

# A-level DESIGN AND TECHNOLOGY: FASHION AND TEXTILES 7562/1

Paper 1 Technical Principles

Mark scheme

June 2022

Version: 1.0 Final



Mark schemes are prepared by the Lead Assessment Writer and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation events which all associates participate in and is the scheme which was used by them in this examination. The standardisation process ensures that the mark scheme covers the students' responses to questions and that every associate understands and applies it in the same correct way. As preparation for standardisation each associate analyses a number of students' scripts. Alternative answers not already covered by the mark scheme are discussed and legislated for. If, after the standardisation process, associates encounter unusual answers which have not been raised they are required to refer these to the Lead Examiner.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of students' reactions to a particular paper. Assumptions about future mark schemes on the basis of one year's document should be avoided; whilst the guiding principles of assessment remain constant, details will change, depending on the content of a particular examination paper.

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# Level of response marking instructions

Level of response mark schemes are broken down into levels, each of which has a descriptor. The descriptor for the level shows the average performance for the level. There are marks in each level.

Before you apply the mark scheme to a student's answer read through the answer and annotate it (as instructed) to show the qualities that are being looked for. You can then apply the mark scheme.

# **Step 1 Determine a level**

Start at the lowest level of the mark scheme and use it as a ladder to see whether the answer meets the descriptor for that level. The descriptor for the level indicates the different qualities that might be seen in the student's answer for that level. If it meets the lowest level then go to the next one and decide if it meets this level, and so on, until you have a match between the level descriptor and the answer. With practice and familiarity you will find that for better answers you will be able to quickly skip through the lower levels of the mark scheme.

When assigning a level you should look at the overall quality of the answer and not look to pick holes in small and specific parts of the answer where the student has not performed quite as well as the rest. If the answer covers different aspects of different levels of the mark scheme you should use a best fit approach for defining the level and then use the variability of the response to help decide the mark within the level, ie if the response is predominantly level 3 with a small amount of level 4 material it would be placed in level 3 but be awarded a mark near the top of the level because of the level 4 content.

# Step 2 Determine a mark

Once you have assigned a level you need to decide on the mark. The descriptors on how to allocate marks can help with this. The exemplar materials used during standardisation will help. There will be an answer in the standardising materials which will correspond with each level of the mark scheme. This answer will have been awarded a mark by the Lead Examiner. You can compare the student's answer with the example to determine if it is the same standard, better or worse than the example. You can then use this to allocate a mark for the answer based on the Lead Examiner's mark on the example.

You may well need to read back through the answer as you apply the mark scheme to clarify points and assure yourself that the level and the mark are appropriate.

Indicative content in the mark scheme is provided as a guide for examiners. It is not intended to be exhaustive and you must credit other valid points. Students do not have to cover all of the points mentioned in the Indicative content to reach the highest level of the mark scheme.

An answer which contains nothing of relevance to the question must be awarded no marks.

# **Glossary for maths**

If a student uses a method which is not explicitly covered by the mark scheme the same principles of marking should be applied. Credit should be given to any valid methods. Examiners should seek advice from their senior examiner if in any doubt.

[a, b] Accept values between a and b inclusive.

For  $\pi$  Accept values in the range [3.14, 3.142]

**Their** Accept an answer from the candidate if it has been inaccurately calculated

but is subsequently used in a further stage of the question.

# Questions which do not ask students to show working

As a general principle, a correct response is awarded full marks.

Qu	Part	Marking Guidance					Total marks	AO
01	0	into each fibro	Complete <b>Table 1</b> by inserting the correct fibre from the list below nto each fibre category.  Do not use any fibre more than once.  Ceramic Kevlar® Lycra® Nylon Polyester					AO4 1a
		Ceramic Kevlar® Lycra® Nylon Polyester Polyvinyl PTFE Ramie Silk Tactel®  1 mark per correct placement of the fibres as follows:  Table 1						
		Fib	re category		Fibre			
		Ara	mid		Kevlar <sup>®</sup>			
		Cel	lulosic		Ramie			
		Chl	orofibres		Polyvinyl			
		Fluorofibres PTFE						
		Ino	rganic		Ceramic			
		Pro	tein		Silk			

