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DESIGN & TEXTILES **9631/03**

Paper 3 Textile Applications and Technology **October/November 2025**

MARK SCHEME

Maximum Mark: 100

Published

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

Cambridge International will not enter into discussions about these mark schemes.

Cambridge International is publishing the mark schemes for the October/November 2025 series for most Cambridge IGCSE, Cambridge International A and AS Level components, and some Cambridge O Level components.

Generic Marking Principles

These general marking principles must be applied by all examiners when marking candidate answers. They should be applied alongside the specific content of the mark scheme or generic level descriptions for a question. Each question paper and mark scheme will also comply with these marking principles.

GENERIC MARKING PRINCIPLE 1:

Marks must be awarded in line with:

- the specific content of the mark scheme or the generic level descriptors for the question
- the specific skills defined in the mark scheme or in the generic level descriptors for the question
- the standard of response required by a candidate as exemplified by the standardisation scripts.

GENERIC MARKING PRINCIPLE 2:

Marks awarded are always **whole marks** (not half marks, or other fractions).

GENERIC MARKING PRINCIPLE 3:

Marks must be awarded **positively**:

- marks are awarded for correct/valid answers, as defined in the mark scheme. However, credit is given for valid answers which go beyond the scope of the syllabus and mark scheme, referring to your Team Leader as appropriate
- marks are awarded when candidates clearly demonstrate what they know and can do
- marks are not deducted for errors
- marks are not deducted for omissions
- answers should only be judged on the quality of spelling, punctuation and grammar when these features are specifically assessed by the question as indicated by the mark scheme. The meaning, however, should be unambiguous.

GENERIC MARKING PRINCIPLE 4:

Rules must be applied consistently, e.g. in situations where candidates have not followed instructions or in the application of generic level descriptors.

GENERIC MARKING PRINCIPLE 5:

Marks should be awarded using the full range of marks defined in the mark scheme for the question (however; the use of the full mark range may be limited according to the quality of the candidate responses seen).

GENERIC MARKING PRINCIPLE 6:

Marks awarded are based solely on the requirements as defined in the mark scheme. Marks should not be awarded with grade thresholds or grade descriptors in mind.

Social Science-Specific Marking Principles (for point-based marking)

1 Components using point-based marking:

- Point marking is often used to reward knowledge, understanding and application of skills. We give credit where the candidate's answer shows relevant knowledge, understanding and application of skills in answering the question. We do not give credit where the answer shows confusion.

From this it follows that we:

a DO credit answers which are worded differently from the mark scheme if they clearly convey the same meaning (unless the mark scheme requires a specific term)

b DO credit alternative answers/examples which are not written in the mark scheme if they are correct

c DO credit answers where candidates give more than one correct answer in one prompt/numbered/scaffolded space where extended writing is required rather than list-type answers. For example, questions that require *n* reasons (e.g. State two reasons …).

d DO NOT credit answers simply for using a 'key term' unless that is all that is required. (Check for evidence it is understood and not used wrongly.)

e DO NOT credit answers which are obviously self-contradicting or trying to cover all possibilities

f DO NOT give further credit for what is effectively repetition of a correct point already credited unless the language itself is being tested. This applies equally to 'mirror statements' (i.e. polluted/not polluted).

g DO NOT require spellings to be correct, unless this is part of the test. However spellings of syllabus terms must allow for clear and unambiguous separation from other syllabus terms with which they may be confused (e.g. Corrasion/Corrosion)

2 Presentation of mark scheme:

- Slashes (/) or the word 'or' separate alternative ways of making the same point.
- Semi colons (;) bullet points (•) or figures in brackets (1) separate different points.
- Content in the answer column in brackets is for examiner information/context to clarify the marking but is not required to earn the mark (except Accounting syllabuses where they indicate negative numbers).

