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Mark Scheme (Results)

June 2011

GCSE Engineering/Manufacturing
(5EM03) Paper 3C

Textiles & Clothing

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General Marking Guidance

- All learners must receive the same treatment. Examiners must mark the first learner in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Learners must be rewarded for what they have shown they can do rather than penalised for omissions.
- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.
- There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the learner's response is not worthy of credit according to the mark scheme.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- When examiners are in doubt regarding the application of the mark scheme to a learner's response, the team leader must be consulted.
- Crossed out work should be marked UNLESS the learner has replaced it with an alternative response.
- Mark schemes will indicate within the table where, and which strands of QWC, are being assessed. The strands are as follows:

  i) Ensure that text is legible and that spelling, punctuation and grammar are accurate so that meaning is clear

  ii) Select and use a form and style of writing appropriate to purpose and to complex subject matter

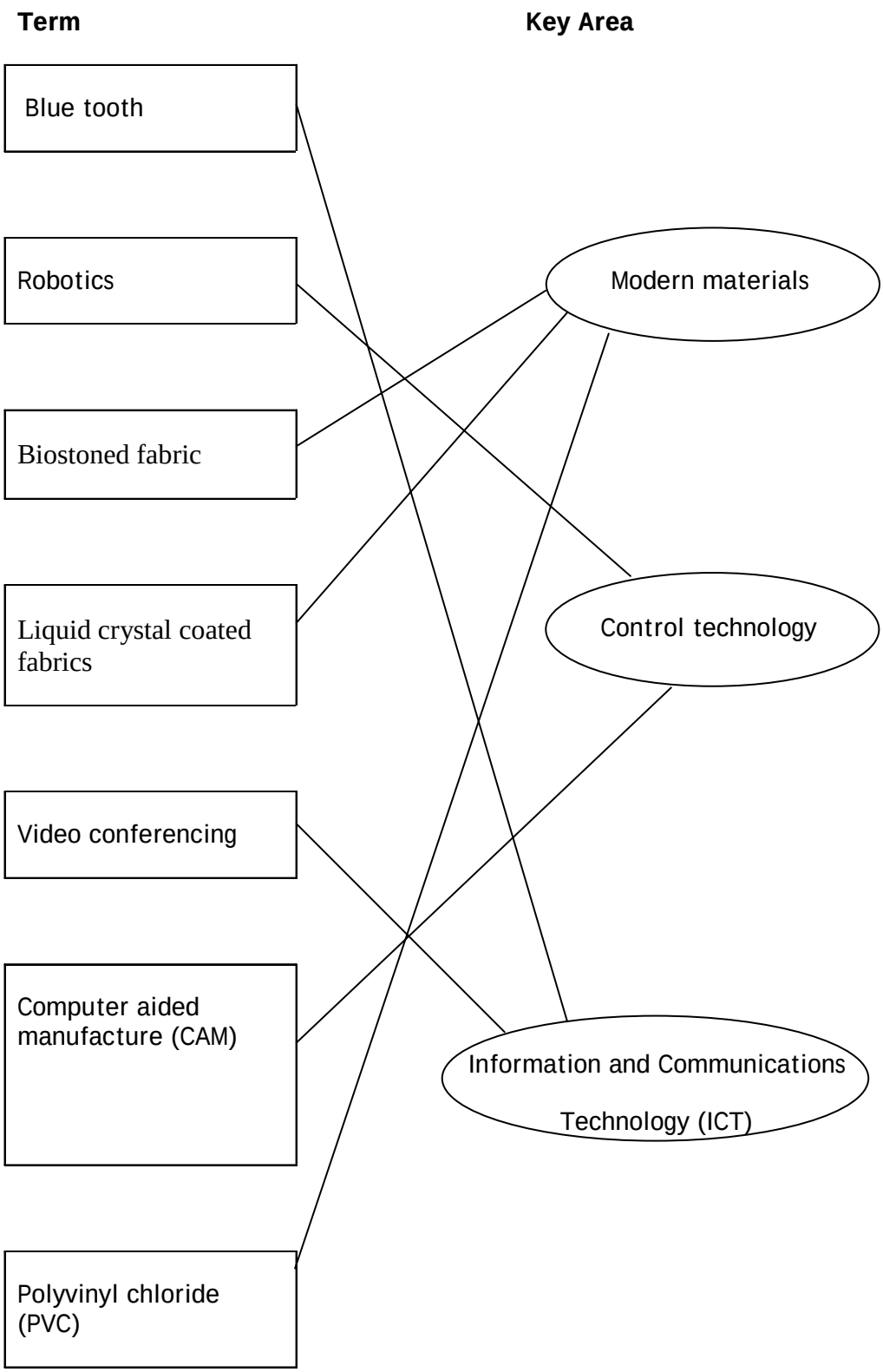
  iii) Organise information clearly and coherently, using specialist vocabulary when appropriate.

