

GCE

Design and Technology

H405/01: Principles of Fashion and Textiles

Advanced GCE

2021 Mark Scheme (DRAFT)

This is a DRAFT mark scheme. It has not been used for marking as this paper did not receive any entries in the series it was scheduled for. It is therefore possible that not all valid approaches to a question may be captured in this version. You should give credit to such responses when marking learner's work.

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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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1. 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
	Cross
	Confused (replaces the question mark)
	Benefit of doubt
	AO1 – Knowledge and understanding
	AO2 – Apply knowledge and understanding
	AO3 - Analyse
	AO4 - Evaluation
	Omission
	Not answered question
	Noted but no credit given
	Too vague
	Own figure rule
	Repetition

2. 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	a	Possible performance characteristics may include: • High strength material/durable (1) will withstand wear and tear of combat / increased protection when on manoeuvres / resist extreme weathering (1). • Withstands temperatures up to 450c (1) protection against extreme heat/fire in field combat zone (1). • Self-extinguishable (1) protection against burns/fire damage (1) • Resistant to nearly all types of chemicals (1) protection against corrosives/chemicals getting to skin (1). • High abrasion resistance (1) will withstand wear and tear whilst on manoeuvres (1). • Flame resistant (1) protection against fire/burning of skin (1). • Hydrophobic (1) resists water, which will sit on the garment surface until it evaporates keeping user dry (1). • Lightweight (1) allows easier movement when in field combat zone (1). • Self-healing (1) material has the ability to repair itself thereby adding extra protection for user (1). • Any other suitable response.	6	In each case: One mark for identifying a performance characteristic of a hi-tech fabric that make it a suitable filler for the modern day equivalent military jacket. One mark for justifying why the performance character stated makes it suitable. Mix and match approach to be taken with bullet points. Specific reference to the context in the question is needed for marks to be awarded.
1	b	Single spun yarn is a continuous single thread of twisted or continuous filament yarns. More than one yarn is twisted together to make it stronger. A filament yarn is made of one or more continuous strands called filaments with each component filament running the whole length of the yarn. Single spun yarn cross sectional view	2	Up to two marks for showing through sketches or notes the difference between a spun yarn and a filament yarn. One mark to be awarded where there is no difference given and candidate only refers to a single spun or filament yarn.

			 Filament yarn cross sectional view 		Answer can be through annotated sketch, written or visual.
1	c		Possible ways may include: • Camouflage design/pattern on jacket (1) allows wearer to blend into different terrains/environments (1). • Contrasting bands/straps (1) (1) tightening/slackening of uniform to fit different sizes (1). • Pockets with flap (1) keeping equipment/documents secure and protected (1). • High neck/collar feature (1) added protection for neck and face (1). • Concealed zip and Velcro fastening (1) added protection/ensures secure fit to body (1). • Sleeve epaulets (1) add detail and interest to appearance (1). • Any other valid suggestion.	4	In each case: One mark for identifying a way the designer has used aesthetics to improve the functionality of the military combat jacket. One mark for justifying how functionality has been improved. Mix and match approach to be taken with bullet points. Specific reference to the context in the question is needed for marks to be awarded.