3 Calculation questions:

- The mark scheme will show the steps in the most likely correct method(s), the mark for each step, the correct answer(s) and the mark for each answer
- If working/explanation is considered essential for full credit, this will be indicated in the question paper and in the mark scheme. In all other instances, the correct answer to a calculation should be given full credit, even if no supporting working is shown.
- Where the candidate uses a valid method which is not covered by the mark scheme, award equivalent marks for reaching equivalent stages.
- Where an answer makes use of a candidate's own incorrect figure from previous working, the 'own figure rule' applies: full marks will be given if a correct and complete method is used. Further guidance will be included in the mark scheme where necessary and any exceptions to this general principle will be noted.

4 Annotation:

- For point marking, ticks can be used to indicate correct answers and crosses can be used to indicate wrong answers. There is no direct relationship between ticks and marks. Ticks have no defined meaning for levels of response marking.
- For levels of response marking, the level awarded should be annotated on the script.
- Other annotations will be used by examiners as agreed during standardisation, and the meaning will be understood by all examiners who marked that paper.

Annotations guidance for centres

Examiners use a system of annotations as a shorthand for communicating their marking decisions to one another. Examiners are trained during the standardisation process on how and when to use annotations. The purpose of annotations is to inform the standardisation and monitoring processes and guide the supervising examiners when they are checking the work of examiners within their team. The meaning of annotations and how they are used is specific to each component and is understood by all examiners who mark the component.

We publish annotations in our mark schemes to help centres understand the annotations they may see on copies of scripts. Note that there may not be a direct correlation between the number of annotations on a script and the mark awarded. Similarly, the use of an annotation may not be an indication of the quality of the response.

The annotations listed below were available to examiners marking this component in this series.

Annotations

Annotation	Meaning	Use
	Tick	Indicates a point which is relevant and rewardable
	Cross	Indicates a point which is inaccurate/irrelevant and not rewardable
SEEN	Noted but no credit given	Indicates that content has been recognised but not rewarded
REP	Repetition	Indicates where content has been repeated
NAQ	Not answered the question	Used when the answer or parts of the answer are not answering the question asked
BOD	Benefit of doubt	Used when the benefit of the doubt is given in order to reward a response
	Question mark	Uncertain what the candidate means – an illogical line of thought
IR	Irrelevant	Point is irrelevant to the question

Question	Answer	Marks
	Section A **Answer BOTH questions**	
1	**Fashion garments can be functional and fashionable.**	
1(a)	**Describe <u>three</u> factors a designer would need to consider to ensure an evening jacket is fashionable.** Answer could include: • Fibre content of fabrics – natural/synthetic/regenerated • Fabric construction – woven/knitted • Current fashion trends – season, design/pattern/style • Occasion • Fit/Silhouette – e.g. tailored fit, balance & proportion, comfort etc. • Target market – e.g. user/gender – ensure it is fashionable • Colour – up to date with current trends • Design features – e.g. pockets, trimmings etc., up to date with current trends • Decoration – embellishments etc. – up to date with current trends • Fastenings – e.g. exposed zips etc., up to date with current trends Any other appropriate/relevant points 1 mark for a brief point 2 marks for a well explained point	**6**

Question	Answer	Marks
1(b)	**Explain how fabric finishes can alter the appearance of a fabric suitable for an evening jacket.** Answer could include: • **Calendering** – usually used for cotton fabrics to make the surface shinier and stain resistant. Uses heat & pressure to smooth, flatten and add lustre. It is often used for jackets • **Embossing** – imparts a raised design that stands out from the background and is achieved by passing the fabric through heated rollers engraved with a design • **Glazing –** a textile finish that adds lustre and smoothness to the surface of the fabric. Many glazed fabrics are plain woven cotton. A specialised calender (set of metal rollers) called a friction calender, literally rubs the fabric lustrous. Glazed chintz and polished cotton are examples of glazed fabrics • **Delustering –** the application of a chemical treatment that reduces the sheen of man-made yarns and fabric • **Devoré –** creates a semi-transparent pattern on velvet and other fabrics. • **Brushing** – makes a fabric softer, fluffier and warmer Any other appropriate/relevant points **High band: 6–8 marks:** demonstrates detailed knowledge and understanding when explaining how fabric finishes can alter the appearance of a fabric suitable for an evening jacket. Very good organisation of answer with skilled use of technical textile terms. **Middle band: 3–5 marks:** a good attempt showing some knowledge and understanding when explaining how fabric finishes can alter the appearance of a fabric suitable for an evening jacket. Shows good use of technical textile terms with good organisation and presentation of skills. **Low band: 0–2 marks:** a satisfactory attempt with limited knowledge and understanding when explaining how fabric finishes can alter the appearance of a fabric suitable for an evening jacket. The answer may be presented as a list and not all information may be relevant. There may be few or no examples and some use of technical textile terms.	**8**

