

Mark Scheme (Results)

Summer 2007

GCSE

GCSE Engineering & Manufacturing
(5318/03)

Textiles and Clothing (5318/03)				
SECTION A				
Question		Expected answers		Mark allocation
5318_03_Q01a		Tick the two boxes below where the products belong to the textiles sector.		
1	(a)	<ul style="list-style-type: none"> • Synthetic fibres • Teflon coated fabric <p><i>If three boxes ticked max marks = 1 mark.</i> <i>If 4 boxes or more ticked no marks.</i></p>	2x1	
5318_03_Q01b		Tick the two boxes below where the products belong to the clothing sector.		
1	(b)	<ul style="list-style-type: none"> • Waterproof jacket • Dungarees <p><i>If three boxes ticked max marks = 1 mark.</i> <i>If 4 boxes or more ticked no marks.</i></p>	2x1	
(Total 4 marks)				

Question			Expected answers	Mark allocation	
5318_03_Q02a1			Naming each piece of equipment;		
2	(a)	1	<ul style="list-style-type: none"> • Pinking shears • Scissors • Pinking scissors • Pinking • shears <p><i>(accept any answer that makes reference to a specific pair of scissors or shears)</i></p>	1x1	(1)
5318_03_Q02b1			Explaining what each piece of equipment is used for.		
2	(b)	1	<p>An answer that makes reference to TWO of the following points:</p> <ul style="list-style-type: none"> • To cut fabric • To prevent fabric from fraying • To create a neat edge to fabric • Any other appropriate answer <p><i>E.g. Do not accept 'to cut threads'</i></p> <p><i>If the equipment named in part 2(a) is incorrect, no marks for part 2(a), but if it is a piece of equipment from the Textile and clothing, sector or no answer allow follow though, for a correct answer to 2(b) up to 2 mark.</i></p> <p><i>Do not accept explanation of use of NEEDLE as given in question</i></p>	2x1	

Question			Expected answers	Mark allocation	
5318_03_Q02a2			Naming each piece of equipment;		
2	(a)	2	<ul style="list-style-type: none"> • Overlocker machine • Overlocker • Overlocker sewing machine <p><i>Do not accept 'sewing machine' on its own</i></p>	1x1	(1)
5318_03_Q02b2			Explaining what each piece of equipment is used for.		
2	(b)	2	<p>An answer that makes reference to TWO of the following points:</p> <ul style="list-style-type: none"> • To sew fabric together • To finish off edges of fabric • To create a neat edge to a seam • Produces a strong join • Allows knitted garments to stretch • Any other appropriate answer • To create a frill edge <p><i>E.g. To sew fabric together (1) and finish off edges of fabric (1)</i></p> <p><i>If the equipment named in part 2(a) is incorrect, no marks for part 2(a), but if it is a equipment from the TEXTILE and clothing sector allow follow through, for a correct answer to 2(b), or no answer up to 2 marks.</i></p> <p><i>Do not accept explanation of needle as given in question</i></p>	2x1	
(Total 6 marks)					

Question	Expected answers		Mark allocation															
5318_03_Q03	Draw a straight line to link each term listed below to a key area. Each key area can be used more than once.																	
3		<p><i>No mark awarded where 2 or more lines are drawn from a term. Lines do not have to be straight but term and key area must be clearly linked.</i></p> <table border="0"> <thead> <tr> <th>Term</th> <th>Key area</th> </tr> </thead> <tbody> <tr> <td>Computer Integrated Manufacturing (CIM)</td> <td>Information & Communications Technology (ICT)</td> </tr> <tr> <td>Polymers</td> <td>Modern materials</td> </tr> <tr> <td>Process control</td> <td>Control technology</td> </tr> <tr> <td>Liquid crystal coated fabrics</td> <td>Information & Communications Technology (ICT)</td> </tr> <tr> <td>Internet sites</td> <td>Modern materials</td> </tr> <tr> <td>Databases</td> <td>Control technology</td> </tr> </tbody> </table>	Term	Key area	Computer Integrated Manufacturing (CIM)	Information & Communications Technology (ICT)	Polymers	Modern materials	Process control	Control technology	Liquid crystal coated fabrics	Information & Communications Technology (ICT)	Internet sites	Modern materials	Databases	Control technology	6x1	(6)
Term	Key area																	
Computer Integrated Manufacturing (CIM)	Information & Communications Technology (ICT)																	
Polymers	Modern materials																	
Process control	Control technology																	
Liquid crystal coated fabrics	Information & Communications Technology (ICT)																	
Internet sites	Modern materials																	
Databases	Control technology																	
(Total 6 marks)																		