1	d	There are different technical processes that can be used to work a buttonhole. Indicative content: <u>EITHER</u> Hand worked buttonhole • Hand stitched buttonholes can take a variety of shapes - credit description of a style. • Reinforce areas where buttonholes are to be worked / double thickness /two pieces of fabric. • Edges of the item must overlap at least the diameter of the button. • Select button before the buttonhole is made / check button fits hole. • Buttonhole length needs to be the diameter of the button/ larger/plus 2mm. • Mark the position of the buttonhole using tailors pencil/hand stitching. • Work a straight stitch around the buttonhole marking - this will be covered by the buttonhole stitch when complete. • Buttonhole will be cut first in this method using buttonhole scissors /embroidery scissors/un-picker. Cut along the centre of the buttonhole marking. • If necessary, overcast the raw edges to prevent fraying. Work on the right side. • Buttonhole twist thread should be used / strong thread / machine thread. • Work the buttonhole stitch along the long edge. Insert the needle from the back to the front of the fabric. Pass the thread behind the eye of the needle and under the point. Pull the needle through, ensuring that the knot formed covers the cut edge of the fabric. • Work the stitches close together to cover the raw edge. • Use the same stitch, fan out five or seven slightly longer stitches at the end to create the curved end. The centre stitch should be in line with the cut edges.	6 All processors demonstrated must relate to the buttonhole. Candidates can draw on practical experience from product analysis and the workshop to support their answer to this question. Do not credit reference to just zigzag stitch, points must relate to the setting up of the machine stitch setting.	Level 3 [5-6 marks] The candidate has demonstrated a thorough understanding of the process needed to work a buttonhole with accurate technical terms and detailed consideration of any relevant equipment, machinery and materials required. Sketches if used will be clear and supported with relevant notes. The process will be end to end and clear in the way it is explained. Level 2 [3-4 marks] The candidate has demonstrated a sound understanding of some aspects of the process needed to work a buttonhole with reasonable use of technical terms and some consideration of any equipment, machinery and materials required. Sketches, if used, will for the most part be clear and supported with notes most of which are relevant. The end to end process may contain some gaps in understanding. Level 1 [1-2 marks] The candidate has demonstrated a limited knowledge of the process, applying this knowledge in a basic way to how the buttonhole would be worked with limited use of technical terms and a basic consideration of any equipment, machinery and materials required.
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		• Buttonhole stitch along the other long edge. Stitch through the knot of the first stitch, bringing the needle out just below the last stitch. • Form a bar tack with three or four long stitches to make the square end of the buttonhole. With the needle pointing towards the buttonhole and beginning at one end, buttonhole stitch across the long stitches, picking up the fabric underneath. The stitches should form a neat row of knots along the bar tack base. <u>OR</u> Machine stitched buttonhole • Reinforce areas where buttonholes are to be worked / double thickness / two pieces of fabric. • Edges of the item must overlap at least the diameter of the button. • Select button before the buttonhole is made / check button fits hole. • Buttonhole length needs to be the diameter of the button/ larger/plus 2mm. • Some machines have automatic buttonholes / description of process – wider zigzag at ends for bar tack, narrower at sides. • Electronic machines ‘remember’ the size of the buttonhole and will stitch them all the same size. • Mark positions / refer to pattern piece / use of tailor tacks / tailors pencil / even spacing / at least the radius of the button from the edge of the fabric. • Details of how to set up machine to stitch buttonhole / select buttonhole stitch/ set machine to zigzag stitch. • Use of buttonhole foot/ change machine foot. • Cut buttonhole after stitching/ using unpicker / buttonhole scissors. • Reverse stitch/cut loose threads/ press. <u>OR</u>		Sketches, if used, will be unclear with only basic notes to accompany them. The end to end process may not exist and if anything is basic in nature. 0 marks No response or no response worthy of credit.
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		Automatic buttonhole • Reinforce areas where buttonholes are to be worked/ double thickness /two pieces of fabric/piece of interfacing. • Edges of the item must overlap at least the diameter of the button. • Select button before the buttonhole is made. • Select buttonhole setting on machine and buttonhole foot, which is a long snap on foot, in which the button is placed to gauge the size of the buttonhole needed. • Once the button is in the foot, apply the stopper by lowering the lever, to gauge the length of the button. <i>If this option is not available on the machine, use the buttonhole foot to stitch one buttonhole to the correct size on a scrap of fabric. The buttonhole will be memorised to the correct size.</i> • Mark positions / refer to pattern piece / use of tailor tacks / tailors pencil / even spacing / at least the radius of the button from the edge of the fabric. • Machine stitch each buttonhole. Machine will remember the size of the buttonhole and stop when completed. • Cut buttonhole after stitching/ using unpicker / buttonhole scissors. • Cut loose threads/ press.		
1	e	Intellectual Property <i>Refers to all kinds of intangible types of property such as creative outcomes from the mind e.g. design ideas, written material, artistic and music composition. It allows you to own the things you create, to control the use of it, use it to gain reward and protect from copying.</i> Types of Intellectual Property (IP) and explanations may include: Design rights – (1) Concerns the rights of the creator unless a third part commissions the work (1).	4	One mark for identification of a type of IP legislation. Up to three marks for explaining how the type of IP chosen would protect a designer's ideas and inventions. You may get a generic answer or one that is within the context of military combat jackets. Accept both approaches.

