

GCE

Design and Technology

H405/02: Problem solving in fashion and textiles

A Level

Mark Scheme for June 2025

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This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which marks were awarded by examiners. It does not indicate the details of the discussions which took place at an examiners' meeting before marking commenced.

All examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes should be read in conjunction with the published question papers and the report on the examination.

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MARKING INSTRUCTIONS

PREPARATION FOR MARKING

RM ASSESSOR

1. Make sure that you have accessed and completed the relevant training packages for on-screen marking: *RM Assessor Online Training: OCR Essential Guide to Marking*.
2. Make sure that you have read and understood the mark scheme and the question paper for this unit. These are available in RM Assessor
3. Log-in to RM Assessor and mark the **required number** of practice responses (“scripts”) and the **required number** of standardisation responses.

MARKING

1. Mark strictly to the mark scheme.
2. Marks awarded must relate directly to the marking criteria.
3. The schedule of dates is very important. It is essential that you meet the RM Assessor 50% and 100% (traditional 40% Batch 1 and 100% Batch 2) deadlines. If you experience problems, you must contact your Team Leader (Supervisor) without delay.
4. If you are in any doubt about applying the mark scheme, consult your Team Leader by telephone, email or via the RM Assessor messaging system.
5. **Crossed-Out Responses**
Where a candidate has crossed out a response and provided a clear alternative then the crossed-out response is not marked. Where no alternative response has been provided, examiners may give candidates the benefit of the doubt and mark the crossed-out response where legible.

Rubric Error Responses – Optional Questions

Where candidates have a choice of question across a whole paper or a whole section and have provided more answers than required, then all responses are marked and the highest mark allowable within the rubric is given. Enter a mark for each question answered into RM Assessor, which will select the highest mark from those awarded. *(The underlying assumption is that the candidate has penalised themselves by attempting more questions than necessary in the time allowed.)*

Multiple-Choice Question Responses

When a multiple-choice question has only a single, correct response and a candidate provides two responses (even if one of these responses is correct), then no mark should be awarded (as it is not possible to determine which was the first response selected by the candidate).

When a question requires candidates to select more than one option/multiple options, then local marking arrangements need to ensure consistency of approach.

Contradictory Responses

When a candidate provides contradictory responses, then no mark should be awarded, even if one of the answers is correct.

Short Answer Questions (requiring only a list by way of a response, usually worth only one mark per response)

Where candidates are required to provide a set number of short answer responses then only the set number of responses should be marked. The response space should be marked from left to right on each line and then line by line until the required number of responses have been considered. The remaining responses should not then be marked. Examiners will have to apply judgement as to whether a 'second response' on a line is a development of the 'first response', rather than a separate, discrete response. *(The underlying assumption is that the candidate is attempting to hedge their bets and therefore getting undue benefit rather than engaging with the question and giving the most relevant/correct responses.)*

Short Answer Questions (requiring a more developed response, worth two or more marks)

If the candidates are required to provide a description of, say, three items or factors and four items or factors are provided, then mark on a similar basis – that is downwards (as it is unlikely in this situation that a candidate will provide more than one response in each section of the response space).

Longer Answer Questions (requiring a developed response)

Where candidates have provided two (or more) responses to a medium or high tariff question which only required a single (developed) response and not crossed out the first response, then only the first response should be marked. Examiners will need to apply professional judgement as to whether the second (or a subsequent) response is a 'new start' or simply a poorly expressed continuation of the first response.

6. Always check the pages (and additional objects if present) at the end of the response in case any answers have been continued there. If the candidate has continued an answer there, then add the annotation 'SEEN' to confirm that the work has been seen and mark any responses using the annotations in section 11.
7. There is a NR (**No Response**) option. Award NR (No Response):
 - if there is nothing written at all in the answer space
 - OR if there is a comment which does not in any way relate to the question (e.g., 'can't do', 'don't know')
 - OR if there is a mark (e.g., a dash, a question mark) which is not an attempt at the question.

Note: Award 0 marks – for an attempt that earns no credit (including copying out the question).

8. The RM Assessor **comments box** is used by your Team Leader to explain the marking of the practice responses. Please refer to these comments when checking your practice responses. **Do not use the comments box for any other reason.**
9. Assistant Examiners will send a brief report on the performance of candidates to their Team Leader (Supervisor) via email by the end of the marking period. The report should contain notes on particular strengths displayed as well as common errors or weaknesses. Constructive criticism of the question paper/mark scheme is also appreciated.
10. For answers marked by levels of response:
- To determine the level** – start at the highest level and work down until you reach the level that matches the answer
 - To determine the mark within the level**, consider the following:

Descriptor	Award mark
On the borderline of this level and the one below	At bottom of level
Just enough achievement on balance for this level	Above bottom and either below middle or at middle of level (depending on number of marks available)
Meets the criteria but with some slight inconsistency	Above middle and either below top of level or at middle of level (depending on number of marks available)
Consistently meets the criteria for this level	At top of level

11. Annotations

Annotation	Meaning
	Blank Page – this annotation must be used on all blank pages within an answer booklet (structured or unstructured) and on each page of an additional object where there is no candidate response.
	Tick
	Benefit of doubt
	Error carried forward
	Noted but no credit given
	Level 1 response
	Level 2 response
	Level 3 response
	Level 4 response
	Highlighter for Level responses

12. Subject Specific Marking Instructions

INTRODUCTION

Your first task as an Examiner is to become thoroughly familiar with the material on which the examination depends. This material includes:

- the specification, especially the assessment objectives
- the question paper
- the mark scheme.