Question	Answer	Marks
1(c)	**Discuss the importance of following the care labelling system in order to prolong the life of a jacket. Include examples to support your answer.** Answer could include: • Informs the consumer how to care for and clean the jacket to maximise life • Information on a care label includes conditions of washing, drying, bleaching and ironing instructions • Codes are adapted to make the information relevant to the garment. • Following the care labelling system will enable consumers to keep their jacket looking their best. It maximises the useful life of the jacket • Enables consumer to have prior knowledge of ongoing costs such as dry cleaning • Care labels help to prevent irreversible damage to the textile article during its care processes. The care labels generally contain the following information, although the statutory provisions may vary from country to country: care symbols, fibre content (% of each fibre), size, country of origin, further information such as eco labels • Care codes are the internationally recognised symbols which are used for caring of garments in case of cleaning and ironing. They are important because consumers all over the world can easily recognise the symbols and so are able to maintain their clothes easily. The labels on which these codes are drawn or printed are called care labels. The care instructions are conditions of laundering, drying instructions, ironing instructions • If care label advice is not followed the jacket may be affected • It avoids damage such as dyes running (e.g. wash separately), burning/melting (e.g. cool iron), shrinking and stretching the fabric. • Symbols are on garments so text is not necessary for ease of understanding • Ironing symbols ensure that the correct temperature is used for the fabrics to make sure the fabric is not scorched, especially if synthetic fibres are used as they are very sensitive to heat • Bleaching – you can safely bleach cotton, polyester, nylon, acrylic and rayon, but you should avoid bleaching wool, silk, mohair, leather or spandex. This is because the dye is not integral to the fibre so bleach will fade the colour severely • If easy-care finishes are used, a minimum wash may be necessary to keep the fabric in good condition • Dry cleaning is very suitable for jackets because multiple fabrics are used in many tailored and workwear jackets. Many jackets are made from wool or might contain embellishments which could easily get damaged in the washing machine. It is important to make sure the correct cleaning agent is used; this will be shown on the label • Tumble drying symbols will show how long the items can be dried for and whether a reduced action is needed. If the temperature/action is too high, the fabric may be affected Any other appropriate/relevant points	**11**

Question	Answer	Marks
1(c)	**High band: 8–11 marks:** demonstrates detailed knowledge and understanding when discussing the importance of following the care labelling system in order to prolong the life of a jacket. Shows a high level of skill in the selection of appropriate examples to illustrate the answer. Very good organisation of answer with skilled use of technical textile terms. **Middle band: 4–7 marks:** a good attempt showing some knowledge and understanding when discussing the importance of following the care labelling system in order to prolong the life of a jacket. Selects some appropriate examples. Shows good use of technical textile terms with good organisation and presentation of skills. **Low band: 0–3 marks:** a satisfactory attempt with limited knowledge and understanding when discussing the importance of following the care labelling system in order to prolong the life of a jacket. The answer may be presented as a list and not all information may be relevant. There may be few or no examples and some use of technical textile terms.	