		- Protects the configuration/shape of a product/prevents copying without permission (1). - They do not protect any 2D aspects, for example patterns (1). - Design rights can be bought, sold or licensed (1). - They stay in force for 10 years after first marketing of the product that use the design, or 15 years after the creation of the design, whichever is earlier (1). - Anyone can be prevented from copying the design for the first 5 years; for the rest of the time the design is subject to a licence of right (1). Only gives protection in the UK (1). Registered designs – (1) - Gives you ownership rights for the appearance of a product, protecting both the shape and the pattern or decoration (1). - It also covers features such as lines, contours, colours, shape, texture and materials of the product (1). - To be registered a design must be original, have an individual, unique character and not resemble an existing design (1). - Registered designs must be renewed every 5 years for up to 25 years (1). Patents – (1) - Gives the designer protection against copying of technical and functional aspects of an invention without permission (1). - It covers details of how it works, how it is made and what it is made of (1). - Rights last for 20 years and include allowing others to make copies of the invention, selling copies of the invention, offering copies of the invention for sale (1). - To apply for a patent the invention must be new, have an inventive (non-obvious feature) that is not obvious to someone with knowledge and experience in the subject and be capable of being made or used in industry (1).		Mix and match approach to be taken with bullet points.
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		• A patent cannot be awarded for a scientific or mathematical discovery; literary, dramatic, musical or artistic work; a plant or animal variety (1). Trademarks (1) • Are used by companies or individuals to identify or distinguish its products from those of others (1). • They can take the form of a word, name, logo, slogan, song, domain name, shape, sound or symbol (1). • A trademark must be distinctive, fair and accurate, morally acceptable and renewed every 10 year (1). Copyright (1) • This is a set of exclusive rights or protection given to creators of original ideas, information, or other intellectual works (1). • Copyrighted material can only be used or recreated with the owner's permission. (1). • It is used to protect literature including books, manuals, computer programmes, song lyrics and website content; works of art including photographs, paintings and sculpture; drama, dance and music (1). Copyright does not protect the ideas for the piece of work (1). Copyrighted work may have another IP connected to it, for example a logo might be registered as a trademark (1). • Copyright refers to any type of medium; copyright protected work must not be reproduced or copied in another medium without permission (1). Any other suitable response.		
1	f	Possible developments may include: • Colour-changing fabric through crystals reacting to light (1) allows wearer to adapt appearance to different environments (1).	6	In each case: Up to two marks for explaining a way in which developments in

		• Use of nanofibres (1) can switch from highly breathable state to a protective one / in response to an environmental threat (1). • Nanofibres used as water filters (1) suitable in combat zones where water is scarce or contaminated (1). • Silver nanoparticles used to reduce bacterial growth on fabric (1) reduces need to regularly wash and up keep military wear in combat zone (1). • Electronics embedded within textile fibres (1) sense if weapons are being targeted at uniform/clothing and sends a warning signal / heat sensors to indicate if wearer is injured (1). • Nanofibre membranes sensitive to chemicals (1) provide protection to the wearer against gas and chemical weapons (1). • Phase change materials (PCMs) which respond to different temperatures (1) act as body warmers for wearer in cold environments, react in colder temperatures (1). • Nanotechnology/self-cleaning fabrics using whiskers to trap air (1) creates a hydrophobic surface which when wet allows dirt to roll off the fabric delaying the need to wash regularly (1). • Any suitable response.		technical textiles could be incorporated into military uniforms. Mix and match approach to be taken with bullet points. Specific reference to the context in the question is needed for marks to be awarded.
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Question			Answer			Mark	Guidance																
2	(a)		Possible advantages may include: - Creates a unique, high spec product (1) that is not replicated on the high street (1) and is unique to the user (1). - Product is tailored to the specific needs/ specifications of the customer (1). It will be made to a high standard through the use of high-quality materials/components (1) therefore withstands the test of time/longevity factor (1). - Capital costs will be lower (1). Worker satisfaction is generally very high (1); one person will often be involved in every production stage from start to finish (1). - Any other suitable response.			3	Up to three marks for explaining an advantage of using a bespoke production system to manufacture products such as the mobile. Mix and match approach to be taken with bullet points.																
2	(b)	(i)	<table><tr><th>Price range (£p price)</th><th>Number of schools (frequency)</th><th>Frequency density</th></tr><tr><td>$0 \geq p \leq 5$</td><td>50</td><td>$50/5 = 10$</td></tr><tr><td>$5 > p \leq 10$</td><td>60</td><td>$60/5 = 12$</td></tr><tr><td>$10 > p \leq 12$</td><td>40</td><td>$40/2 = 20$</td></tr><tr><td>$12 > p \leq 16$</td><td>20</td><td>$20/4 = 5$</td></tr><tr><td>$16 > p \leq 20$</td><td>30</td><td>$30/4 = 7.5$</td></tr></table>	Price range (£p price)	Number of schools (frequency)	Frequency density	$0 \geq p \leq 5$	50	$50/5 = 10$	$5 > p \leq 10$	60	$60/5 = 12$	$10 > p \leq 12$	40	$40/2 = 20$	$12 > p \leq 16$	20	$20/4 = 5$	$16 > p \leq 20$	30	$30/4 = 7.5$	2	Award two marks as follows: One mark for understanding the method that is needed to calculate the frequency density. One mark for calculating the frequency density for all five price ranges.
Price range (£p price)	Number of schools (frequency)	Frequency density																					
$0 \geq p \leq 5$	50	$50/5 = 10$																					
$5 > p \leq 10$	60	$60/5 = 12$																					
$10 > p \leq 12$	40	$40/2 = 20$																					
$12 > p \leq 16$	20	$20/4 = 5$																					
$16 > p \leq 20$	30	$30/4 = 7.5$																					