You should ensure that you have copies of these materials.

You should ensure also that you are familiar with the administrative procedures related to the marking process. These are set out in the OCR booklet Instructions for Examiners. If you are examining for the first time, please read carefully Appendix 5 Introduction to Script Marking: Notes for New Examiners.

Please ask for help or guidance whenever you need it. Your first point of contact is your Team Leader.

Question	Answer	Mark	Guidance
1*	Indicative Content: The natural characteristics of the fabric used in the design. • Cotton canvas can be a twill or plain weave which is strong. • Cotton canvas and leather suede are thick • Heavy duty cotton canvas can cope with the weight from the additional pockets and weight in them from tools. • Cotton canvas is strong when wet and resists abrasion well. This is good as it will have tools added and removed frequently during use, so it needs to withstand this. The wearer could be outside or using in a damp environment. • Cotton and suede are durable. • Cotton is biodegradable and can be recycled. It could also be repaired if needed by adding patches or reattaching. • Suede is tough so it will withstand the points and sharp ends of tools such as screwdrivers in the pouches and stop them from sticking into the wearer or dropping out. If crouching or bending, the thicker suede on pockets will stop the tools from digging into the legs. • Suede can take a lot of weight and does not lose its shape easily so over time the tools should not start dropping out. The suitability of the components named in the product description. • The parachute clip will be adjustable which means that the wearer can make the belt smaller or larger to fit them. • The parachute clip is quick release and usually strong so it does not come undone easily. It should be a heavy duty one that resists weakening over time. It is easier to use than a belt buckle as it can be adjusted easily and is easier to put on and off. • The metal poppers are an easy close mechanism and can be pulled open quickly. They do not tend to become loose over time and keep the pocket secure if working at height, the wearer would know the pocket is shut properly. • Eyelets will keep the pockets attached with a stronger connection than just stitching. The fabrics are unlikely to come undone and can withstand more pressure than stitching.	16 All responses should be in relation to the information provided. Responses are likely to include evidence of all bullet points (see examples). Candidates may extract information from the Resource Booklet. Any such lifted information can be used in support of the critical evaluation but no marks should be awarded simply for duplicating text. There is no analysis or evaluation in Level 1.	Level 4 (13-16 marks) A comprehensive evaluation of the suitability of the tool belt for its intended purpose. A comprehensive product analysis is evident. Comprehensive understanding of the four elements specified in question. Information in RB is used effectively to fully exemplify the points being made. Well-constructed response in relation to question with a clear and developed narrative. <i>There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated.</i> Level 3 (9-12 marks) A good evaluation of the suitability of the tool belt for its intended purpose. A good product analysis is evident. Good understanding of typically at least three elements

Question	Answer	Mark	Guidance
	• Polyester thread will be more hardwearing than cotton thread. It is very strong. Any ergonomic considerations. • A variety of pockets so that all different tools can be accommodated. • Belt can be worn in a position that is most comfortable for the wearer, as high or low on the waist as preferred and as loose or tight as required. • There are three pockets which would help the wearer to organise tools so they are easier to choose and use whilst working. • The loops can be quick access for tools like hammers and help the wearer to work efficiently and safely so they are less likely to drop items or leave them on the floor and become a trip hazard. • Having a belt with easy access reduces the need to bend to pick tools up. Having the pockets at the front reduces twisting and stretching. • Adjustable belt can make it more comfortable for the wearer. • Weight can be distributed more evenly across the belt if needed. • Depth of pockets will be within reach and deep enough so that tools do not drop out easily. The extent to which the tool belt meets the key features of workwear. • The choice of heavy-duty cotton canvas and suede will reduce the chance of injury from sharp points for the wearer. They are thicker fabrics. All fabrics are durable so the wearer can rely on the belt and it will last a long time. • There are a range of pockets and loops to accommodate different types of tools for a range of activities. Also pockets with fasteners. It is not specific to any particular trade, so could be worn by anyone and due to the different sizes of pockets, the relevant tools and equipment should still fit. • Does not have stretch – could have an elasticated band instead of fastener, but parachute clip is adjustable. So it could be shared or adapted when required. • All fabrics and components are durable and hardwearing. Any other valid suggestion.		specified in question. Information in RB is used for the most part effectively to exemplify points being made although one or two opportunities are missed. Well-constructed response in relation to question although one or two opportunities missed to develop narrative. <i>There is a line of reasoning presented with some structure. The information presented is in the most part relevant and supported by some evidence.</i> Level 2 (5-8 marks) A sufficient evaluation of the suitability of the tool belt for its intended purpose. Sufficient product analysis is evident. Sufficient understanding of typically two of the elements specified in question. Information in RB is used to exemplify some points being made although much more could

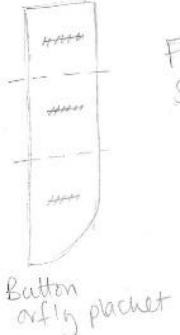
Question			Answer	Mark	Guidance
					have been done to exploit the stimulus material available. Reasonable response in relation to the question although narrative at times lacks depth and cohesion. <i>The information has some relevance and is presented with limited structure. The information is supported by limited evidence.</i> Level 1 (1-4 marks) A limited evaluation of the suitability of the tool belt for its intended purpose. Limited product understanding is evident. Limited understanding of typically one element specified in question. Use of information from the RB is used in a simplistic way and adds limited value to the points being made. Limited response in relation to question. Narrative is basic and unstructured.