Qu	Part	Marking Guidance	Total marks	AO
02	0	State <b>three</b> properties of Gore-Tex® that make it suitable for outdoor clothing.  Any three relevant points, one mark each.  Breathable/allows perspiration through  Waterproof/water resistant/water repellent  Windproof  Lightweight  Do not award a mark to laminated, wicks moisture away, insulating/warm, absorbent, non-absorbent, rip resistant, strong/durable.  Award any other valid responses.	3 marks	AO4 1a

Qu	Part	Marking Guidance	Total marks	АО
03	1	Describe the appearance and characteristics of crêpe fabric.  Any 3 relevant points, 1 mark each.  Illustrations may be given, award credit for any appropriate information.  Indicative content  Crêpe fabric has an irregular rippled/crimped/bumpy surface appearance.  Made with highly twisted or crêpe yarns. Recognised for its give/stretch/good draping qualities Usually made from wool/polyester/silk fibres. Plain/crepe weave/loose structure Luxurious  This question is about appearance and characteristics, not properties.  Do not accept insulating, hard wearing, light, breathable, heat setting, sheer/translucent.  Award any other valid responses.	marks 3 marks	AO4 1a

Qu	Part	Marking Guidance	Total marks	AO
03	2	Describe the appearance and characteristics of gingham fabric.  Any 3 relevant points, 1 mark each.  Illustrations may be given, award credit for any appropriate information.  Indicative content  Gingham is a plain weave fabric. Two different colour yarns are used/white and one other coloured yarn. The fabric is characterised by check/plaid/stripes. Usually made from cotton or polycotton.	marks 3 marks	AO4 1a
		This question is about appearance and characteristics, not properties.  Do not accept light, breathable, soft, strong, durable, absorbent, used in school uniforms.  Award any other valid responses.		

Qu	Part	Marking Guidance	Total marks	АО
03	3	Describe the appearance and characteristics of taffeta fabric.	3 marks	AO4 1a
		Any 3 relevant points, 1 mark each.		
		Illustrations may be given, award credit for any appropriate information.		
		Indicative content		
		<ul> <li>Taffeta is a slightly stiff or crisp fabric/makes a rustling sound with movement.</li> <li>It has a distinctive lustre/ribbed/moire effect.</li> <li>It is constructed using a plain weave.</li> <li>Usually made from filament yarns/polyester/silk.</li> <li>Can have an iridescent two-tone effect/colour changes when fabric moves.</li> </ul>		
		This question is about appearance and characteristics, not properties.		
		Do not accept flammable, breathable, light weight, absorbent.		
		Award any other valid responses.		

Qu	Part	Marking Guidance	Total marks	AO
04	0	Explain the importance of trademarks and logos to a designer.	6 marks	AO4 1b
		5–6 marks  Detailed explanation of the importance of trademarks and logos to a designer. A perceptive understanding of the key principles of both logos and trademarks. In this mark band the information is successfully linked with their importance to a designer, and both logos and trademarks are discussed in fairly equal measure.  Points raised are mostly accurate; there may be a lack of detail at the low end of the mark band, however there is an overall understanding of their importance to a designer.		
		Good explanation of the importance of trademarks and logos to a designer. Some understanding of the key principles of logos and trademarks. In this mark band the information is mostly linked with their importance to a designer, although there may be more focus on either logos or trademarks. Points raised are generally accurate, but there is likely to be a lack of detail and understanding of the issues at the low end of the mark band.		
		1–2 marks  Basic explanation of the importance of trademarks and logos to a designer. Limited understanding of the key principles of logos and trademarks. In this mark band the information is not always linked with their importance to a designer, and may focus on a narrow, or one area only. The information may be confused and inaccurate, especially at the low end of the mark band.		
		0 marks No response or nothing worthy of credit.		
		Indicative content		
		<ul> <li>Logos:</li> <li>logos are unique visual symbols that distinguishes a designer from the competition</li> <li>they identify a company through specific colours, shapes or fonts and create brand loyalty</li> <li>designers work can be easily recognised through a logo, raising the profile of a brand</li> <li>a logo can help promote a brand for a designer, and become popular, increasing sales in the UK and globally.</li> </ul>		
		Trademarks:  a logo or a specific design can be registered as a trademark, shown by the TM or ® symbols		

- a trademark is used to identify and promote a brand unique to a designer
- it offers a designer protection from other companies copying or reproducing their work
- designers can take legal action against counterfeiters or those who create designs similar to those that are protected by trademarks and logos.