2	(b)	(ii)	Frequency (No of Schools) CLASS 0 <= p <= 5 5 <= p <= 10 10 <= p <= 12 12 <= p <= 16 16 <= p <= 20	2	One mark for drawing a histogram to represent the information in the table above. One mark for labelling the two axes correctly. Candidates may label the frequency density on the x axis, and this is also acceptable.
2	(c)	(i)	$a^2 + b^2 = c^2$ $c^2 = a^2 + b^2$ $10.78^2 = a^2 + 4^2$ $a^2 = 10.78^2 - 4^2$ [1] $a^2 = 116.2084 - 16$ $a^2 = 100.2084$ $a = \sqrt{100.2084} = 10 \text{ cm (rounded to the nearest cm)}$ [1]	2	Award two marks as follows: One mark for knowing and applying Pythagoras' Theorem to rearrange formula in correct way, One mark for calculating 'a' to the nearest cm. If working out is given without working out shown award full marks. Where an incorrect answer is given working out should be used to credit appropriate marks.
2	(c)	(ii)	Base of pyramid = $8 \times 8 = 64 \text{ cm}$ [1] Calculation for area of triangle Area of triangle = $(\text{width} \times \text{perpendicular height}) \div 2$ $= (8 \times 10^*) \div 2$ $= 80^* \div 2$	3	Award three marks as follows: One mark for calculating the surface area of the base of the pyramid.

		$= 40 \text{ cm}^2$ [1] $SA = 64^* + (4 \times 40^*)$ $SA = 64^* + 160^*$ $SA = 224 \text{ cm}^2$ [1] Candidates may work through the process of calculating the height of the isosceles triangle as follows even though they have already calculated it using Pythagoras (do not penalise): $H = \sqrt{(\text{slant height})^2 - (\text{base}/2)^2} = \sqrt{(10.78)^2 - (8/2)^2}$ $= 10.0104145768 = 10 \text{ cm to nearest cm.}$		One mark for calculating the surface area of one triangular face of the pyramid. One mark for calculating the overall surface area of the pyramid. If correct answer is given without working out shown award full marks. 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.
2	(d)	Correct use of formula $V = \pi r^2 h$ [1] $V = \pi r^2 h$ $V = 3.142 \times (1.5)^2 \times 4$ $V = 3.142 \times 2.25 \times 4$ $V = 28.278 \text{ cm}^3$ [1] $28.278^* \times 72\% = 20.36016$ [1] $28.278^* - 20.36016^* = 7.9 \text{ cm}^3$ [1]	4	Award four marks as follows: One mark for knowing the formula to calculate the volume of a cylinder. One mark for applying the formula to calculate the overall volume of the cylinder. One mark for calculating the volume of the cylinder that is filled with sand. One mark for calculating the volume of the cylinder that is not filled with sand in cm^3 to 1 decimal place. If correct answer is given without working out shown award full marks. 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.
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Question		Answer	Mark	Guidance
3	(a)	Possible primary research methods may include: • Visits (1) to identify information available / to ascertain the information about prices, types of different products available in the market / to establish market opportunities for new designs that will suit the consumer (1). • Observations (1) to watch how consumers behave (1) / to identify specific trends in the market and the movements of a market in a given period of time / to work out a niche for future design ideas (1). • Interviews with consumers - qualitative research (1) to find out the best way to communicate with the consumers / to know the audience nature, personalities, likes, dislikes, etc. and this makes it easier to connect with them and reach out to them / to draw out consumer reactions, choices, and preferences / to establish any problem areas for the designer to avoid when designing a new product (1). • Testing (1) allows the designer to analyse the data and make design decisions relating to style, cost, packaging, colour, etc. (1). • Surveys/questionnaires - quantitative research (1) establish ongoing trends which allows designer to formulate plans according to the current consumer needs and requirements / assesses consumer satisfaction with a product or company's existing services and products / assesses what kind of changes the consumer would like to see (1). • Any other suitable response.	4	In each case: One mark for identifying a primary research method. One mark for describing how the primary research method could be used to inform design decisions in fashion and textiles. Mix and match approach to be taken with bullet points.