Question		Expected answers		Mark allocation	
5318_03_Q04					
Name one other product from this sector, apart from weather protective jackets, that utilises in its manufacture control technology and modern materials.					
4	(a)	i	<p>Appropriate <u>product</u> such as:</p> <ul style="list-style-type: none"> • Biker gloves • Hiking boots • rucksacks • swimsuits • fire protective suit • bullet proof vest • performance sports clothing • oven gloves • performance sports footwear • accept brand name of a specific product <p><i>This list is not exhaustive; accept any product that contains Textiles and clothing products or association with the sector.</i></p>	1x1	(1)
Explain how the product can be used.					
4	(a)	ii	<p>Appropriate explanation of what the product does, may include reference to features and function</p> <ul style="list-style-type: none"> • To protect hands (1) of bike rider (1) • To support feet (1) when walking (1) • To hold products (1) and carry (1) <p><i>If product given in 4(a)(i) is not from this sector but is from one of the other engineering manufacturing sectors then allow follow through up to one mark. No answer to 4(a)(i) no marks for 4(a)(ii)</i></p>	2x1	

Question			Expected answers	Mark allocation	
State one stage in the manufacture of the product you named in 4(a)(i) where control technology is used.					
4	(b)	i	<ul style="list-style-type: none"> production planning (1) materials - supply and control (1) processing/production (1) assembly/finishing (1) packaging/dispatch (1) <p><i>If product given in 4(a)(i) is not from this sector but is from one of the other engineering manufacturing sectors then allow follow through.</i></p> <p><i>No answer to 4(a)(i) no marks for 4(b)(i)</i></p> <p><i>Accept a process that is within any of the stages (e.g. making / sewing / printing) must be appropriate to the product stated in 4(a)(i)</i></p>	1x1	(1)

Question		Expected answers	Mark allocation
Explain one advantage to the manufacturer of using control technology at this stage.			
4	(b)	ii	1x1 1x1
		<p>One mark for identifying advantage One mark for why</p> <p>Appropriate advantage to the manufacturer e.g.</p> <p>production planning, materials - supply and control, processing/production, assembly/finishing, packaging/dispatch</p> <p>Production planning</p> <ul style="list-style-type: none"> • speed (1) - faster than human application (1) <p>materials - supply and control</p> <ul style="list-style-type: none"> • cost control (1) - by less waste/faulty parts (1) • waste control (1) - by monitoring processes and quality control of processes (1) <p>processing/production</p> <ul style="list-style-type: none"> • energy conservation (1) - by control of energy into process (1) • waste control (1) - by monitoring processes and quality control of processes(1) • competitiveness (1) - faster rates of production (1) • product consistency (1) - by control of processes (1) • cost control (1) - by less waste/faulty parts (1) • efficiency (1) - by less waste/faulty parts (1) • speed (1) - faster than human application (1) <p>assembly/finishing</p> <ul style="list-style-type: none"> • energy conservation (1) - by control of energy into process (1) • waste control (1) - by monitoring processes and quality control of processes(1) • product consistency (1) - by control of processes (1) • cost control (1) - by less waste/faulty parts (1) • efficiency (1) - by less waste/faulty parts (1) • speed (1) - faster than human application (1) <p>packaging/dispatch</p> <ul style="list-style-type: none"> • packaging consistency (1) - by control of processes (1) • cost control (1) - by less waste/faulty parts (1) • efficiency (1) - by less waste/faulty parts (1) • speed (1) - faster than human application (1) • energy conservation (1) - by control of energy into process (1) • waste control (1) - by monitoring processes and quality control of processes (1) <p><i>Low response (1) or two low responses or detailed response If the answer in part (i) is a Manufacturing stage, allow follow through up to 2 marks.</i></p> <p><i>No answer to 4(b)(i) no marks for 4(b)(ii)</i></p>	