This question is about promoting brands and protecting designs. Do not accept Fairtrade mark, lion mark, CE, health & safety logos etc

Qu	Part	Marking Guidance	Total marks	AO	
05	1	Calculate the amount of thread required to stitch arour <b>Figure 1</b> .	nd the circle in	2 marks	AO4 1c
		The radius of the circle is 3.5 cm.			
		Give your answer to the nearest cm.			
		Show your working.			
		rd full marks.			
		$(C = 2\pi r \text{ or } C = \pi D)$ $2 \times [3.14, 3.142] \times 3.5$ 1 mark (M)  or $[3.14, 3.142] \times 7$ or $[21.98, 21.994]$ 22 (cm) 1 mark (A)			

Qu	Part	Marking Guida	ance	Total marks	AO
05	2	The shaded area of the logo in Figure '	l is an isosceles triangle.	4 marks	AO4 1c
		Calculate the area of the triangle.			
		Show your working.			
		If there is no working but correct answe	r is given, award full marks.		
		Indicative content			
			1 mark (M)		
		$\tan 55 = \frac{4.7}{x}$			
		(where $x$ is the left half of the base)			
		$x = \frac{4.7}{\tan 55}$	1 mark (M)		
		or			
		3.29 their 3.29 × 2 × 4.7			
		$\frac{\text{their } 3.29 \times 2 \times 4.7}{2}$	1 mark (M)		
		or			
		their 3.29 × 4.7 [15.46, 15.5] 1 mark (A)			
		[15.46, 15.5] 1 mark (A)			

Qu	Part		Marking Guidance	Total marks	АО
06		•	e benefits of electronic point of sales (EPOS) for fashion irers and retailers.	6 marks	AO4 1b
		5–6 marks	Detailed explanation of the benefits of electronic point of sales (EPOS) for fashion manufacturers and retailers. The response shows a thorough understanding of the use of EPOS, and gives a wide range of different points in the answer. At the top end of the mark band, there is a clear insight into the benefits, while there may be a slight lack of detail at the low end. In this mark band, points should go beyond the use of barcodes and adjusting production based on sales figures. Overall, the information presented is relevant and largely accurate.		
		3–4 marks	Good explanation of the benefits of electronic point of sales (EPOS) for fashion manufacturers and retailers. The response shows some understanding of the use of EPOS, and gives a few different points in the answer. At the top end of the mark band, there is some insight into the benefits, while there is a lack of detail at the low end. In this mark band, likely points explain the use of barcodes and adjusting production based on sales figures. Overall, the information presented is mostly relevant, with some accuracy.		
		1–2 marks	Basic explanation of the benefits of electronic point of sales (EPOS) for fashion manufacturers and retailers. The response shows a limited understanding of the use of EPOS, and gives a very narrow range of different points in the answer. At the top end of the mark band, there is a little awareness of the benefits, while there is confusion at the low end. In this mark band, likely points explain the use of barcodes to give sales figures only. The information presented may not be relevant or accurate.		
		0 marks	No response or nothing worthy of credit.		
		Indicative			
		• It remove product • It is a sile processe	uses electronic data interchange (EDI) to communicate ation directly to the company.  Wes the need for paper documents such as invoices and		

- Sales information is sent directly to the manufacturer.
   Production is automatically adjusted to make more of the best-selling products, and reduce or stop production of products with low sales.
- Stock levels are automatically updated. EPOS sends information to replenish stock to stores based on product sales.
- Facilitates JIT production, minimising storage and allows effective cash flow.
- Sales information is used to **design new fashion collections** in the future.
- **Keeps customer information** for marketing purposes and sends out offers and discounts to attract further sales.
- Garments are manufactured to the level of demand eg sizes, colourways and demographics, so retailers are not left with wasted stock.