3	(b)	Indicative content: <i>Definition – how a designer uses annotated sketching and digital tools to communicate ideas to stakeholders.</i> • <i>A sketch can express more than words and give a greater understanding of an idea and how it is used.</i> • <i>Sketches are a fast and easy way to communicate an idea to a stakeholder.</i> Freehand annotated sketching is used by designers to communicate ideas to stakeholders: • Quick sketches in 2D and 3D – can be completed using a pencil, biro, roller pen or fine liner. • 2D sketches can look flat on the page but with the addition of colour, texture and line thickness they can bring to life and communicate an idea more effectively. 2D sketching might be used for working drawings of a fashion/textile product or lay plan and may be adapted from photographs to give more clarity and realism to the stakeholder/client, showing an overall shape of a product or garment. • 3D sketches are needed to fully communicate a design idea visually to a stakeholder. The creation of realistic 3D sketches is illustrated through perspective drawing or working and technical drawings. This style of sketching communicates the proportions of a product as it is seen in reality. Isometric drawing allows ideas to be drawn accurately using drawing equipment. • Annotating 3D sketches provides stakeholders with vital information, indicating the overall size of a product, any components or features that are used etc. • Freehand sketching also allows the designer to put down thoughts quickly, which reduces time needed to consolidate an idea with the client and allows for a speedier process. • Designers using freehand sketching – footwear designer Cesar Idrobo, prefers this type of communication when working with clients. Fashion designers initially sketch a	8 For MB3 to be awarded both annotated sketching and digital design tools need to be covered. If candidate does not provide an analytical/evaluative response then only L1 can be awarded.	Level 3 [6-8 marks] The candidate has a clear understanding of how the use of sketching and digital design tools support and communicate the development of design concepts to a stakeholder. They produce a thorough discussion in relation to the question by explaining the implications and use of ‘<i>sketching</i>’ and ‘<i>tools</i>’ when supporting and communicating design ideas. The explanation is clear and well-developed and specific examples are used to exemplify the points being made. Level 2 [3-5 marks] The candidate has a reasonable understanding how the use of sketching and/or digital design tools support and communicate the development of design concepts to a stakeholder. They produce a sound discussion in relation to the question by explaining the implications and use of ‘<i>sketching</i>’ and/or ‘<i>notes</i>’ when supporting and communicating design ideas. The explanation is sufficient although one or two opportunities are missed in referring to different examples. Level 1 [1-2 marks]
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		figure then hand sketch garments onto them to give the idea of shape and form when worn. Alexander McQueen completed quick sketches of his fashion garments using basic line on pencil and paper. These were often scratchy and feathery indicating an outline of an idea with very little detail and annotation. • Producing scenario sketches – these support and help communicate a product in context and explore how a user will interact with it. • This method supports the development of the design concept - Allows the idea to be understood in more detail – user needs, the context, issues associated with the product, functional and material choices and possibilities for manufacture. <i>Digital design tools support the use of free-hand sketching in order to communicate a design in more detail. Digital design tools allows the design to be modified quickly to suit client/stakeholder needs.</i> • Software applications are used widely for creating and exploring ideas. Simple 2D and 3D sketching programs and apps can be used to quickly visualise an idea and its' variations in form, shape, style and colour. An example of a tool to complete this is: Digital graphic drawing tablet and pen. Rendered life-like drawings give a detailed idea of what the finished product will look like in terms of textures and materials. Examples of these packages include: Keyshot,, Mental Ray and V-Ray. Cesar Idrobo, footwear and accessory designer uses digital tools and CAD to produce life-like renders of his ideas. This allows him to run through ideas and options for the user, allowing him to evaluate 3D shapes rather than 2D sketches. Idrobo uses the programs Grasshopper and Rhino to complete this process. Generative design tools are used by designers to mimic the way nature and organisms evolve in the natural		The candidate has a basic knowledge of how sketching and/or the use of digital design tools support and communicate the development of design concepts to a stakeholder. Any reference to implications designer or the stakeholder. The response contains no analysis or evaluation, with few or no relevant examples. 0 marks No response or no response worthy of credit.
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		world creating fluid forms (biomimicry). This helps the designer to create the optimum form. For example, footwear can be made more comfortable for the wearer. • Elie Saab uses an Apple iPad Pro and Apple Pencil to create her sketches. • Sketch modelling – a quick model to show what the design idea or concept is using very little detail. The general idea is that an idea can be accepted or rejected by stakeholders and suggestions made for the next design iteration. Sketch models are made from easy to work and low-cost materials such as calico. They help to convey product scale and explore user interaction and are created with the purpose of sharing an idea. Breaking a design down into parts using sketch models helps to show how parts interrelate and function in order to optimise the design. Sketch models can be tested with users and other stakeholders to get feedback before more accurate models are made that focus on details. In the later stages of a design idea, sketch models can be used to demonstrate functionality. • Any other suitable response.		
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Question		Answer	Mark	Guidance
4	(a)	Possible reasons may include: • Adds structural integrity to the garment to hold the body or garment in a particular shape (supports the desired shape of the body) (1). • Gives the desired silhouette to enhance appearance and keep in trend with fashion (1). • Prevents the fabric from wrinkling, giving a smooth shape/finish (1). • Gives a strapless garment the support/framework to stay in place (1). • Adds embellishment details to give interest and visual appeal (1). • Any other suitable response.	2	In each case: One mark for giving a reason why boning has been used in the construction of the fashion garments. Specific reference to the context in the question is needed for marks to be awarded.
4	(b)	Points that could be made in relation to a synthetic textile or metal may include: Synthetic boning (Nylon) • Synthetic boning is more cost effective than steel (1). • It is therefore mainly used for mass produced garments, saving costs (1). • Synthetic boning tends to warp and bend when used. • This impacts on the final appearance/quality of the garment (1). • It can distort over time (1). • Appearance can be compromised giving lumps and bumps! (1). • Can be easier and quicker to apply/sew onto a garment (1). • It is thin and flexible and can create a better fit and shape to the garment (1).	4	Up to two marks for each comparison/contrasting point made. MAX four marks. Where an answer is given that solely focuses on a synthetic textile or metal – MAX two marks. Mix and match approach to be taken with bullet points. Specific reference to the context in the question is needed for marks to be awarded.