Question			Expected answers	Mark allocation	
State one modern material used in the manufacture of the product you named in 4(a)(i).					
4	(c)	i	<ul style="list-style-type: none"> • fusable interlining (1) - Vilene (1) • bonding (1) • Velcro (1) • lycra (1) • Teflon coated nylon (1) • Reflective tape • Coated fabrics • other appropriate modern materials - a material currently used for the given application <p>Accept brand name of a specific material</p> <p><i>If product given in 4(a)(i) is not from this sector but is from one of the other engineering manufacturing sectors then allow follow through.</i></p> <p><i>No answer to 4(a)(i) no marks for 4(c)(i)</i></p>	1x1	(1)
Describe how this modern material improves the characteristics of the product					
4	(c)	ii	<p>One mark for identifying improvement One mark for how</p> <ul style="list-style-type: none"> • density (1) - lower / weight (1) • handle (1) - improves the touch of fabric (1) • drape (1) - improves the way a garment hangs (1) • texture (1) - improves the way it feels (1) • colour (1) • softness (1) • shape (1) - garment fits better in body (1) • fit (1) - allows the garment to stretch and fit (1) • reflective (1) allows the garment to reflect in dark (1) • any other appropriate functional / aesthetic characteristic that relates to the improvement. <p><i>If answer in part 4(ai) is inappropriate but the material given in 4(ci) is appropriate allow follow through up to 2 marks. If no answer is given in part 4(ai) but the answer to part 4(cii) relates to the material stated in part 4(ci) allow follow through up to 1 mark. If no answer or incorrect answer given in part 4(ci) no marks awarded.</i></p>	1x1 1x1	
(Total 9 marks)					

Question			Expected answers	Mark allocation	
5318_03_Q05					
Give one example of where Computer-aided manufacture (CAM) is used by a manufacturer.					
5	(a)	i	<ul style="list-style-type: none"> materials supply / purchasing (generating orders) materials control (MRP1, automatic material issuing) production stages in (embroidery machines, garment machining, cutting machines) process control (data logging) storage (automated warehouse) distribution (automatic order picking) packaging (automatic labelling) 	1x1	(1)
Explain the benefit to the manufacturer of using Computer-aided manufacture (CAM) relating to the example given in 5(a)(i)					
5	(a)	ii	<p>One mark for identifying the benefit One mark for how</p> <ul style="list-style-type: none"> reduced ordering times (1) - automatic monitoring (1) improve quality / quality / accuracy (1) - control of processes (1) reduced wastage (1) - optimise production methods improved efficiency (1) - faster / quicker throughput (1) better process control (1) - in process monitoring (1) reduced labour (1) - automated processes (1) lower costs (1) - reduced wastage/faster/continuous production (1) safer processes (1) - less manual input (1) <p><i>Low response (1) or two low responses or detailed response If answer in part 5(ai) is inappropriate allow follow through up to 2 marks. If no answer given in part 5(ai) allow follow though up to 1 mark.</i></p> <p><i>Do not accept 'easier' without explanation</i></p>	1x1 1x1	