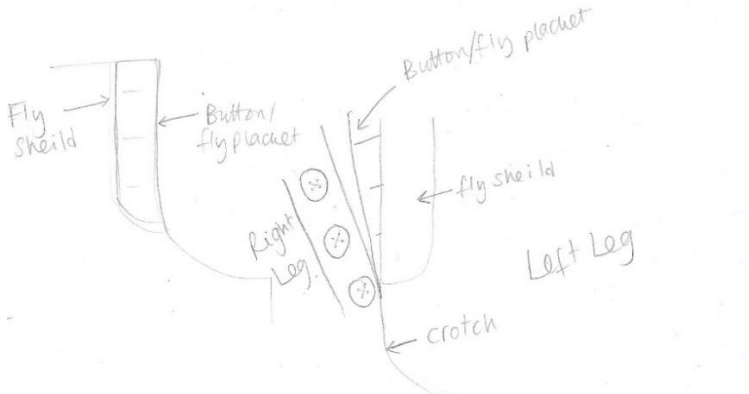
Question			Answer	Mark	Guidance
					<i>The information is basic and communicated in an unstructured way. The information is supported by limited evidence and the relationship to the evidence may not be clear.</i> 0 marks = No response or no response worthy of credit.

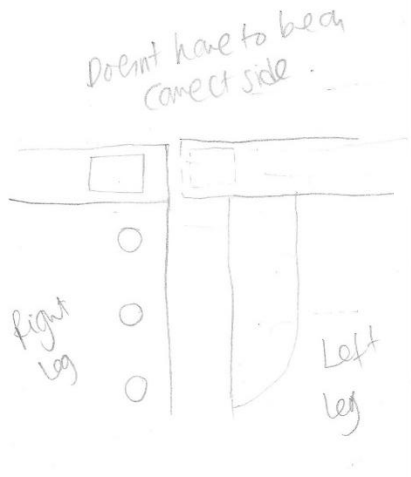
Question	Answer	Mark	Guidance
2 *	Indicative content: The properties of the smart or modern fibres and fabrics used. • Polyester microfibre is durable. • Laminated polyester is resistant to wear to help make kneeling more comfortable and less likely to cause injury over time. • Gore-Tex is breathable which makes it comfortable to wear in different temperatures and weather conditions. • The ripstop cotton is less likely to wear out in heavy use areas such as pockets, knees and between legs. If it does tear or begin to degrade then the tears or damage will not spread. • Polyester microfibre that is laminated is water resistant, so the wearer does not need to worry about being uncomfortable when working – if they do a lot of kneeling or working on the ground. • Microfibre and tightly woven which makes them softer and more comfortable to wear. They are light. • Cotton is comfortable against the skin and can be cool to wear. The wearer will need to focus on the task they are completing so would not want a distraction from ill-fitting or clothing that is too bulky or hot. Any repair, maintenance and aftercare issues. • Gore-Tex can be re-waterproofed if needed. This can be done at home and would be useful to maintain the function of the trousers as they are likely to last a long time due to the fabric being very hardwearing and durable. • Cotton is easy to wash and care for. They could be repaired easily with patches/stitching. Doing repairs to the Gore-Tex trousers may be less successful. • The Gore-Tex trousers can be washed but they usually can not be tumble dry which may make them difficult to care for as they may take longer to dry. • The knee patches on the cotton trousers can be removed, which means they could be replaced removed entirely if not needed. The Velcro makes them easy to reattach but this may wear out in time.	12 All responses should be in relation to the information provided. Candidates may extract information from the Resource Booklet. Any such lifted information can be used in support of the analysis but no marks should be awarded simply for duplicating text. There is no analysis or evaluation in Level 1.	Level 4 (10-12 marks) A comprehensive analysis of the two products. Comprehensive understanding of the three elements specified in question. Information in RB is used effectively to fully exemplify the points being made. Well-constructed response in relation to question with a clear and developed narrative. <i>There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated.</i> Level 3 (7-9 marks) A good analysis of the two products. Good understanding of typically at least two elements specified in question. Information in RB is used for the most part effectively to exemplify points being made although one or two opportunities are missed. Well-constructed response in relation to question although one or two opportunities not taken to develop narrative.

