast amounts of water and produce toxic effluent, and do not biodegrade easily. When disposed of in landfill sites, chemicals leach out of fabric and metal components made from heavy metals.</p> <p>Fast changes in fashion encourage consumers to discard wearable jeans, low price outlets do not encourage the buying of better quality and longer lasting jeans. Many jeans are manufactured overseas which has implications for fuel used for transportation, fewer environmental controls in some LEDCs mean greater environmental damage.</p> <p>Organic cotton and coloured cotton growth are more eco-friendly.</p> <p>Cotton is very absorbent so takes a long time to dry, perhaps requiring the use of a tumble dryer, it also creases badly and will possibly require ironing – both of these activities use electricity.</p> <p>Large supermarket chains may force small local retailers out of business.</p>		



		<p>Marks awarded as follows:</p> <ul style="list-style-type: none"> • Basic information with evidence of only limited knowledge and understanding of moral and environmental issues. Candidate will give only superficial reasons for the environmental damage caused by jeans; there will typically be comments that pesticides cause environmental damage but specific problems will not be given. Information will be generalised rather than specific and there will be evidence of misunderstanding. 0-3 marks • Candidate shows knowledge of the different problems caused and will relate to denim jeans although there may be a lack of specific information. There will be a tendency to relate to a narrow area of environmental concern. At the top end, there will typically be good coverage of one area of concern, e.g. dyeing or pesticides. There may be elements of confusion and inappropriateness. 4-7 marks • Candidate shows detailed knowledge and understanding of the moral and environmental problems and relates specifically and accurately to jeans. There will be a wide range of varied points with clear, accurate and balanced explanation of the issues involved. 8-10marks 	<p>10 marks</p>	
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Question	Part	Sub Part	Marking Guidance	Mark	Comments
10	g		<p>This system allows manufacturers to meet customer orders quickly so retailers have products in stock as soon they become fashionable.</p> <p>Materials needed to make products are delivered to manufacturer as they are needed, reducing the need for storage and cuts the need to tie up money in stock waiting to be used. Manufacturing teams are multi skilled and are trained on new projects as they are required.</p> <p>The systems approach (may be referred to as Toyota system) is effective in increasing productivity and quality of products made. Retailers do not keep large stocks of goods waiting to be sold, thus reducing their costs.</p> <p>Marks awarded as follows:</p> <ul style="list-style-type: none"> • Candidate provides some obvious points about reducing costs but with little information about how this is achieved. There will be some inaccurate and confused points. 0-2 marks • Detailed knowledge and understanding of the various benefits of JIT with clear information of various ways in which this is achieved. Points will be clearly expressed and accurate. 3-5 marks 	5 marks	