Question	Answer	Marks
2	**Creativity is important in the design of textile products.**	
2(a)	**Explain how vanishing fabrics can be used in creative machine embroidery for an evening top. You may include labelled sketches in your answer.** Answer could include: • Vanishing fabrics are those which are dissolved or removed once the embroidery or decorative technique has been carried out. These can come in the form of hot water and cold water soluble fabrics • Can produce a lace effect or delicate effect so that it can be added to another fabric background. This can be a different colour, fibre content, type of fabric etc. • It could be used to decorate an evening top and sewn on to the main fabric • It could be used for the construction of the main fabric or used for additional sections and sewn on • When the fabric is dissolved the edges can be frayed to give a decorative effect • Could weave beads and different types of threads to create different textures • Can be used as edgings on the garment to produce lace effects • E.g. Solufleece is a water-soluble stabiliser for machine embroidery which handles heavy/high-density stitching extremely well. It is layered against the fabric you wish to stabilise while sewing & embroidering • Credit labelled sketches Any other appropriate/relevant points **High band: 5–6 marks:** demonstrates detailed knowledge and understanding when explaining how vanishing fabrics can be used in creative machine embroidery for an evening top. Very good organisation of answer with skilled use of technical textile terms. **Middle band: 3–4 marks:** a good attempt showing some knowledge and understanding when explaining how vanishing fabrics can be used in creative machine embroidery for an evening top. Shows knowledge of technical textile terms with good organisation and presentation of skills. **Low band: 0–2 marks:** a satisfactory attempt with limited knowledge and understanding when explaining how vanishing fabrics can be used in creative machine embroidery for an evening top. Moderate organisation with some use of technical textile terms.	**6**

Question	Answer	Marks
2(b)	**Discuss the opportunities for consumers to recycle textile products. Give specific examples to support your answer.** Answer could include: • Give to charity shops/organisations so it can be either re-sold or disposed of in an environmentally friendly way e.g. can be sorted and distributed according to the condition of the item • Sell the items on e-Bay/Facebook marketplace/ other online marketplace etc. • Unpick and make something new from the fabric e.g. accessories • Upcycle by dyeing the fabric, attaching components, embellishing etc. • Remove components and re-use on other items • Renovate the unwanted item and re-use or sell • Pass down to other family members/friends • Make the item into something else e.g. cut jeans into shorts, adapt an adult's dress into a child's dress etc. • Cut up and re-use the fabric for patchwork, trial sewing etc. • Cut up and use as rags or cleaning cloths • Change of use e.g. for sleepwear • Take items to a recycling centre where they are sorted according to their condition, colour, ability to be re-sold etc., and know they will be disposed of appropriately if the company has a good reputation, can be recycled (shredded to make new fabrics e.g. padding, blankets, cleaning cloths etc.) or made into new items • Shred and use as mattress fillings or stuffing • Doorstep collection of unwanted items Any other appropriate/relevant points **High band: 6–8 marks:** demonstrates detailed knowledge and understanding when discussing the opportunities for consumers to recycle textile products. Shows a high level of skill in the selection of appropriate examples to illustrate the answer. Very good organisation of answer with skilled use of technical textile terms. **Middle band: 3–5 marks:** a good attempt showing some knowledge and understanding when discussing the opportunities for consumers to recycle textile products. Selects some appropriate examples. Shows good use of technical textile terms with good organisation and presentation of skills. **Low band: 0–2 marks:** a satisfactory attempt with limited knowledge and understanding when discussing the opportunities for consumers to recycle textile products. The answer may be presented as a list and not all information may be relevant. There may be few or no examples and some use of technical textile terms.	**8**

Question	Answer	Marks
2(c)	**Compare the advantages and disadvantages of a range of craft printing processes that could be used to add a design to a cushion. Include examples of fabrics to support your answer.** Answer could include: • **Screen printing –** the process of pressing ink through a stencilled mesh screen using a squeegee, to create a printed design. Can build up designs with different colours so designs can be quite detailed and results can be very effective. Prints can blur if the screens move. If paint is not put onto the frame evenly, blobs of paint can occur. Quick to do. If you only have one frame/squeegee, then it would need to be washed for each different colour • **Block/Relief printing** – the process of printing patterns by means of engraved wooden blocks. It is the earliest, simplest and slowest of all methods of textile printing. However, the results are unique, some of which are unobtainable by any other method. The prints are not very accurate as the amount of pressure can affect how strong the colour comes out • Cheap to produce, can also use polystyrene, string, vegetable (potato etc.), leaves as blocks or everyday objects found around the house • **Transfer printing –** disperse dyes transfer from paper to fabric with heat, using an iron. The cloth fibres open with heat allowing the dyes to bond permanently. Can be done at home using fabric crayons or transfer paints. Colours come out a lot stronger on synthetic fabrics • **Digital printing** – using transfer paper and printing an image from a computer. This process can be done at home using a computer and transfer print paper. The design is then ironed onto the textile product, or it can be directly printed onto the fabric • **Heat press** **Types of paint used:** • Fabric dyes (already mixed) • Acrylic paint with textile medium • Alternative colouring agents e.g. fabric crayons/pastels, printing ink, transfer printing **Types of fabric suitable to print on:** Plain white cotton, cotton canvas, linen, bamboo, poplin, cambric, silk, polyester (satin/twill) etc. Any other appropriate/relevant points Not stencil printing or roller printing	**11**