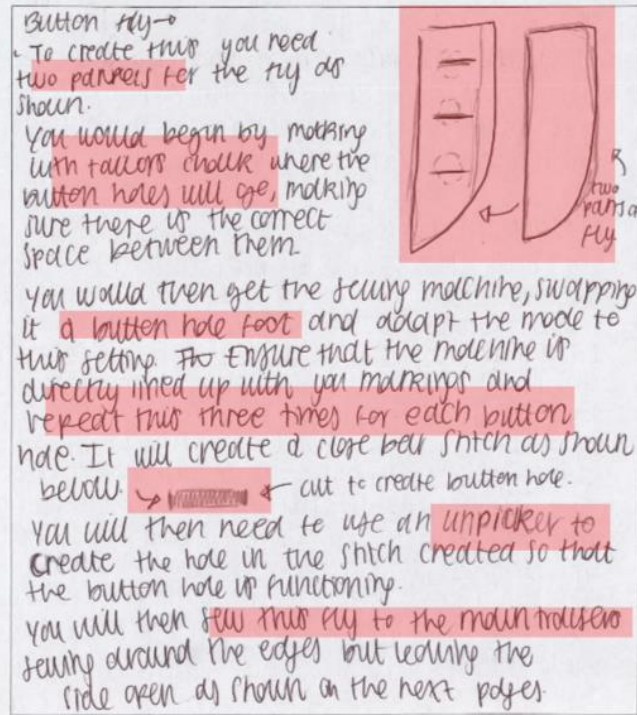
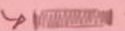
Question	Answer	Mark	Guidance
	- Elastic waist in Gore-Tex trousers may not stay in shape as long as the trousers, but the cotton ripstop trousers could have replacement button/zip. Assessment of the product lifecycle, particularly at disposal. - Consideration to lifecycle has been made by making the areas of the trousers that are likely to wear out most quickly more durable. Both feature reinforced knee patches using synthetic fibres which would be durable. They can also be adapted to suit the users need through the additional of knee pads. - Durable fabrics will extend the life of the trousers and double stitching on the ripstop cotton trousers makes them less likely to tear or fray at stress points on seams. - Cotton trousers would biodegrade so they could be disposed of, the cotton could also be recycled, used for repairs on other garments or the fabric used as rags by the tradesperson as it would still have the characteristics of cotton. - Gore-Tex is usually a synthetic fibre which means it will not biodegrade, and therefore its disposal would be destined for landfill. Similarly, the polyester/microfibre patches on both trousers would not biodegrade. - The manufacturer of the Gore-Tex fibres may be part of a scheme to recycle fibres/fabrics at the end of their life. This involves them receiving products and either repairing or repurposing products. - The components such as zips, buttons, piping, may still be useful so could be removed and recycled. Any other valid suggestion.		<i>There is a line of reasoning presented with some structure. The information presented is in the most part relevant and supported by some evidence.</i> Level 2 (4-6 marks) A sufficient discussion of the issues that would be considered. Sufficient understanding of typically two elements specified in question. Information in RB is used to exemplify some points being made although much more could have been done to exploit the stimulus material available. Reasonable response in relation to the question although narrative at times lacks depth and cohesion. <i>The information has some relevance and is presented with limited structure. The information is supported by limited evidence.</i> Level 1 (1-3 marks) A limited discussions of the issues that would be

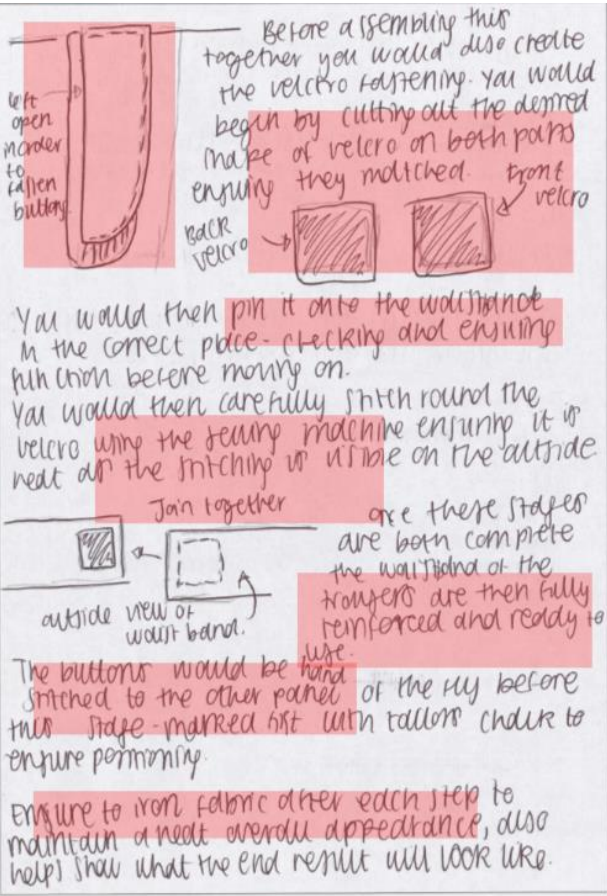
Question			Answer	Mark	Guidance
					considered. Limited understanding of typically one element specified in question. Use of information from the RB is used in a simplistic way and adds limited value to the points being made. Limited response in relation to question. Narrative is basic and unstructured. <i>The information is basic and communicated in an unstructured way. The information is supported by limited evidence and the relationship to the evidence may not be clear.</i> 0 marks = No response or no response worthy of credit.