Question Number	Answer	Mark
1(a)	• Leather handbag • PVC Business card holder *If 3 boxes or more ticked - no marks.* (2 x 1)	**(2)**

Question Number	Answer	Mark
1(b)	• Bikini • Woollen hat *If 3 boxes or more ticked - no marks.* (2 x 1)	**(2)**

Question Number	Answer	Mark
2(a)	• button (s) *Accept any recognisable spelling (phonetic) of the answer above.* (1 x 1) • Pins (s) Accept any answer that makes reference to a pin, e.g. • Hat pin • Dressmakers pin • Steel pin *Accept any recognisable spelling (phonetic) of the answer above* *Do not accept needle.* (1 x 1)	**(2)**

Question Number	Answer	Mark
2(b)	An answer that makes reference to two of the following points: • used to fasten garments • used to fasten bodices • at the top of a zip (any suitable place is acceptable) • used as a decorative feature • used as a hidden fastener (2 x 1) An answer that makes reference to two of the following points: • used to sew/stitch/tack fabric • used for machine embroidery • used to attach components • can be used as a decorative feature (2 x 1)	**(4)**

Question Number	Answer	Mark
3	 *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.* (7 x 1)	**(7)**

Question Number	Answer	Mark
4(a)	Appropriate **product** such as e.g. • biker gloves • rucksacks / sports bags • swimsuits • fire protective suit • bullet proof vest • oven gloves • performance sports footwear • hiking boots • weather protective jackets • nightwear *This list is not exhaustive; accept any product associated with textiles and clothing sector.* (2 x 1)	**(2)**

Question Number	Answer	Mark
4(b)(i)	• kevlar • smart fabrics • water resistant fabrics • fireproof fabrics &/or coatings • rubber • Teflon coated fabric • moulded zip pullers • Other appropriate materials / a material currently used for the given application *If any product given in 4(a) is not from this sector but is from one of the other engineering / manufacturing sectors then allow follow through.* ***No answers to 4(a) no marks for 4(b)(i)*** (1 x 1)	**(1)**

Question Number	Answer	Mark
4(b)(ii)	One mark for identifying each benefit One mark for each explanation • Better functional characteristics (1) - weight /size/shelf life/protection/able to move freely/ease of operation/comfort (1) • Better wear characteristics (1) - strength/durability/protection (1) • Better aesthetic characteristics (1) - surface finish/texture/colour/appearance (1) • Meets requirements of intended markets (1) – appeal to target audience (1) • Better quality standards (1) – consistency/ reliability (1) • Reduced weight (1) – better strength to weight ratio (1) • Reduced cost (1) – quicker to assemble (1) • Any other appropriate functional / mechanical / aesthetic characteristic relating to the benefit (1) e.g. improves functional characteristic of the product (1) making it lightweight and easy to move (1) *If an answer in part 4(a) is inappropriate but the material given in 4(b)(i) is appropriate allow follow through up to 2 marks for each of the two benefits. If no answers are given in part 4(a) but the answer to part 4(b)(ii) relates to the material stated in part 4(b)(i) allow follow through up to 1 mark. If no answer or incorrect answer given in part 4(b)(i) no marks awarded for 4(b)(ii).* (2 x 1) (2 x 1)	**(4)**

Question Number	Answer	Mark
4(c)(i)	Must be related to the sector • Thermochromic inks (1) • Phosphorescent pigments (1) • Teflon coated fabrics/other coated fabrics (1) • Reflective tape (1) • Kevlar (1) • Nomex (1) • Or other appropriate smart material (2 x 1)	**(2)**