Question	Answer	Marks
2(c)	**High band: 8–11 marks:** demonstrates detailed knowledge and understanding when comparing the advantages and disadvantages of a range of craft printing processes that could be used to add a design to a cushion. Shows a high level of skill in the selection of examples to illustrate the answer. Very good organisation of answer with skilled use of technical textile terms. **Middle band: 4–7 marks:** a good attempt showing some knowledge and understanding when comparing the advantages and disadvantages of a range of craft printing processes that could be used to add a design to a cushion. Includes some appropriate sketches. Shows good use of technical textile terms with good organisation and presentation of skills. **Low band: 0–3 marks:** a satisfactory attempt with limited knowledge and understanding when comparing the advantages and disadvantages of a range of craft printing processes that could be used to add a design to a cushion. The answer may be presented as a list and not all information may be relevant. There may be few or no examples and some use of technical textile terms.	

Question	Answer	Marks
	Section B **Answer <u>two</u> questions.**	
3	**There are many important factors to consider when designing and manufacturing bags.**	
3(a)	**Compare the aesthetic and technological requirements of a school bag. Give examples to support your answer.** **Aesthetic requirements:** Aesthetics is a core design principle that defines a design's pleasing qualities. In visual terms, aesthetics includes factors such as balance, colour, movement, pattern, scale, shape and visual weight. Designers use aesthetics to complement their designs' usability, and so enhance functionality with attractive layouts • Colour • Design/trends/theme • Logo design • Occasion • Season • Fabric – printed/plain • Lining • Pockets – e.g. for water bottle, phones etc. • Hidden compartments • Design features – e.g. straps, handles • Fastenings – e.g. zips, buckles, poppers, Velcro • Decorative techniques • Visually appealing/attractive • Shape/form Many of these requirements are dependent on the gender and the target market e.g. teenager etc. **Technological requirements:** • Performance • Reliability • Hardwearing/durable • Strength – a school bag needs to be strong enough to last a year or more, and consumers want to able to use it again and again. • Size – needs to be large enough to carry schoolbooks, pencil case, lunchbox, water bottle, PE kit etc. • Fabric performance characteristics – e.g. a heavyweight fabric – the bag will be more durable and long lasting; does it need to be waterproof/stain resistant/soil repellent; does it need to be resistant to abrasion? Could reflective fabric be used to be seen in the dark? • Care • Cost Any other appropriate/relevant points	**12**

Question	Answer	Marks
3(a)	**High band: 9–12 marks:** demonstrates detailed knowledge and understanding of the aesthetic and technological requirements of a school bag. Shows a high level of skill in the selection of appropriate examples to illustrate the answer. Very good organisation of answer with skilled use of technical textile terms. **Middle band: 5–8 marks:** a good attempt showing some knowledge and understanding of the aesthetic and technological requirements of a school bag. Selects some appropriate examples. Shows good use of technical textile terms with good organisation and presentation of skills. **Low band: 0–4 marks:** a satisfactory attempt with limited knowledge and understanding of the aesthetic and technological requirements of a school bag. The answer may be presented as a list and not all information may be relevant. There may be few or no examples and some use of technical textile terms.	