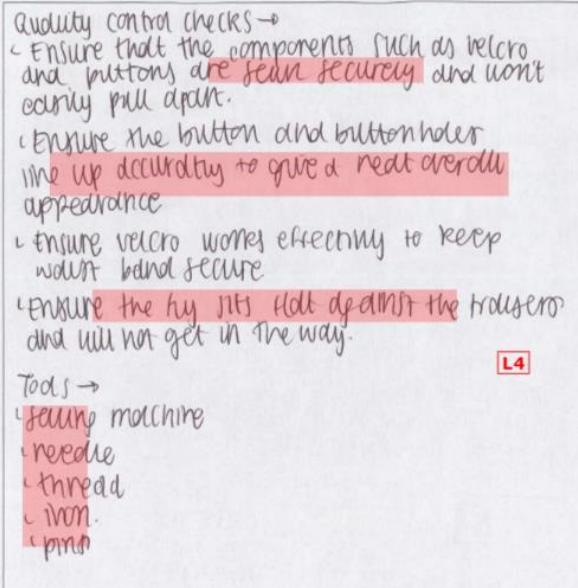
Question	Answer	Mark	Guidance
3	Indicative Content: Insert a button fly. • Cut all pattern pieces • Make a fly shield by folding in half lengthways and stitching the open edges, turn right way round and press and stitch edges closed • Make fly placket by stitching together – wrong sides together then adding button holes. You can stitch between these to help them lie flat and be less bulky.  The fly shield is similar to this but without button holes. Candidates may talk about backing one or both of these with interfacing or lining. • Attach fly shield and fly placket to the trouser legs using tacking stitches, then stitch them in place using sewing machine. • Construct trousers by joining both trouser legs and adding waistband. • Tack buttons in place and check they line up. • Attach buttons.	16 Candidates can draw on practical experience to support responses. Candidates are expected to demonstrate understanding of the processes through annotated sketches and/or notes.	Level 4 (13-16 marks) A comprehensive demonstration of how to add fastenings to the trousers. Comprehensive understanding of the three elements specified in question. Information in RB is used effectively to fully exemplify the points being made. Well-constructed response in relation to question with a clear and developed narrative. The methods will be technically accurate and clear in the way they are explained. Level 3 (9-12 marks) A good demonstration of how to add fastenings to the trousers. Good understanding of typically at least two elements specified in question. Information in RB is used for the most part effectively to exemplify points being made although one or two opportunities are missed. Sketches will for the most part be clear and supported with relevant

Question	Answer	Mark	Guidance
	 A method of attaching a Velcro fastener on the waistband. - Assemble the waistband and attach the hook side of the Velcro to the tab end of the waistband using the sticky backing. - When the trousers are assembled, line up the hooked piece of Velcro with the position on the waist where the other side should be. Ensure this matches where the button fly sits and use the sticky side to attach it to the waistband. - Using a sewing machine, stitch around the perimeter of both pieces of Velcro.		notes. The methods will be technically accurate and for the most part be clear in the way they are explained. Level 2 (5-8 marks) A sufficient demonstration of how to add fastenings to the trousers. Sufficient understanding of typically two elements specified in question. Information in RB is used to exemplify some points being made although much more could have been done to exploit the stimulus material available. Sketches will be adequate and supported with notes. The methods will not always be technically accurate with some knowledge gaps evident. Level 1 (1-4 marks) A limited demonstration of how to add fastenings to the trousers. Limited understanding of typically one element specified in question. Use of information from the RB is

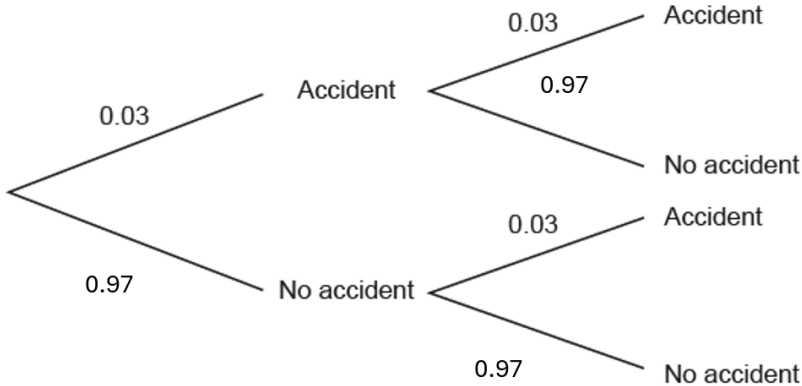
Question	Answer	Mark	Guidance
	 Doesn't have to be on correct side. Right Leg Left Leg Velcro positioning should match up if tab overlaps the edge of the fly. Quality control checks needed during the manufacturing process. • Is Velcro securely attached – test that it can not come loose. Is it the right sides and lined up correctly. • Do buttons fit button holes and are they aligned correctly – vertical. • Are buttons secure, check stitching and securely attached. • Does elastic lie flat in back of trousers, no twisting. • All stitching neat and secure. • Sizes within tolerance during and at end of manufacture. • Visual checks Any other valid suggestion.		used in a simplistic way and adds limited value to the points being made. Sketches if used will be unclear with only basic notes to accompany them. The methods may lack technical detail and be basic in nature. 0 marks = No response or no response worthy of credit.

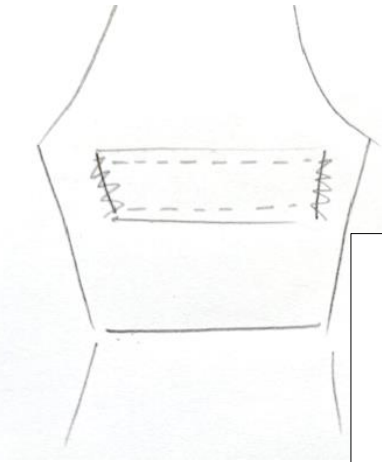
Question	Answer	Mark	Guidance
	Exemplar Answer:  Button fly - To create this you need two pants for the fly as shown. You would begin by marking with tailors chalk where the button holes will go, making sure there is the correct space between them. You would then get the sewing machine, swapping it a button hole foot and adapt the mode to this setting. To ensure that the machine is directly lined up with your markings and repeat this three times for each button hole. It will create a close bar stitch as shown below.  cut to create button hole. You will then need to use an unpick to create the hole in the stitch created so that the button hole is functioning. You will then sew this fly to the main trousers sewing around the edges but leaving the side open as shown on the next pages.		