Question Number	Answer	Mark
4(c)(ii)	One mark for a characteristic One mark for the description • Thermochromic inks – inks that will change colour (1) when subjected to a change in temperature (1) • Teflon coated fabrics – improves the touch/appearance (1) and improves the stain resistance/less need to iron (1) • Reflective tape seen in the dark(1) as it reflects light (1) • Kevlar- very strong fabric(1)lightweight/comfortable/flexible (1) • Nomex- fire resistant(1) soft/flexible/strong/comfortable(1) • Or similar If at least one material given in 4(c)(i) is appropriate allow follow through up to 2 marks. If no answers or two incorrect answers given in part 4(c)(i) no marks awarded for 4(c)(ii). (2 x 1)	**(2)**

Question Number	Answer	Mark
5(a)	One mark for reason One mark for description • For accurate drawings (1) – through entry of accurate data on sizes (co-ordinates) (1) • Quicker development time (1) – through simulation (1) • Easier to communicate, i.e. ICT (1) – for 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) • Easier storage of data/information and retrieval (1) – interaction with databases (1) • Ability to convert from 2D to 3D (1) for modelling (1) *Low response (1) or 2 low responses (1) e.g. its quicker and more accurate – only one mark or detailed response (2)* *Do not accept 'easier' without explanation* (2 x 1)	**(2)**

Question Number	Answer	Mark
5(b)(i)	• Reduced lead times (1) • Higher production rates/efficiency(1) • Better quality output/control (1) • Complex operations can be carried out (1) • Reduced material costs (1) • Reduced waste/recycling/rework (1) • Reduced processing costs (1) • Reduced materials costs (1) • More consistent products (1) • Ability to produce bespoke/varied products (1) • Rapid prototyping (1) • Improved customer satisfaction (1) • Less chance of human error (1) • Reduced labour (1) • Increased safety (1) • Any other appropriate response *No repeats* (2 x 1)	**(2)**

Question Number	Answer	Mark
5(b)(ii)	One mark for identifying the benefit One mark for how • More consistent / accurate products (1) - fewer returns (1) • Lower purchase price (1) – increased sales (1) • Shorter ordering times (1) – improved response for customer (1) • Automated ordering (1) – in-demand products available (1) • Fewer customer complaints(1) - more repeat sales(1) • Ability to order bespoke/varied products (1) - improved customer satisfaction (1) • Better communication with manufacturer (1) – less likelihood of delivery errors (1) • Receipt and movement of goods inward improved (1) – simplified tracking procedures (1) • Increased number of customer referrals (1) resulting in a larger customer base (1) *Do not accept 'easier', or 'faster/quicker' without explanation* *Low response (1) or two low responses (2) or detailed response (2), for each of the benefits* (2 x 1) (2 x 1)	**(4)**

Question Number	Answer	Mark

6(a)	• Software/hardware (1) used to organise/monitor/control production (1)
	• Technologies used to facilitate production (1) through:
	  • Continuous operation (1)
	  • Improved reproducibility (1)
	  • Increased speed (1)
	  • Work in hazardous environments (1)
	• A computerised/automated method (1) for reducing unpredictability (1)
	• Any other appropriate response
	
	Low response (1) or two low responses (2) or up to two marks for a detailed response (2)
	If example included as an extension then award 2nd mark e.g. Controlling production (1) such as pick and place robots (1)
	(2 x 1)
		(2)