Question	Answer	Marks
3(b)	**Analyse the range of surface decoration processes that can be used to enhance a bag suitable for a special occasion. Give examples of suitable fabrics to support your answer.** Answer could include: • **Fabric manipulation** – e.g. tucks, pleats etc., hand stitched effects achieved by altering top and bottom tensions, gathering the fabric, evenly or unevenly (similar effect to shirring), Pleating – folding the fabric e.g. knife pleats or tucks, which will produce a thicker layered surface • **Appliqué/reverse appliqué** – adding one or more layers to produce texture, use of different fabrics e.g. silk satin – shiny and colourful if contrasting colour is chosen; printed cotton cambric can give colour; cotton cord fabrics can give texture and contrasting colour etc. • **Mola –** handmade using a reverse appliqué technique. Several layers (usually two to seven) of different coloured fabric (usually cotton) are sewn together; the design is then formed by cutting away parts of each layer. The edges of the layers are then turned under and sewn down. Often, the stitches are nearly invisible. This is achieved by using a thread the same colour as the layer being sewn, sewing blind stitches, and sewing tiny stitches. The finest molas have extremely fine stitching, made using tiny needles • **Trapunto** – padded designs stitched on to a background fabric • **Hand & machine quilting** – e.g. English – adds texture, can use contrasting threads • **Hand embroidery** – different thicknesses of thread and different colours can be used to add variety/texture. Hand embroidery uses stranded cottons/silks; perle threads which are thicker and give a more textured look; embroidery wools which are matt finish. Use of different stitches e.g. stem stitch, French knot etc. • **Machine embroidery** – select pre-programmed patterns using a computerised sewing machine. CAD/CAM embroidery machine can produce an original design which has been scanned and saved, use of vanishing fabrics • **Free machine stitching** – working from a drawing/design, suitable for one-off designs as it may not be possible to replicate the exact same design again • **Added embellishment –** e.g. Beads/sequins/buttons etc. – usually sewn on by hand and can use contrasting threads; give both colour and texture • **Raised embroidery** – e.g. Shisha, Kantha • **Sashiko** • **Addition of trimmings such as braids/lace/threads/ribbons** – e.g. couching, which may give colour, pattern and/or texture to the surface e.g. narrow ribbon used as an embroidery thread; coloured narrow lace used to produce continuous patterns along an edge of an item; coloured braids which can be attached by machine to give colour and pattern • **Smocking –** an embroidery technique used to gather fabric so that it can stretch. Requires lightweight fabric with a stable weave that gathers well e.g. Cotton and silk, often in lawn or voile	**13**

Question	Answer	Marks
3(b)	• **Shirring** – using shirring elastic, produces a gathered effect on the surface • **Use of textured fabrics**, possibly in sections, to produce a varied textured surface • **Removing threads** from sections of the fabric to produce a distressed effect • **Removing areas of fabrics** to produce holes, and adding other fabrics to fill holes • **Weaving effects** • **Patchwork** Not printing processes Any other appropriate/relevant points **High band: 10–13 marks:** demonstrates detailed knowledge and understanding when analysing the range of surface decoration processes that can be used to enhance a bag suitable for a special occasion. Shows a high level of skill in the selection of appropriate examples to illustrate the answer. Very good organisation of answer with skilled use of technical textile terms. **Middle band: 5–9 marks:** a good attempt showing some knowledge and understanding when analysing the range of surface decoration processes that can be used to enhance a bag suitable for a special occasion. Selects some appropriate examples. Shows good use of technical textile terms with good organisation and presentation of skills. **Low band: 0–4 marks:** a satisfactory attempt with limited knowledge and understanding when analysing the range of surface decoration processes that can be used to enhance a bag suitable for a special occasion. The answer may be presented as a list and not all information may be relevant. There may be few or no examples and some use of technical textile terms.	