Question			Expected answers	Mark allocation	
5318_03_Q05					
Give one example of how Computer-aided design (CAD) is used by a manufacturer					
5	(b)	i	<ul style="list-style-type: none"> to create virtual products / drawings / 2D or 3D designs modelling show ideas show new product concepts modify existing products <p><i>E.g. 2D design software/package</i></p> <p><i>Do not accept software packages without explanation</i></p>	1x1	(1)
Explain the benefits to the manufacturer of using Computer-aided design (CAD) relating to the example given in 5(b)(i)					
5	(b)	ii	<p>One mark for identifying benefit One mark for how</p> <ul style="list-style-type: none"> conversion from 2D to 3D (1) - for modelling (1) quicker development time (1) - through simulation (1) easier to communicate i.e. ICT (1) - transfer of data (1) easy to make modifications / edit / change (1) - no paper hard copies (1) / computer data (1) lower initial development costs (1) - concurrent design processes (1) easy storage of data/information and retrieval (1) - interaction with databases (1) accurately drawn (1) - entry of accurate data on sizes (1) <p><i>Low response (1) or detailed response two low responses (1) e.g. its quicker and more accurate - only one mark If answer in part 5(b)(i) is inappropriate allow follow through up to 2 marks. If no answer given in part 5(b)(i) allow follow though up to 1 mark.</i></p> <p><i>Do not accept 'easier' without explanation</i></p>	1x1 1x1	

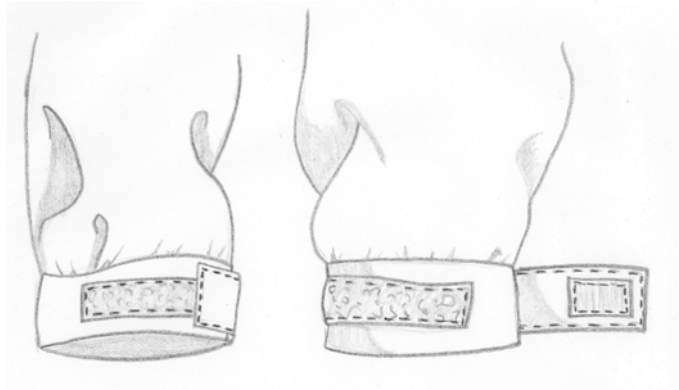
Question		Expected answers	Mark allocation	
5318_03_Q05c		Explain one benefit to the retailer of the manufacturer using Computer-aided manufacture (CAM)		
5	(c)	<p>One mark for identifying benefit One mark for how</p> <ul style="list-style-type: none"> • less returns (1) - more consistent products (1) • lower purchase price (1) - increased sales (1) • shorter order times (1) - greater use if ICT (1) • more sales (1) - better quality (1) • increased sales (1) - more profit (1) • better reputation / customer satisfaction (1) - more reliability (1) • increased profits (1) - less waste product (1) • better control of stock (1) - computer links to manufacturer (1) <p><i>Benefit must relate to distributor</i> <i>Low response (1) or detailed response</i> <i>Two low responses (1) e.g. it is cheaper and it is quicker - only one mark</i></p>	1x1 1x 2	
(Total 8 marks)				

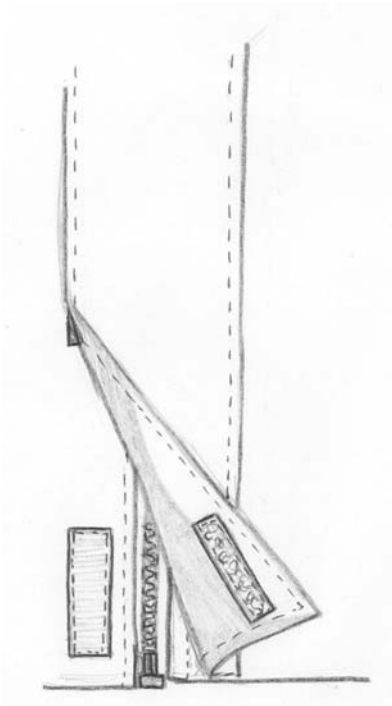
Question		Expected answers	Mark allocation
5318_03_Q06			
Name two examples of communications technology.			
6	(a)	<p><i>One mark per relevant example x 2</i></p> <ul style="list-style-type: none"> • Mobile phone / infra-red / blue tooth • Email / messaging • Internet / wireless / WIFI • Video conferencing • Electronic point of sale (EPOS) • EDI • ISDN • Texting • Phone • Fax / facisimile • Walkie Talkie <p><i>Do not accept:</i></p> <ul style="list-style-type: none"> • <i>Television /TV</i> • <i>Radio</i> • <i>Database</i> • <i>Computer</i> • <i>CAD</i> • <i>Laptop</i> 	2x1
Describe the traditional communication method it has replaced			
6	(b)	<p><i>One mark per relevant example x 2</i></p> <ul style="list-style-type: none"> • Mobile phone - Landline, Pager, Public address system • Email - Fax, Letter, memo, report sheets, telephone • Internet - Books, journals, buyers guides, catalogues, brochures • Video conferencing - Travel to central location • Electronic point of sale (EPOS) - Stock taking, manual ordering, income calculations • EDI - postal documents • ISDN - analogue transmission • Texting - phone / conversation • Phone - telegrams • Fax - letters / memos • Walkie Talkie - face to face <p><i>Mark allocation 1 per relevant example must relate to technology given in 6(a) and the manufacturer</i> <i>If part (a) not answered no mark awarded.</i></p>	1x1 1x1