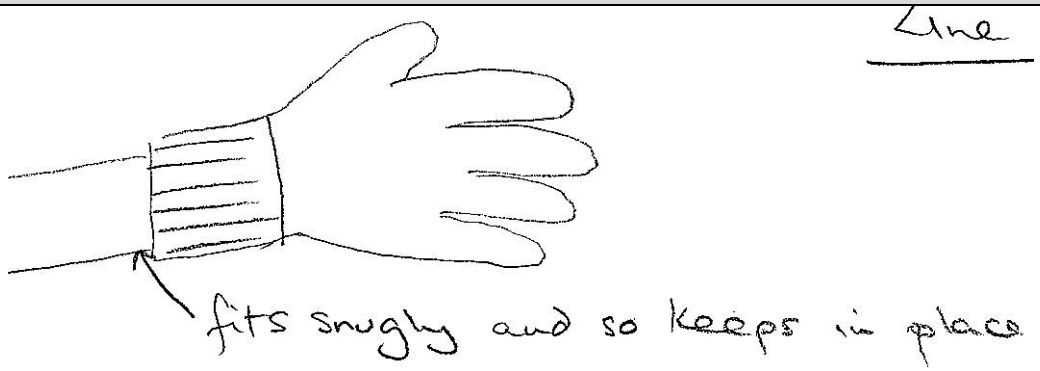
Question Number	Answer	Mark
6(b)(i)	• Process control (1) • PLCs (1) • Embedded computers (1**)** • CIM (1) • CAD/CAM links (1) • CAM (1) • CIE (1) • Quality control (1) • Automation (1) • Expert systems (1) *Do not accept examples that are about handling data and information e.g. databases / spreadsheets , CAD, computers, CNC* (1 x 1)	**(1)**

Question Number	Answer	Mark
6(b)(ii)	• Cam timers (1) • Manual placing (1) • Manual testing (1) • Manual recording (1) • Manual measurement (1) • Physical activity/employees (1) • Any other appropriate answer (1) *Must be a feasible replacement* *If answer in 6(b)(i) is not appropriate allow follow through* *If no answer in 6(b)(i) no mark for 6(b)(ii)* (1 x 1)	**(1)**

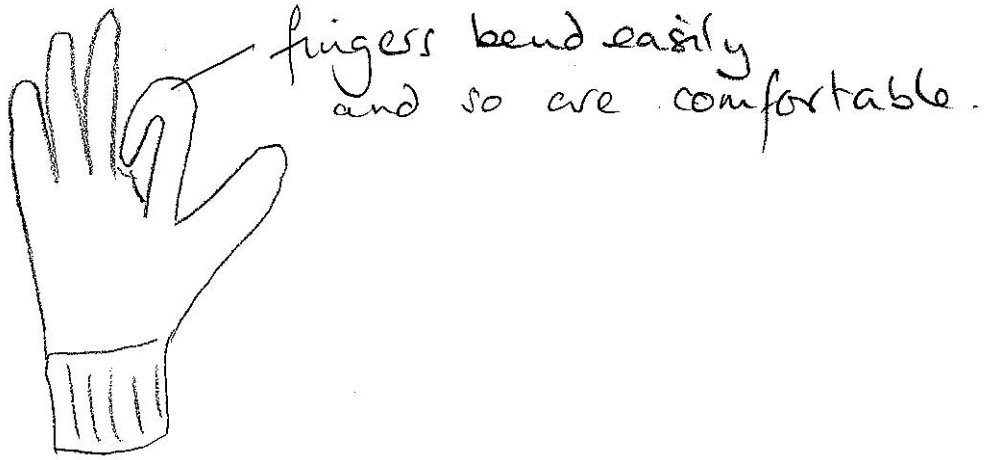
Question Number	Answer	Mark
6(b)(iii)	One mark for identifying the benefit One mark for how Examples: • Improved safety (1) minimal human input (1) • Ability to operate in extreme conditions (1) offering new manufacturing possibilities (1) • Does not make mistakes (1) as it does not tire (1) • Less injuries (1) as robotic sensors can detect danger (1) • Other safety features may not be necessary (1) as robots operate in a variety of environments (1) / as robots work in a guarded environment (1) / as robots work in sealed/no atmosphere (1) • Less need to pay compensation for injuries (1) reduces risk of bad publicity (1) *Response must relate to hazardous conditions* *Low response (1) or two low responses (1) or detailed response (2) per benefit* (2 x 1) (2 x 1)	**(4)**