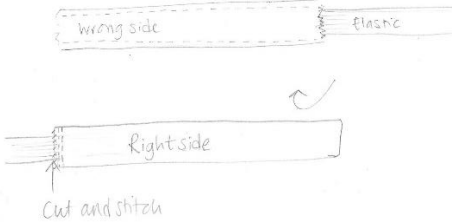
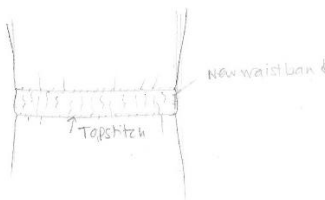
Question	Answer	Mark	Guidance
	 Before assembling this together you would also create the velcro fastening. You would begin by cutting out the desired shape of velcro on both pieces ensuring they matched. You would then pin it onto the waistband in the correct place - checking and ensuring function before moving on. You would then carefully stitch round the velcro using the sewing machine ensuring it is neat and the stitching is visible on the outside. Join together are these stages are both complete the waistband of the trousers are then fully reinforced and ready to use. The buttons would be hand stitched to the other panel of the fly before this stage - marked first with tailor's chalk to ensure precision. Ensure to iron fabric after each step to maintain a neat overall appearance, also helps show what the end result will look like.		

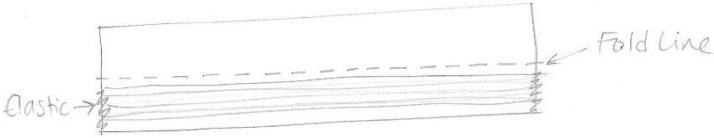
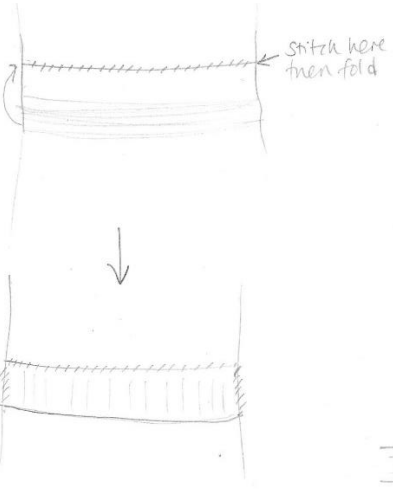
Question	Answer	Mark	Guidance
	 Quality control checks → • Ensure that the components (such as velcro and buttons) are sewn securely and won't easily pull apart. • Ensure the button and button hole line up accurately to give a neat overall appearance • Ensure velcro works effectively to keep waist band secure • Ensure the fly sits flat against the trousers and will not get in the way. L4 Tools → • sewing machine • needle • thread • iron • pinc		

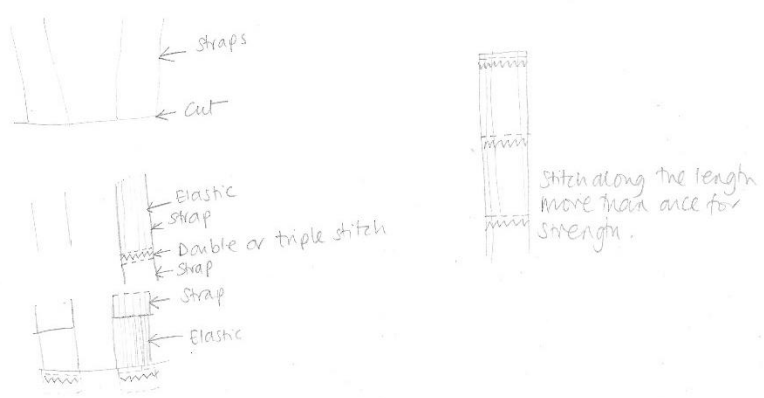
Question			Answer	Mark	Guidance												
4	(a)		<table><tr><th>Category of injury</th><th>Number of accidents</th></tr><tr><td>Contact with moving machinery</td><td>525</td></tr><tr><td>Hit by moving or flying objects</td><td>1575</td></tr><tr><td>Injuries when lifting, carrying or handling a load</td><td>1575</td></tr><tr><td>Falls from height</td><td>3150</td></tr><tr><td>Slips, trips or falls (on the same level)</td><td>3675</td></tr></table> 10500 x 5% = 10500 x 0.05 = 525 [1] 10500 x 30% = 10500 x 0.30 = 3150 [1]	Category of injury	Number of accidents	Contact with moving machinery	525	Hit by moving or flying objects	1575	Injuries when lifting, carrying or handling a load	1575	Falls from height	3150	Slips, trips or falls (on the same level)	3675	2	Award two marks as follows: One mark for 525. One mark for 3150.
Category of injury	Number of accidents																
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	(b)	(i)	Contact with moving machinery [1]	1	One mark as indicated.												
		(ii)	Falls from height [1]	1	One mark as indicated.												
	(c)		Let p be the probability of an accident occurring on any given day (given as 0.03). The probability of no accidents occurring on any given day is: $q = 1 - p = 1 - 0.03 = 0.97^*$ [1] The probability of an accident in the next two days = $q \times q = 0.97^* \times 0.97^*$ = 0.9409 or 94.09% [1]	2	Award two marks as follows: One mark for determining value of 0.97. One for mark calculating the probability that there will not be an accident in the next two days. If correct answer is given without working out shown award full marks.												