Question		Expected answers	Mark allocation
Explain <u>one</u> benefit to the manufacturer of using this replacement new technology			
6	(c)	<p>An explanation that makes reference to:</p> <ul style="list-style-type: none"> • Mobile phone - flexibility / roaming location • Email - immediate permanent record • Internet - immediate vast access to information • Video conferencing - no travel expenses / less time wasted in travelling • Electronic point of sale (EPOS) - faster / more accurate • EDI - immediate transfer of information / no hard copies needed / less storage space • ISDN - more data transferred in parallel • Texting - stored record of transaction • Phone - immediate two way conversation • Fax - hard copy record • Walkie Talkie - Roaming location / flexibility / cost <p>Other benefits may be seen in the light of:</p> <p><i>Speed, accuracy, JIT, information retrieval, meets consumer demands, quicker, increased sales, reduced stock levels, reduced running costs, reduced lead times, calculation of sales, stock taking quicker/easier, storage space reduced, or any other appropriate response</i></p> <p><i>Benefits must relate to the manufacturer</i> <i>If only the replacement or original technology is given and the benefit is appropriate allow follow through up to 1 mark. 2 low responses 1 mark only.</i></p>	<p>1x1 1x1 OR 2x2 2x2</p>
(Total 8 marks)			

Question		Expected answers		Mark allocation
5318_03_Q07		Explain the benefits information and data handling systems have on:		
Production efficiency				
7	(a)	i	One mark for benefit One mark for how <ul style="list-style-type: none"> • Accurate information (1) - updated regularly (1) • Detailed information (1) - high storage space (1) • Fast access to data (1) - search / sort / query (1) • Improved planning (1) - short lead times (1) • Forecasting (1) - collects volumes data (1) • Cost of control (1) - better scheduling (1) • Waste control (1) - process / monitoring / control (1) • Reduced stock holding(1) - tracts / trends / JIT (1) • Training records (1) - skills monitoring (1) • Wage information (1) - easy of cost monitoring (1) • Or any other appropriate response <i>Low response (1) or detailed statement</i>	
marketing				
7	(b)	ii	One mark for benefit One mark for how <ul style="list-style-type: none"> • Accurate sales information (1) - instant feedback (1) • Detailed customer information (1) - tailoring products to target market (1) • Information for marketing strategies/campaigns (1) - tailoring products to target market (1) • Information for advertising campaigns (1) - choosing create media (1) • Profit information available (1) - models sales versas demand (1) • Ordering to meet sales faster (1) - meeting demand (1) • Or any other appropriate response <i>Low response (1) or detailed statement</i>	1x1 1x1 OR 2x1
				(Total 4 marks)
Total marks for Section A				45marks