Question	Answer	Marks
4	**It is important to consider safety and preparation in the manufacturing process.**	
4(a)	**Evaluate why the safe handling of dye stuffs and mordants is important.** Answer could include: • Dyes can remain in the environment for a long period of time • Many dyes are carcinogenic, mutagenic and/or toxic to life • Incorrect handling and use of harmful/hazardous chemicals can cause skin irritations, lung disease, asthma, eye irritations and inhalation of harmful fumes • Dyes can have acute and/or chronic effects on exposed animals/plants, depending on the exposure time and dye concentration • Unnatural colouration of water/rivers/lakes • Dyes have a negative effect on the food chain • Damage to ecosystems when discharged into water systems by dyeing factories, predominantly in developing countries • Dye effluent has been connected to growth reduction, neurosensory damage, stress and death in fish, and plant growth • Manufacturers must set out good working practices for using hazardous substances e.g. the use of warning labels, how hazardous substances should be used and stored correctly to prevent risk to employees • Closed loop manufacturing – a sustainable approach that keeps materials in use for as long as possible in order to reduce waste • PPE or protective clothing (e.g. mask, gloves, goggles etc.) Any other appropriate/relevant points **High band: 9–12 marks:** demonstrates detailed knowledge and understanding when evaluating the importance of handling dyestuffs and mordants safely. Shows a high level of skill in the selection of appropriate examples to illustrate the answer. Very good organisation of answer with skilled use of technical textile terms. **Middle band: 5–8 marks:** a good attempt showing some knowledge and understanding when evaluating the importance of handling dyestuffs and mordants safely. Selects some appropriate examples. Shows good use of technical textile terms with good organisation and presentation of skills. **Low band: 0–4 marks:** a satisfactory attempt with limited knowledge and understanding when evaluating the importance of handling dyestuffs and mordants safely. The answer may be presented as a list and not all information may be relevant. There may be few or no examples and some use of technical textile terms.	**12**

Question	Answer	Marks
4(b)	**Discuss the different methods that are used to prepare fibres and yarns for dyeing.** **Types of dyeing:** at fibre stage, at yarn stage, hanks, on reels etc. • Method of dyeing e.g. piece dyeing, vat dyeing, pigment /dope dyeing for synthetics, etc. • May be dyed in staple form before spinning • Fibre content – different preparation may be needed for different fibres e.g. wool and silk protein fibres will need different preparation to synthetics or cellulosics • Synthetic fibres may have dye added at liquid fibre stage so the process may be different to natural/man-made cellulosic fibres • Submerging in hot water – to ensure the fibres are thoroughly wet and their structure is open, which allows the dye molecules to penetrate deeply and evenly, leading to a consistent colour result • Scouring – to remove size/impurities • Bleaching – needed to get a true white before dyeing which will give a better colour e.g. some fibres are naturally different colours e.g. flax fibres are beige/grey and cotton fibres are creamy/white • To remove any colour so the dye is even and the fabric will be white before dyeing • Mercerising – for cottons, which will make a better take-up/more absorbent/stronger colour of dye • Mordants – the type of mordant depends on the type of fibre being dyed • Wetting agents used before dyeing • Special finishes e.g. mercerising, pre-shrinking, etc. • Is a different finish being applied before dyeing? This may affect the take-up of dye • Different dyes for different fibres and yarns e.g. synthetic fabrics will have different dyes to natural fibres – direct dyes for cottons, cellulosic, acid dyes for wool, silks, nylon, disperse dyes for polyester, acetate, nylon • Batches of yarns can be dyed, made to order to reduce wastage, space dyeing, ikat dyeing on the loom, rainbow dyeing Any other appropriate/relevant points **High band: 10–13 marks:** demonstrates detailed knowledge and understanding when discussing the different methods that are used to prepare fibres and yarns for dyeing. Shows a high level of skill in the selection of appropriate examples to illustrate the answer. Very good organisation of answer with skilled use of technical textile terms. **Middle band: 5–9 marks:** a good attempt showing some knowledge and understanding when discussing the different methods that are used to prepare fibres and yarns for dyeing. Selects some appropriate examples. Shows good use of technical textile terms with good organisation and presentation of skills. **Low band: 0–4 marks:** a satisfactory attempt with limited knowledge and understanding when discussing the different methods that are used to prepare fibres and yarns for dyeing. The answer may be presented as a list and not all information may be relevant. There may be few or no examples and some use of technical textile terms.	**13**