Question Number	Answer	Mark
7(a)	One mark for identifying implication Up to two marks for how • Accurate sales information (1) – instant feedback (1) higher sales (1) • Detailed customer information (1) – tailoring product to target market (1) matching customer requirements better (1) • Information for marketing strategies/campaigns (1) – choosing correct media (1) • Information for advertising campaigns (1) – model sales versus demand (1) importance of correct parameters (1) • Profit / loss information available (1) – meeting demand (1) can be shown in graphical form (1) • Ordering to meet sales faster (1) meeting on demand (1) more efficient (1) • Information overload (1) too much detail to process (1) can lead to inaccuracies (1) • Incorrect data (1) can lead to wrong decisions being made (1) when marketing products (1) • Increased computer capacity may be needed (1) to store all marketing information (1) • Recall products (1) so they can deal with problems (1) • Or any other appropriate response *Low response (1) or detailed statement (3)* (1 x 3)	**(3)**

Question Number	Answer	Mark
7(b)	One mark for identifying implication Up to two marks for how • Less likelihood of material shortages (1) – reduced down time (1) better utilisation (1) • Highlight threshold stock levels (1) – automatic ordering (1) ensures continuous supply (1) • Reduction in order complexity/lead time (1) –ability to use JIT (1) • Receipt and movement of goods inward improved (1) – simplified tracking procedures (1) • Easier to allocate materials to individual products (1) for traceability (1) • Better communication with materials supplier (1) – less likelihood of delivery errors (1) • Automatic ordering (1) could lead to purchase of obsolete materials (1) which would be wasted (1) • 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 of data / modelling (1) • Cost of control (1) – better scheduling (1) • Reduced stock holding(1) – tracks trends / JIT (just in time) (1) • Inaccurate bill of materials / product data (1) could lead to incorrect ordering of materials (1) that will be wasted (1) • Or any other appropriate answer *Low response (1) or detailed statement (3)* (1 x 3)	**(3)**

Question Number	Answer	Mark
8(a)	 An answer that makes reference to any of the following points: • To fit snugly (1) • To protect from wind (1) rain (1) • Keep warm (1) • Keep dry (1) • Keeps in place (1) • Or similar *Answer must contain both notes and sketches.* *Max **two** marks if only notes or only sketches used.* (3 x 1)	**(3)**

Question Number	Answer	Mark
8(b)	 An answer that makes reference to any of the following points: • To protect hands on handlebars (1) • To help grip the handlebar (1) • Helps with shock absorption (1) • Is for comfort (1) • Waterproof membrane stops the insulated layer getting wet (1) • To keep wearer warm (1) stop wind entering (1) • To keep wearer dry (1) stop rain entering(1) • Or similar *Answer must contain both notes and sketches.* *Max **two** marks if only notes or only sketches used.* (3 x 1)	**(3)**

Question Number	Answer	Mark
8(c)	 An answer that makes reference to any of the following points: • To allow the fingers to move easily (1) • Helps fingers to bend (1) easily around handlebars (1) • To be comfortable (1) around the handlebars (1) • To reduce bulk (1) • For comfort (1) fingers can be pre-curved (1) • Allows fingers to extend (1) to operate the brake (1) • Or similar *Answer must contain both notes and sketches.* *Max **two** marks if only notes or only sketches used.* (3 x 1)	**(3)**

Question Number	Answer	Mark
9(a)(i)	• Materials supply and control/materials supply/materials control (do not accept 'supply' or 'control' on its own) • Assembly and finishing/assembly/finishing *Must be in this order* (2 x 1)	**(2)**

Question Number	Answer	Mark
9(a)(ii)	• Marketing • Stage 2/stage two • 2/ two (1 x 1)	**(1)**

Question Number	Answer	Mark
9(b)(i)	Appropriate descriptions including three of the following points (statements must be applicable to winter cycling gloves): • Scheduling production (1) • Converting order to production (1) • Materials requirements (1) • Labour requirements (1) • Deadlines (1) • Throughputs (1) • Machinery/equipment requirements (1) • Quality checks (1) • Control points (1) • Health and safety (1) • Storing (1) • Any other appropriate response (3 x 1) e.g. The stage where the manufacturer decides how the product is going to be made (1), what materials are needed (1) and what processes will be used during manufacturing (1). e.g. The stage where the specification of the winter cycling gloves is used by the planning team to set out all operations and to schedule (1) the winter cycling gloves through the production department to meet the required delivery deadlines (1). This could include ordering any special materials or consumables (1) and stating machinery requirements (1). *Up to 3 marks* *1 x 1 mark low response, 3 x 1 mark 3 low responses or up to 3 for detailed response*	**(3)**