		• Lightweight and more comfortable alternative to steel (1). • Synthetic boning never decomposes and its manufacture is not environmentally friendly (1). • It will deteriorate with wear but will not disappear (1). • Any other suitable response. Steel/metal boning • Favoured for high quality garments to give a better finish (1). • More authentic in its shaping properties.(1) • Steel boning is available in two varieties: flat boning which bends in one direction and spiral boning, which bends in two directions boning can therefore be used on curved channels giving a better quality appearance/smooth finish (1). • Steel is strong and does not warp or bend when used. (1). • Any other suitable response.		
4	(c)	There are different technical processes that can be used to incorporate one piece of boning into the corset. Indicative content: <u>EITHER</u> Applying a casing. • Create tube by folding or inserting fabric into seam. • Use a firm, tightly woven fabric for this method. (Cotton) • Measure the width of the boning and the length of the garment piece. • Cut a strip of the fabric to the required length, a strip cut from the bias of the fabric makes a smoother	6 All processors demonstrated must relate to the boning process. Candidates can draw on practical experience from product analysis and the workshop to support their answer to this question.	Level 3 [5-6 marks] The candidate has demonstrated a thorough understanding of the process needed to incorporate one piece of boning into the corset with accurate technical terms and detailed consideration of any relevant equipment, machinery and materials required. Sketches if used will be clear and supported with relevant notes. The process will be end to end and clear in the way it is explained. Level 2 [3-4 marks] The candidate has demonstrated a sound understanding of some aspects of the process needed to incorporate one piece of