Question	Answer	Mark	Guidance
	Day 1 Day 2  <pre> graph LR D1(()) --- 0.03 A1[Accident] D1 --- 0.97 NA1[No accident] A1 --- 0.03 A2[Accident] A1 --- 0.97 NA2[No accident] NA1 --- 0.03 A3[Accident] NA1 --- 0.97 NA3[No accident] </pre> They still have to come up with the value of 0.9409 or 94.09% by multiplying 0.97×0.97 So, 1 mark for getting the first 0.97 and then the second mark if they take that forward on the tree and do the calculation.		Where an incorrect answer is given working out should be used to credit appropriate marks. *Allow error carried forward (ECF) where correct working out is shown.

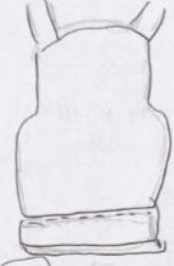
Question	Answer	Mark	Guidance
5	Indicative content: Disposal of fullness. Add a band of elastic to the back panel of the dungarees to pull in the sides to reduce risk. Do this by cutting a length of wide elastic and stitching it to the back inside of the dungarees. Stitch along the length to attach and also double stitch the start and finish of the elastic.  Back panel of dungarees – can add length of elastic to sides or middle. Stitch ends down and stitch horizontally along elastic.6 Comfort and movability for the wearer. <u>Ways of adding an elasticated waist</u> Add a waistband of fabric to the back of the trousers using a length of fabric the same size as the back panel. To do this: stitch new waist band together by folding in half along the width then stitching the long edge. Sew the elastic to one end of the new waistband, still inside out. Double stitch.	12 Candidates can draw on practical experience to support responses. Candidates are expected to demonstrate understanding of the processes through annotated sketches and/or notes.	Level 4 (10-12 marks) A comprehensive demonstration of how to add elastic to the back of the dungarees. Comprehensive understanding of the three elements specified in question. Information in RB is used effectively to fully exemplify the points being made. Well-constructed response in relation to question with a clear and developed narrative. The methods will be technically accurate and clear in the way they are explained. Level 3 (7-9 marks) A good demonstration of how to add elastic to the back of the dungarees. Good understanding of typically at least two elements specified in question. Information in RB is used for the most part effectively to exemplify points being made although one or two opportunities are missed. Sketches will for the most

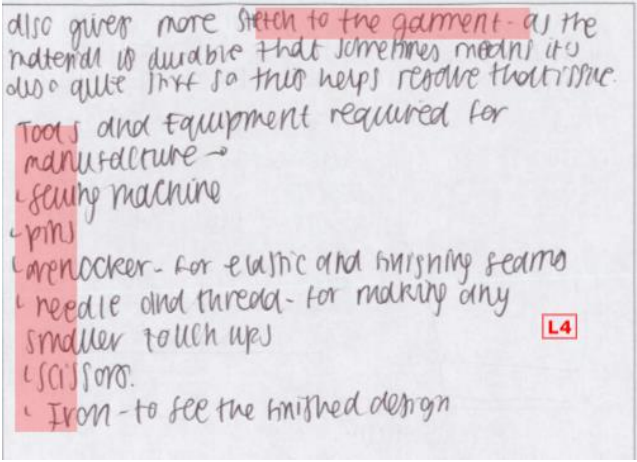
Question	Answer	Mark	Guidance
	Turn the new waist band the right way round so that the elastic is inside, pin the elastic to the new waistband and tack in place by hand vertically along the length of the waistband.  Trim elastic to length which should be around $\frac{1}{2}$ inch shorter than the length of the new waistband and stitch the end of the new waistband closed along with the elastic. Topstitch the new waistband inside the back of the dungarees.  OR Cut a length of suitable fabric the same width of the back of the dungarees and stitch a length of elastic to it. The elastic should be 1-2cm shorter than the length of the fabric, depending on how much tighter they need to be. Neaten the edges by folding over and stitching closed.		part be clear and supported with relevant notes. The methods will be technically accurate and for the most part be clear in the way they are explained. Level 2 (4-6 marks) A sufficient demonstration of how to add elastic to the back of the dungarees. Sufficient understanding of typically two of the elements specified in question. Information in RB is used to exemplify some points being made although much more could have been done to exploit the stimulus material available. Sketches will be adequate and supported with notes. The methods will not always be technically accurate with some knowledge gaps evident. Level 1 (1-3 marks) A limited demonstration of how to add elastic to the dungarees. Limited understanding of typically

Question	Answer	Mark	Guidance
	 Sew the length of fabric to the inside of the dungarees, fold over pin and tack in place then topstitch neatly.  <u>Add stretch/length to straps</u> Add elastic to the straps by unpicking them or cutting them away from the back of the dungarees and removing a few inches with scissors.		one element specified in question. Use of information from the RB is used in a simplistic way and adds limited value to the points being made. Sketches if used will be unclear with only basic notes to accompany them. The methods may lack technical detail and be basic in nature. 0 marks = No response or no response worthy of credit.