Question Number	Answer	Mark
9(b)(ii)	Appropriate descriptions including three of the following points(statements must be applicable to winter cycling gloves): • Pairs boxed/bagged together (1) • Box items sent to retailers (1) • Bar coding applied to boxed sets of products (1) • Details sent to finance department for invoicing requirements (1) • Or similar, but must related to the manufacture of winter cycling gloves (3 x 1) e.g. At this stage the winter cycling gloves would be put into bigger boxes (1) and then sent to the customer (1). The details of this would then be sent to the customer to ask for the money that they owe (1). The big boxes might have bar codes on (1). *Up to 3 marks* *1 x 1 mark low response, 3 x 1 mark 3 low responses or up to 3 for detailed response*	**(3)**

Question Number	Answer	Mark
10(a)	Specific materials used for winter cycling gloves • Polyester • Neoprene • Insulating Material • Waterproof Membrane • Goretex • Thinsulate • Polartec • Any other appropriate answer *Accept any recognisable spelling (phonetic) of the answers above* *Do not accept generic answers, i.e. 'fabric'* (1 x 1)	**(1)**

Question Number	Answer	Mark
10(b)(i)	Any three of the following: • Grading • Lay Planning • Spreading (Fabric Spread On Surface) • Folding/Layering • Cutting • Die Cutting • Fusing/Bonding • Sewing • Moulding (With Heat) • Profile Sewing Systems • Other appropriate process 1 mark per response up to 3 Accept any recognisable spelling (phonetic) of the answers above. (3 x 1)	**(3)**

Question Number	Answer	Mark
10(b)(ii)	Appropriate explanation including three of the following points: • Quick method/fast production rate • Unlimited colours • High quality finish • Prints directly onto fabric • Flexible in a quick changing market • Prints complex designs inexpensively • Unit costs are low • Highly automated process • Or similar e.g. Digital printing is a high speed print process (1) that prints directly onto the surface (1) and is economical for very high volumes (1). e.g. After the initial set up costs, the unit cost is low (1) as it is a highly automated process (1) with a fast production rate (1). 1 x 1 mark low response, or up to 3 marks for detailed response (3 x 1)	**(3)**

Question Number	Answer	Mark
10(c)	An explanation that makes reference to three of the following points: • Improved aesthetics and 'feel' • Higher quality printing • Better ergonomics • Better functionality / strength • Longer lasting / durable • More consistent product • More accurate product • More reliable product • Safer product • Lower costs • Increased efficiency • Lower purchase price • Allows for product guarantee • Allows for increased range/variation of product • Lighter product • Appropriate-sized product • Or similar e.g. The use of modern materials has meant winter cycling gloves can be made from fabrics that make them more comfortable (1) and allow the cyclist to be protected from cold, wind and rain (1) whilst not impeding performance. (1) *1 x 1 mark low response, or up to 3 marks for detailed response* (3 x 1)	**(3)**

Question Number	Answer	Mark

11(a)	• The use of systems (1) to control:
	  • Machinery (1)
	  • Processes (1)
	• The use of control systems (1) to replace human operators (1)
	• The ability of a process (1) to operate without the need for human sensory input (1)
	• Mechanical devices that are operated electronically (1) and function automatically (1)
	• Or similar
	
	Low response (1) or two low responses (2) or up to two marks for a detailed response (2)
	If example included as an extension then award 2nd mark
	e.g. Controlling processes (1) such as using conveyor systems (1)
	
	(2 x 1)
		(2)

Question Number	Answer	Mark
11(b)(i)	Must have relevant automation technology link Examples of automation: • PLCs (1) to control processes in production (1) • Automated printing (1) of manufacturer logo (1) • Use of conveyor systems (1) to move the glove from one process to the next (1) • Embedded computers (1) to perform dedicated functions (1) • Remotely operated vehicles (1) moving gloves to dispatch or storage (1) • Any similar *Do not accept 'CIM' or 'CNC' without links to Automation* *Must relate to the production stage* *Low response (1) or two low responses (2) or detailed response (2) per example* (2 x 1) (2 x 1)	**(4)**