		casing, or use a ready-made tubular bone casing strip. Make the strip 3mm wider than the width of the boning. • Stitch the casing to the fabric along both edges, creating a channel wide enough for the boning to slide into and narrow enough to keep the boning from twisting in the casing. • Machine stitch across one casing end before inserting the boning. • Hand or machine stitch the opposite end after the boning is inserted. <u>OR</u> Sewing directly onto the garment • Synthetic boning (Rigilene) is the only boning that can be sewn directly to fabric. • It has a border on each long edge to sew through. It is best when sewn flat and not into a curved seam. • Cut a length of boning to fit the length of the garment piece. • Iron the boning flat if it is curved. • Place the boning on the WS of the fabric. • Machine stitch down one side at a time without catching the garment face. • Sew the boning to the pressed-open side seam allowance by centring it over the seam. • Finish the boning ends by wrapping them with a firmly woven cotton fabric as you sew them. <u>OR</u> Also allow pre-covered boning method: The most available boning is 1/4-inch-wide plastic		boning into the corset with reasonable use of technical terms and some consideration of any equipment, machinery and materials required. Sketches, if used, will for the most part be clear and supported with notes most of which are relevant. The end to end process may contain some gaps in understanding. Level 1 [1-2 marks] The candidate has demonstrated a limited knowledge of the process, applying this knowledge in a basic way to how the boning would be incorporated with limited use of technical terms and a basic consideration of any equipment, machinery and materials required. Sketches, if used, will be unclear with only basic notes to accompany them. The end to end process may not exist and if anything is basic in nature. 0 marks No response or no response worthy of credit.
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			wrapped in a fabric casing (sometimes called Featherlite). • Measure and cut a length of the pre-covered boning to fit the length required in the garment. • Remove the boning from its casing. • Edgestitch the casing down both sides to the WS of the fabric. • Reinsert the boning and stitch the ends.		
4	(d)*		Indicative content: <i>The term silhouette refers to the line of a dress, or the garment's overall shape. Silhouettes can be used to emphasise and alter a woman's shape to create a flattering illusion.</i> <i>Anything that has been put together in an organised, deliberate way can be described as structured. Designers call fashion and textile products structured when they are carefully tailored and deliberately shaped.</i> Fashion over the years has resulted in structural components being a main feature of a fashion or textile product and therefore key to aesthetics. Designers/Movements: • The silhouette and structure of fashion was 'shaped' primarily by the corset, which was a commonly worn garment among European and British women. The garments incorporated the use of a "busk," a long, flat piece of whalebone or wood sewn into a casing on the corset in order to maintain its stiff shape. • The corset was laced to pull the torso in. Tight lacing was most fashionable in the late 1800s early 1900s to achieve the hourglass figure silhouette.	8 For MB3 to be awarded a number of examples of key historical movements and designers need to be discussed to show how the structure and silhouette of fashion and textile products have been influenced. If candidate does not provide an analytical/evaluative response then only L1 can be awarded.	Level 3 [6-8 marks] The candidate has a clear understanding of key historical movements and fashion designers. They produce a thorough discussion in relation to the question by explaining how historical movements and fashion designers have influenced the structure and silhouette of fashion and textile products. The explanation is clear and well-developed and specific examples are used to exemplify the points being made. <i>There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated with the use of examples.</i> Level 2 [3-5 marks] The candidate has a reasonable understanding of the key historical movements and/or fashion designers. They produce a sound discussion in relation to the question by explaining how historical movements and/or movements have