Question	Answer	Mark	Guidance
	 Use a length of strong elastic the same width and colour as the strap and double or triple stitch along the end of the strap and again an inch back up the strap for additional strength. This can be repeated again further up to ensure the Tools and equipment required for manufacture. • Sewing machine • Stitch ripper • Pins • Safety pins • Tape measure • Fabric shears • Taylors chalk • Additional needles and alternative feet for sewing machine Any other valid suggestion.		

Question	Answer	Mark	Guidance
	Exemplar Answer: To add elastic at the back I would create an elastic waistband that would help the trousers fit better allowing for more comfort and mobility. This elastic waistband will help dispose of fullness by cinching the fabric almost making gathers at the back. I would start by creating the waist band casing by cutting two long strips that will attach the top and bottom of the trousers together. I would then pin these together down the side and securely sew them with the machine. I would then sew 2 lines in the middle of the fabric to separate the front from the back.		

Question	Answer	Mark	Guidance
	I would then pin together the top of the dungarees waistband work sides do together before sew sewing and reversing it to work like this. I would then cut the elastic to half the size of the back panel or waist line and pin this in place whilst being stretched in order to create the cinch of the garment.  After the elastic was sewn in place I'd attach the toggles to complete the dungarees - overlocking all edges to ensure the fabric would not pull apart. comfort and mobility → 'mobility is ensured as the bulkiness and bulkiness is reduced meaning this isn't get in the way and the elastic allows the dungarees to move with you as your working. Comfort will still be ensured as the elastic is only at the back, not fully around the waist meaning it doesn't fit too tightly. It		

Question	Answer	Mark	Guidance
	 also gives more stretch to the garment - as the material is durable that sometimes means it's also quite stiff so this helps resolve that issue. Tools and Equipment required for manufacture -> - sewing machine - pins - seamlocker - for elastic and finishing seams - needle and thread - for making any smaller touch ups - scissors - Iron - to see the finished design L4		

Question	Answer	Mark	Guidance
6	Indicative Content: The use of technical and e-textiles. - Conductive thread could be used to add functionality – this could be music or ways of operating a mobile phone to allow the wearer to communicate with others if working remotely. They could answer calls and have option to control phone with voice – this could be useful in emergencies. - Speakers added to the clothing for hands free use of mobile devices. - Pocket or other part of the bib and braces/dungarees could include controllers for audio or mobile device. Soft buttons could be in convenient places. - Heating elements could be added to the dungarees – in the back or legs to keep warm in cold weather. - Lighting or torch feature could be included. Either in pocket so inside could be seen in low light or to straps to improve vision in dark or confined spaces. - Technical textiles such as Gore-Tex. - Self-healing fabrics could be added as knee patches or to other high-risk areas – or SuperFabric. - Nike Dri-FIT for the dungarees to make them more comfortable, functional and can be worn daily not just a PPE as they might have a smarter or more modern/fashionable appearance. Finishes. - Water repellence added to whole garment to make it better suited to difference environments. This might make them more difficult to care for or additional information may need to be provided to instruct the wearer on how to reapply the finish. - Flame resistance could be used to make the dungarees safer and lower risk when working with open flames. - Hygienic finishes could be used to prevent bacteria growing on the dungarees – this might be useful if they are worn as an overgarment and not washed regularly. They might be left on site. It might be beneficial for tradespeople who are working in dirty outdoor environments.	8 All responses should be in relation to the information provided. Candidates may extract information from the Resource Booklet. Any such lifted information can be used in support of the critical examination but no marks should be awarded simply for duplicating text. There is no analysis or evaluation in Level 1.	Level 4 (7-8 marks) A comprehensive examination of ways in which the functionality of the dungarees can be enhanced. Comprehensive understanding of the two elements specified in question. Information in RB is used effectively to fully exemplify the points being made. Well-constructed response in relation to question with a clear and developed narrative. Level 3 (5-6 marks) A good examination of ways in which the functionality of the dungarees can be enhanced. Good understanding of the two elements specified in question. Information in RB is used for the most part effectively to exemplify points being made although one or two opportunities are missed. Well-constructed response in relation to question although one or two

Question			Answer	Mark	Guidance
			A breathable coating using nanoparticles could be added to give more comfort for the wearer if they are working in tight spaces or outside in hot weather. Any other valid suggestion.		opportunities not taken to develop narrative. Level 2 (3-4 marks) A sufficient examination of ways in which the functionality of the dungarees can be enhanced. Sufficient understanding of typically one of the elements specified in question. Information in RB is used to exemplify some points being made although much more could have been done to exploit the stimulus material available. Reasonable response in relation to the question although narrative at times lacks depth and cohesion. Level 1 (1-2 marks) A limited coverage ways in which the functionality of the dungarees can be enhanced. Limited understanding of typically one element specified in question. Use of information from the RB is used in a simplistic way

Question			Answer	Mark	Guidance
					and adds limited value to the points being made. Limited response in relation to question. Narrative is basic and unstructured. 0 marks = No response or no response worthy of credit.

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