Question	Answer	Marks
5	**Environmental issues are important to consider in the design and manufacture of textile products.**	
5(a)	**Discuss the environmental factors that designers need to consider when designing textile products. Give examples to support your answer.** Answer may include: • **Product life cycle** – designers need to consider this when designing textile products e.g. recycling, re-use of textiles e.g. plastic bottles etc. Consider the carbon footprint • **Fabric** – is it from a sustainable source, where has it come from, how was it produced? Will the fabric need dry cleaning or special care? • **Components** – use less in the design, use recycled components, where are they made and what are they made from? • **Dyeing** – will the fabric be chemically or naturally dyed, how much water is used, what energy does it use to heat it, where does the water from the dyeing process go? • **Manufacturing** – where will it be manufactured? Does it have to be made in another country? • How much fabric will be needed? What waste is produced in the cutting out of the fabric? Will computer lay planning be used to reduce waste? • **Energy** – how much energy will be used in the manufacture? Can less energy be used by using different processes? Can greenhouse gas emissions be reduced by using different methods of production? • More **digital use** to reduce the need for paper and save time/reduce costs • **Sustainability** – Are they thinking about the 6 Rs? Are they replenishing natural resources? • **Environmental issues** – will the finished product create waste in landfill when the item is discarded – design obsolescence? Can the design be reused or recycled rather than being disposed of? Any other appropriate/relevant points **High band: 9–12 marks**: demonstrates detailed knowledge and understanding when discussing the environmental factors that designers need to consider when designing textile products. Shows a high level of skill in the selection of appropriate examples to illustrate the answer. Very good organisation of answer with skilled use of technical textile terms. **Middle band: 5–8 marks:** a good attempt showing some knowledge and understanding when discussing the environmental factors that designers need to consider when designing textile products. Selects some appropriate examples. Shows good use of technical textile terms with good organisation and presentation of skills. **Low band: 0–4 marks:** a satisfactory attempt with limited knowledge and understanding when discussing the environmental factors that designers need to consider when designing textile products. The answer may be presented as a list and not all information may be relevant. There may be few or no examples and some use of technical textile terms.	**12**

Question	Answer	Marks
5(b)	**Assess the importance for a manufacturer to accurately estimate the quantities of materials and components needed to make fashion garments. Include examples to support your answer.** Answer could include: • The correct amount of materials and components should be ordered or they could end up with an excess causing waste. They will also lose money • No time will be wasted • Manufacturer would make up a prototype/sample to work out the exact materials and components needed and get an estimate of the final cost • Developing the pattern if required to make it simpler and cheaper but still give the overall effect/design • Using computerised patterns will be more accurate than manual methods as software can calculate how much fabric will be needed • Computer software can produce the most economical layout (lay plans) when cutting out which will ensure a minimum amount of materials are wasted • If manufacturers do have excess fabrics, they can ensure that this is used on other items to offset costs e.g. a patterned fabric could be used as a pocket lining on a different item • The suppliers will need to make sure they have enough of the materials required so production is not halted due to lack of materials causing a delay in production • Ensures the flow of production as all required materials and components are accessible • They would get an idea of how many workers are needed to make the products so could estimate the costs involved • Consistency – as all materials and components will be from the same dye lot/fabric roll etc. maintaining uniformity • Digital use for pattern drafting, accurate bulk cutting of fabric pieces, automatic seaming etc. • Production methods – whether batch or mass, JIT Any other appropriate/relevant points **High band: 10–13 marks:** demonstrates detailed knowledge and understanding when assessing the reasons why it is important for a manufacturer to accurately estimate the quantities of materials and components needed to make fashion garments. Shows a high level of skill in the selection of appropriate examples to illustrate the answer. Very good organisation of answer with skilled use of technical textile terms. **Middle band: 5–9 marks:** a good attempt showing some knowledge and understanding when assessing the reasons why it is important for a manufacturer to accurately estimate the quantities of materials and components needed to make fashion garments. Selects some appropriate examples. Shows good use of technical textile terms with good organisation and presentation of skills.	**13**

Question	Answer	Marks
5(b)	**Low band: 0–4 marks:** a satisfactory attempt with limited knowledge and understanding when assessing the reasons why it is important for a manufacturer to accurately estimate the quantities of materials and components needed to make fashion garments. The answer may be presented as a list and not all information may be relevant. There may be few or no examples and some use of technical textile terms.	