SECTION B

<i>Question</i>		<i>Expected answers</i>	<i>Mark allocation</i>	
5318_03_Q08		In the boxes below, explain, using notes and sketches: the function of Velcro fastener on cuff		
8	(a)	<p>An answer that makes reference to three of the following points:</p> <ul style="list-style-type: none"> • To tighten or loosen cuff • To adjust cuff fastening • To fasten cuff storm flap • Secure fastening • Easy use fastener • Waterproof- weather resistant to stop cold water or getting into sleeve • Or any appropriate response <p>Do not accept descriptions of the appearance of Velcro or how it works e/g. hooks and loops</p> <p><i>Answer must contain both notes and sketches. Max two marks if only notes or sketches used.</i></p> <p>Example</p> <div style="text-align: center;">  </div>	3x1	(3)

Question		Expected answers	Mark allocation	
5318_03_Q08		In the boxes below, explain, using notes and sketches: the function of the storm flap.		
8	(b)	<p>An answer that makes reference to three of the following points:</p> <ul style="list-style-type: none"> • Protection to zip • Protection to wearer from the elements • Provides design appeal • Provides extra warmth • May mention fabric type and padding • Or any appropriate response <p><i>Do not accept descriptions of the appearance of Velcro or how it works e.g. hooks and loops</i></p> <p><i>Answer must contain both notes and sketches.</i> <i>Max two marks if only notes or only sketches used.</i></p> <p>Example</p> 	3x1	(3)
(Total 6 marks)				

Question			Expected answers	Mark allocation	
5318_03_Q09ai			Write in the table above the two missing stages in manufacturing weather protective jackets		
9	(a)	i	<ul style="list-style-type: none"> Marketing (1) Processing / Production / making (1) <p>Must be in this order</p> <p><i>Do not accept production planning</i></p>	1x1 1x1	
5318_03_Q09aii			State the stage where "swing Ticket" information is applied		
9	(a)	ii	<ul style="list-style-type: none"> Packaging (1) Stage 7 / stage seven (1) Seven / 7 (1) 	1x1	(1)
5318_03_Q09bi			Describe the following two stages in the manufacture of weather protective jackets.		
			Production planning		
9	(b)	i	<p>Appropriate descriptions including three of the following points:</p> <ul style="list-style-type: none"> Scheduling production (1) Converting order to production (1) Materials requirements (1) Labour requirements (1) Deadlines (1) Throughputs (1) Quality checks (1) Control points (1) Health and safety (1) Machinery / equipment requirements (1) Any other appropriate responses <p><i>E.g. The stage where the specification of the weather protective jackets is used by the planning team to set out all operations and schedule (1) the weather protective jackets through the specification department to meet the required delivery deadlines (1). This could include ordering any special materials or tooling (1) for making weather protective jackets.</i></p> <p><i>1 x 1 mark low response, 3 x 1 mark 3 low responses or up to 3 for detailed response</i></p>	3x1	(3)

Question			Expected answers	Mark allocation	
5318_03_Q09bii			Describe the following two stages in the manufacture of weather protective jackets.		
			Packaging and dispatch		
9	(b)	ii	<p>Appropriate descriptions including three of the following points:</p> <p><u>Packaging and Dispatch</u></p> <ul style="list-style-type: none"> • Adding swing ticket to jackets (1) • Application of protective packaging (1) • Assembling orders (1) • Application of codes, dates, tech info (1) • Picking orders (1) • Assembly loads (1) • Packing into outer boxes (1) • Making records (1) • Application of labels to boxes (1) • Sending to client (1) • Final visual checks (1) • Quality checks (1) • Any other appropriate response <p><i>E.g. The stage where the finished weather protective jackets are picked to order (1) have had any labels added (1) and are prepared for shipment having swing ticket added (1) are bagged and put into outer boxes (1)</i></p> <p><i>1 x 1 mark low response, 3 x 1 mark 3 low responses or up to 3 for detailed response</i></p>	3x1	(3)
(Total 9 marks)					