Question Number	Answer	Mark
11(b)(ii)	Must be appropriate to those described in (b)(i) and relate to the manufacturer, e.g. • Flexible production (1) leads to meeting customer requirements better (1) • Consistent results and quality (1) achieved through accurate use of technology (1) • Reduced human intervention (1) of plant means safer operation (1) • Accurate printing (1) better registration (1) • Reduced labour costs (1) as less people involved (1) • Safer method (1) as humans have less exposure (1) • Reduced customer complaints (1) as better quality product (1) • Control of costs (1) - lower unit cost as less waste (1) • Retailer confidence (1) through less complaints (1) • Customer confidence increased (1) through more reliable systems(1) • Reduced waste (1) as less mistakes being made (1) • Reduced energy costs (1) through increased efficiency (1) • Improved production rates (1) through reduced downtime (1) • Gives customers a variety of products in a quicker time (1) as faster production changeovers (1) *If answer in 11(b)(i) is inappropriate, allow follow through up to one mark. If no answer given in (b)(i), no mark.* *Low response (1) or two low responses (2) or detailed response (2)* (2 x 1)	**(2)**

Question Number	Answer	Mark
11(b)(iii)	Must be appropriate to those described in (b)(i) and relate to the consumer, e.g. • Consistent product (1) - controlled better (1) • Product reliability (1) - more likely to be produced to specification (1) • Reduced time to retail/shorter delivery times (1) as manufacturer can vary product to meet demand (1) • Able to read printed instructions /logos/information (1) because of sharper images (1) • Lower prices (1) less waste/quicker production (1) • Better availability (1) due to faster throughput • Better quality (1) through improved process control (1) • Better value (1) because production costs are reduced (1) • Product guarantee (1) as confidence in process (1) • Customer satisfaction (1) because of consistent products *If answer in 11(b)(i) is inappropriate, allow follow through up to one mark. If no answer given in (b)(i), no mark.* *Low response (1) or two low responses (2) or detailed response (2)* (2 x 1)	**(2)**

Question Number	Answer	Mark
11(c)	• Mechanisation provides assistance (1) with the muscular requirements of work only (1) • The use of operator controlled machines (1) to replace manual labour (1) • The use of machines (1) which are not automated (1) • Or similar E.g. Using automation, the cutting of the glove would be monitored by a control system (1), whereas mechanisation would only involve the use of a mechanical cutting tool (1) *Must refer to 'mechanisation' or 'machines' not just 'automation'* (2 x 1)	**(2)**

Question Number	Answer	Mark
12(a)(i)	• Mobile phone/infrared/bluetooth • Email/messaging • Internet/wireless/Wi-Fi • Video conferencing • EDI • ISDN • Texting • Phone • Walkie talkie • Fax • VoIP/Skype *1 mark per relevant type* *Do not accept: TV, CAD, radio, computer laptop/ database, EPOS* (2 x 1)	**(2)**

Question Number	Answer	Mark
12(a)(ii)	One mark for identifying the benefit One mark for how • Mobile phone – can talk to client when needed (1) flexibility/roaming location (1) • Email – can send or receive instructions that are accurate/can get or send written confirmation of instructions (1) immediate permanent record (1) • Internet – can order immediately/in real time (1) immediate vast access to information for inspiration/ideas etc (1) • Video conferencing – no travel expenses/less time wasted in travelling (1) but has face to face contact (1) • EDI – immediate transfer of information for prototyping or to suppliers/no hard copies needed/less storage space (1) by use of secure on-line facilities (1) • ISDN – more data transferred in parallel (1) faster response rate with supplier through use of technology (1) • Texting – can refer back to what message was given (1) stored record of transaction (1) • Phone – can clarify and confirm without having to re-visit the discussion later (1) immediate two way conversation (1) • Walkie talkie – can clarify and confirm without having to re-visit the discussion later (1) immediate two way conversation/flexibility/roaming location/cost (1) • Fax – can refer back to what message was given (1) stored record of transaction (1) • VoIP/Skype – can see images (1) and can use other functions on computer (1) Other benefits may be seen in the light of: • Speed, accuracy, information retrieval, meeting consumer deadlines, reduced lead times, fast exchange of ideas, opinions or any other appropriate reason *Answer must relate to technology given in 12(a)(i), up to 2 marks* *If only one mark is awarded for 12(a)(i) allow follow through* *If 12(a)(i) is not answered no mark awarded for 12(a)(ii)* (2 x 1)	**(2)**