		• Charles Frederick Worth – well known designer of the mid 1800s-early 1900s, favoured the crinoline, a cage-like metal structure that held the dress out in a stylish shape. The voluminous skirt against the smaller waist giving the sought-after silhouette of the time. • Early 1900s saw a new style of corset being invented to give the curvaceous 'S-Bend' or 'S-Line' shape/silhouette, which dominated fashion until 1908. The S-Bend corset thrust the chest forward, and, with the help of padding, a particular posture was achieved to create the illusion of an 'S' silhouette. This style of undergarment didn't last long as a trend, as the public became more aware of the health problems linked to the corset steering its demise in preference to the brassiere (bra). • Towards the end of the decade Paul Poiret introduced designs that did not include a petticoat or a corset, taking the 'S' shape figure out of fashion. This was a big change to a woman's silhouette as the waist was always shaped by a corset since the Renaissance. The fashionable silhouette became much more fluid and softer. • Art Deco movement influenced the structure of textile products and fashion in shape and pattern. The fashionable silhouette became much more fluid and softer. Biba (Barbara Hulanicki) leading the way with designs championing this look. • Impact of War - WW1. Silhouette was dictated more by necessity than fashion. Women were needed to work and social events were few, therefore there was a reduced need for extravagant gowns. By 1915 skirts had risen above the ankle and then later to mid-calf. WW11 (1939) saw austerity measures put into place once again. Luxury fabric was hard to obtain, Zippers were prohibited for use in corsetry and steel hook and	influenced the structure and/or silhouette of fashion and textile products. The explanation is sufficient although one or two opportunities are missed in referring to different examples. <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 1 [1-2 marks] The candidate has a basic knowledge of key historical movements and/or fashion designers. Any reference to the structure and silhouette of fashion and textile products is largely descriptive in nature. The response contains no analysis or evaluation. <i>The information has some relevance and is presented with limited structure or detail. The information is supported by limited evidence.</i> 0 marks No response or no response worthy of credit.
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			eye closures were limited. Metal was also utilised less in corsetry because it was needed for the war effort. The structure and silhouette took on a more utilitarian, military inspired look. The broad-shouldered silhouette, of the early 1940s created a way for women to blend into male-dominated surroundings. • 1920s – Bustless, waistless silhouette emerged. Coco Chanel and ‘The Little Black Dress’. • 1940s - Dior’s new look full skirt and cinched waist through the use of girdles and all-in-one corsetry started the trend for the ‘sought-after’ shape and silhouette. Corsets transformed from a trend in the early 1900s to a garment with the potential to express one’s sexuality. • 1960s. Paco Rabanne changed the structure of fashion by using nonconventional materials to make his garments and accessories. He created garments from aluminium, Rhodoid and pieces of scrap metal. • Women’s Liberation movement loosened the structures of uncomfortable undergarments and women’s wear in general. Pant suits for women were popular, flare legged pants, • Punk Movement -1970s. Up until the punk movement, corsets were strictly worn as under garments. In their quest to be shocking, punks started wearing lingerie as outerwear. Goths also adopted the corset as outerwear, perhaps due to elements of their fashion being influenced by the Victorian era. Hippies bohemian style, mixed with Victorian and ethnic elements also influenced fashion and textile products. Laura Ashley kept the silhouette linked to the high necklines and long sleeves reminiscent of the Victorian and Edwardian country dress. • Christian Lacroix sent shock waves through the world of haute couture with his flounced skirts, embroidered corselets, bustles and polka dot		
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			crinolines bringing structure and creativity back into fashion. • Jean Paul Gaultier capitalised upon this trend, famously introducing traditional corsetry into his 1983 dress collection by re-designing the garment; recreating it as outerwear. This started the incorporation of boning into all types of fashion garment, such as jackets, shirts and dresses to add shape, structure and interest. • Vivienne Westwood introduced this look into her punk/new romantic collections of the 80s and 90s, combining corsetry and structure into outerwear. She introduced contrasting elements into her fashion, alongside fluid and steam-lined shapes to create haphazard silhouettes. She also included outfits inspired by 18th-century courtesans with rounded hips, corsets and platform heels. • Madonna was a key personality who flaunted this trend with corsetry as outerwear and creative structural features for her garments in the 1980s. • Designers today are free to explore their ideas through any material and are influenced by many diverse subjects. All shape the structure and look of fashion both on the high street and in haute couture. Designers such as Rosie Assoulin, Delpozo, Michelle Smith are all influenced by architecture, which is reflected in the structure of their fashion products, all giving a very different silhouette. The use of overlapping layers, disposal of fullness techniques, geometric lines and patterns all shape the modern silhouette of today's high street. There are no exacting fashion trends today, allowing freedom of expression, which wasn't the norm in the early 1900s. Developments in technology/materials		
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			• The availability of more cost effective boning and structural components, made from Nylon for example, which are just as strong as steel and quick to apply, has meant that their use in garments and textile products has become more readily available and popular with fashion designers. Introduction of interfacing (1930s) fusibles (1960s), which add strength and can be added/fused to any fabric surface has allowed more sculptural processes and techniques to shape textile products. • Introduction of shoulder pads and padding. Moving from traditionally being protective sportswear into fashion in 1930s, featuring in haute couture and movie fashion. This focus on the shoulders developed into more structured iterations during the late 40s. Elsa Schiaparelli added the shoulder pad and padded features to her jackets to give accentuated structure. She was known for her experimentation with the shape of women's silhouettes, tapping into the surrealist art movement and in particular, illusionistic details. The shoulder pad then went on to become synonymous with the 1980s and the term power dressing, helped along by Margaret Thatcher. Designers, such as Gareth Pugh and Demma Gvasalia (Balenciaga), today have returned to use shoulder padding to create 'over-the-top' structures and silhouettes. • Introduction of Spandex and Viscose in the 1980s greatly influenced the silhouette. Jumpsuits, leggings, rounded hips, accentuated shoulders combined with the finish, simplicity and seductive style of the cut all impacted on the overall shape. • Late 1900s. Introduction of 3-D molding/printing technology in fashion and textile production. Used to create padded structures that are precise and can be molded into any shape and angle, adding a futuristic		
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			dimension to the silhouette or textile accessory, such as shoes, jewellery, headwear and handbags. Designs by Iris Van Herpen optimises 3-D printed processes and structural features in her fashion and textile products. - The introduction of different structural materials into fashion and textile products, like fibreglass and resin, combined with fabric to create very structured, directed form. - Any other suitable response.		
4	(e)		Therefore $0.15 + 0.03 + 0.005 = 0.185$ [1] The probability of a boned structured garment selected at random being a size 8 is 0.185	4	Award four marks as follows: One mark for completing first section of tree diagram correctly. One mark for completing second section of tree diagram correctly. One mark for calculating the probability for each of the three manufacturers. One mark for calculating the probability that the bone structured garment will be a size 8. If correct answer is given without working out shown award full marks. 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.
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