Question			Expected answers	Mark allocation	
5318_03_Q10ai			Name the specific material commonly used on weather protective jackets to make them:		
10	(a)	i	<ul style="list-style-type: none"> • Teflon (1) • PVC (1) • Polyurethane (pu) (1) 	1x1	(1)
5318_03_Q10aii			Name a specific material commonly used to make jackets breathable		
10	(a)	ii	<ul style="list-style-type: none"> • Gore-Tex • Mesh 	1x1	(1)
5318_03_Q10bi			Coatings can be used in the manufacture of weather protective jackets. Explain functions of coatings:		
10	(b)	i	<ul style="list-style-type: none"> • To provide a coverage on fabric • To create a smart fabric • To provide protection to a fabric • To provide protection to the wearer • Makes fabrics stain resistant • Makes fabrics water repellent • Makes fabrics breathable • Coating involves applying a polymer to the surface of a fabric • Any other appropriate response <p><i>Up to 3 x 1 mark low responses or up to 3 marks for a detailed response</i></p>	3x1	(3)
5318_03_Q10bii			Name two materials used as a coating:		
10	(b)	ii	<ul style="list-style-type: none"> • PVC (1) • Polyurethane (pu) (1) • Teflon (1) • Reflective materials (1) • Silicone (1) • Rubber (1) • Resin (1) • Acrylic (1) 	2x1	

<i>Question</i>		<i>Expected answers</i>	<i>Mark allocation</i>	
5318_03_Q10c		Explain how the use of modern materials has helped the manufacturer of weather protective jackets develop new products.		
10	(c)	<p>An explanation that makes reference to three of the following points:</p> <ul style="list-style-type: none"> • Colours • Textures • Easier manufacturing • Functionality • More varieties • Better fit • New markets i.e. Sports, medical, quick response fashion <p><i>Up to 3 x 1 mark low responses or up to 3 marks for a detailed response</i></p>	<p>1x1 1x1 1x1</p>	(3)
(Total 10 marks)				

<i>Question</i>			<i>Expected answers</i>	<i>Mark allocation</i>	
5318_03_Q11			Describe two quality control procedures used at the packaging stage of the manufacture of the packs of the weather protective jackets that utilise monitoring control technology.		
11	(a)	i-ii	<p>One mark for identifying QC procedure One mark for how</p> <ul style="list-style-type: none"> • Check for loose / long threads • Check for correct garment sizes - electronic gauges • Check for correct colour - colour scanners / digital images • Check for correct shape - digital images / gauges • Check for needle contamination - x rays, metal detection • Check swing ticket - brand / advertising • Check BSI Kite mark accreditation • Check for pack seals - scanners • Check for packaging misprints - scanners • Check for codes - scanners <p><i>Must have relevant monitoring / control technology link</i></p>		(4)

<i>Question</i>			<i>Expected answers</i>	<i>Mark allocation</i>
Explain one benefit of applying each quality control procedure, described in (a) above, to the manufacturer.				
11	(b)	i-ii	<p>One mark for identifying benefit to manufacturer One mark for how</p> <ul style="list-style-type: none"> • Reduced customer complaints (1) - better products (1) • Control of costs (1) - cheaper product / more profit (1) • Avoids faulty parts being assembled (1) - early detection (1) • Increased sales (1) - consistent product / lower prices (1) • User confidence (1) - consistent products / less returns (1) • Reduced waste (1) - control of manufacturing processes (1) • Reliable product (1) - monitoring standards / testing (1) • Detection of broken machinery (1) - damaged products (1) • Any other appropriate response <p><i>2 x 1 mark for Low response or 2 x 2 marks for detailed responses</i> <i>If no answer or inappropriate answer is given in part 11(a) allow follow through up to 1 mark each benefit.</i></p>	(4)

<i>Question</i>		<i>Expected answers</i>		<i>Mark allocation</i>	
Explain one benefit of applying each quality control procedure described in (a) above, to the consumer.					
11	(c)		<p>One mark for identifying benefit to consumer One mark for how</p> <ul style="list-style-type: none"> • Safer product to use (1) - reliable product (1) • Consistent product (1) - ensures standards are met (1) • Longer useable life (1) - don't have to buy as often (1) • Product reliability (1) - confidence in the company (1) • Lower prices (1) - less scrap / more efficient (1) • Any other appropriate response <p><i>2 x1 mark for low responses, 2 x 2 marks for detailed responses</i> <i>If no answer or inappropriate answer is given in part 11(a) allow follow through up to 1 mark each benefit.</i></p>		(4)
(Total 12 marks)					