Question Number	Answer	Mark
12(b)(i)	One application such as: • Dimensional / size checks • Functional checks • Positional checks • Printing checks • Properties testing • Foreign body check e.g. pins left in • Or similar *Must be within production stage* (1 x 1)	**(1)**

Question Number	Answer	Mark
12(b)(ii)	Description of how such as: • Size checks – by direct measurement or gauging/templates/optical sensors (1) and checking against drawing/specification/ tolerances (1) • Functional checks – assembly (1) • Positional checks – use of registration marks (1) • Printing checks – visual (1) logo position/use of colour bar (1) • Properties testing - in use testing (1) or destructive testing of final product (1) • Foreign body check – use a metal detector (1) to find the pins (1) *If no answer or incorrect answer for 12(b)(i) allow follow through up to 1 mark for a correct answer to 12 (b)(ii)* *Low response (1) or two low responses (2) or detailed response (2)* (2 x 1)	**(2)**

Question Number	Answer	Mark
12(b)(iii)	An explanation that makes reference to three of the following points: • Safer product to use • Easier product to use • Confidence in product reliability • Consistent product • Helps to maintain standards • Product reliability • Confidence in the company • Lower prices • Any other appropriate response *Must relate to the end user* (3 x 1)	**(3)**

Question Number	Answer	Mark
13	An explanation that makes reference to a combination of four of the following to a maximum of four marks **Workforce:** • Fewer jobs • Change in skills • Less employment for unskilled • Change in size • Retraining often required • Job insecurity • Different skills needed • Change in work patterns • Increased travel to work centralisation • Working pattern/ 24/7 operation • Less repetitive/boring work • Any other appropriate response **Working environment:** • Safer • Cleaner • Quieter • Healthier • Noise pollution • Any other appropriate response (4 x 1) *A maximum of 3 marks if only workforce/working environment considered*	**(4)**

Question Number	Answer	Mark
14 **QWC** **i, ii, iii**	**Indicative content** Discussion may address the following issues: • *Issue* ▪ Use of ICT enables a faster time to market for a wider range of winter cycling gloves • *Development* ▪ Product proliferation causes problems with using up resources and/or energy ▪ Over production causes waste in manufacture and results in waste to landfill ▪ Internet marketing encourages consumerism • *Issue* ▪ Use of modern and smart materials enabling a larger variety of gloves be available • *Development* ▪ Marketing of modern/smart materials with appealing characteristics/printing effects encourages further consumerism ▪ Problems associated with recycling some fabrics ▪ Irresponsible disposal of packaging causes litter and land pollution (landfill) • *Issue* ▪ Use of systems and control technology enabling more efficient production • *Development* ▪ Continuous production increases energy consumption • Or other appropriate answer/s (6 x 1)	**(6)**

Level	Mark	Descriptor
	0	No material deserving of reward
1	1-2	Learner identifies the issue(s) with no development OR identifies and develops one issue. Shows limited understanding of the issues. The learner uses everyday language and the response lacks clarity and organisation. Spelling, punctuation and the rules of grammar used with limited accuracy.
2	3-4	Learner identifies some issues with associated developments showing some understanding of the issues. The learner uses some technological/manufacturing/environmental terms and shows some focus and organisation. Spelling, punctuation and the rules of grammar used with some accuracy. Some spelling errors may still be found.
3	5-6	Learner identifies a range of issues with associated developments showing a detailed understanding of the issues, including those associated with the conflict between efficient/modern technologies and sustainability. The learner uses a range of appropriate technological/manufacturing/environmental terms and shows good focus and organisation. Spelling, punctuation and the rules of grammar used with considerable accuracy.

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