<i>Question</i>			<i>Expected answers</i>	<i>Mark allocation</i>
5318_03_Q12			The utilisation of modern technology in the manufacture of weather protective jackets has brought changes. Explain these changes in:	
The types and sizes of the workforce				
12	(a)	i	<p>An explanation that makes reference to two of the following points:</p> <ul style="list-style-type: none"> • Smaller in size (1) • Higher level of skills (1) • Work patterns - shifts (1) • Better educated (1) • Higher level of development skills required (1) • Less employment for unskilled (1) • Updating and training often required (1) • Any other appropriate response 	
The working environment				
12	(a)	ii	<p>An explanation that makes reference to two of the following points:</p> <ul style="list-style-type: none"> • Cleaner (1) • Safety (1) • Quieter (1) • Healthier (1) • Any other appropriate response 	
The global environment				
12	(a)	iii	<p>An explanation that makes reference to two of the following points:</p> <ul style="list-style-type: none"> • Distribution - network increased (extra fuel) (1) • carbon emissions (1) • Operational efficiencies - less fossil fuels (1) • Recyclable materials (1) • Reduced waste - landfill (1) • Increased consumption of raw materials (1) • Any other appropriate response 	

<i>Question</i>		<i>Expected answers</i>		<i>Mark allocation</i>	
5318_03_Q12bc					
Describe one disadvantage that modern technology has had on the workforce					
12	(b)		<p>An explanation that makes reference to two of the following points:</p> <ul style="list-style-type: none"> • Less staff required (1) • Re-training required (1) • Redundancy threat (1) • Increased travel to work / centralisation (1) • Working pattern / 24/7 operation (1) • Distribution - network increased (extra fuel) (1) • carbon emissions (1) • Operational efficiencies - less fossil fuels (1) • Recyclable materials (1) • Reduced waste - landfill (1) • Increased consumption of raw materials (1) • Any other appropriate response 	2x1	
Describe one advantage that modern technology has had on the global environment					
12	(c)		<p>A description that makes reference to two of the following points:</p> <ul style="list-style-type: none"> • Less staff required (1) • Re-training required (1) • Redundancy threat (1) • Increased travel to work / centralisation (1) • Working pattern / 24/7 operation (1) • Distribution - network increased (extra fuel) (1) • Carbon emissions (1) • Operational efficiencies - less fossil fuels (1) • Recyclable materials (1) • Reduced waste - landfill (1) • Increased consumption of raw materials (1) • Any other appropriate response 	4x1	(4)
(Total 10 marks)					

<i>Question</i>		<i>Expected answers</i>	<i>Mark allocation</i>	
5318_03_Q13a		Describe how CAD is used by the manufacturer to increase market share		
13	(a)	<p>A description that makes reference to four of the following points:</p> <ul style="list-style-type: none"> • To design new or improved products quickly (1) • better retailer acceptance (1) • improved consumer acceptance (1) • To design new or improved packaging (1) • quicker to market (1) • 2D, 3D modelling to show customers (1) • Any other appropriate response 	4x1	(4)
5318_03_Q13b		Describe how CAM is used to control manufacturing costs		
13	(b)	<p>A description that makes reference to four of the following points:</p> <ul style="list-style-type: none"> • Machine settings are ideal (1) • Less energy lost / waste (1) • Only correct number manufactured (1) • Controlled environment uses less fuel / energy / utilities (1) • Correct ordering of materials (1) • Lower staffing requirement (1) • Costs more visible / easier traced (1) • Immediate alerts to out of standard performance (1) • Manufactured just in time (1) • Lower unit cost after initial investment (1) • Continuous operation (1) • Less downtime (1) • Any other appropriate response 	4x1	(4)
(Total 8 marks)				
Total Marks for Section B			55	
Total Marks for the whole Paper for section A and B			100	