Qu	Part		Marking Guidance	Total marks	АО
07		Explain ho	w the fibre content in <b>Figure 2</b> enhances the properties of jumper.	9 marks	AO4 1b
		7–9 marks	Detailed explanation how the fibre blend enhances the properties of the fabric. The response shows an indepth understanding of the question, with detail of the properties of all four fibres, and how each fibre type contributes to the fabric. In this mark band there is clear evidence of a counterbalance and some explanation how the fibres work together in the blend. There is a wide range of appropriate properties; at the low end of the mark band there may be slight inaccuracies, but this does not detract from the overall quality of the response.		
		4–6 marks	Good explanation how the fibre blend enhances the properties of the fabric. The response shows some understanding of the question, with sufficient information about the properties of most of the fibres to explain how they contribute to the fabric. In this mark band there may be evidence of how the fibres work together in the blend, but it is likely that that the fibres are discussed in isolation. A narrow range of properties are given; at the low end of the mark band, there may be inaccuracies and a lack of detail.		
		1–3 marks	Basic explanation how the fibre blend enhances the properties of the fabric. The response shows a limited understanding of the question, with little information about the fibre properties to explain how they contribute to the fabric. In this mark band there is little or no evidence how the fibres work together in the blend, instead they are mostly discussed in isolation. Few properties are given; and at the low end of the mark band, the information is confused and inaccurate.		
		0 marks	No response or nothing worthy of credit.		
		stre is n alth the cre give	a fairly strong fibre, but the addition of <b>nylon</b> will add to the ength making the fabric more hardwearing naturally absorbent and will help to absorb perspiration, nough is water repellent on the fibre surface due to lanolin crimp will help the fabric to keep its shape and shed any ases es the blend warmth, as the crimp traps air to create		
			rmal insulation s a soft and a full handle suitable for knitwear fabric		

- the other fibres in the blend are smooth and may counteract wool's tendency to irritate the skin
- the amount of moisture in wool prevents it from being a flammable fabric
- the short, staple fibres of wool will contribute to pilling, however the other fibres in the blend will help minimise bobbling on the fabric surface.

## Nylon:

- is a synthetic, non-absorbent fibre, which will balance with the wool to help regulate body temperature
- can be heat set, and in combination with wool and elastane, it has the ability to hold shape
- is a fairly cool fibre that does not trap air, but in combination with wool will create a reasonably warm fabric
- will smoulder or melt in contact with extreme heat but wool prevents it from being a flammable fabric
- is prone to the build-up of static electricity, but the moisture content in **wool** will reduce this effect.
- will help reduce **wool's** tendency to shrink, enable a quicker drying time and make it easier to care for.

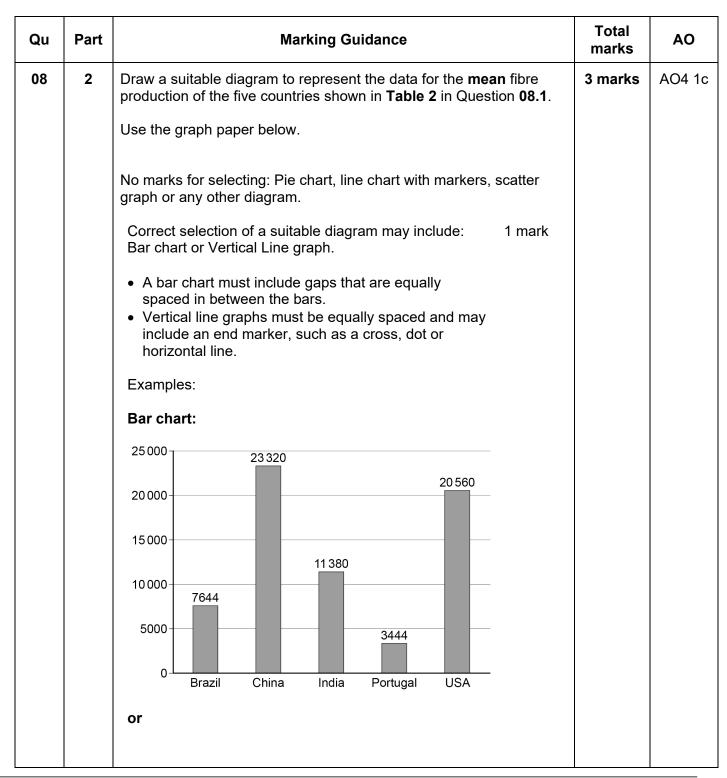
#### Metal fibres:

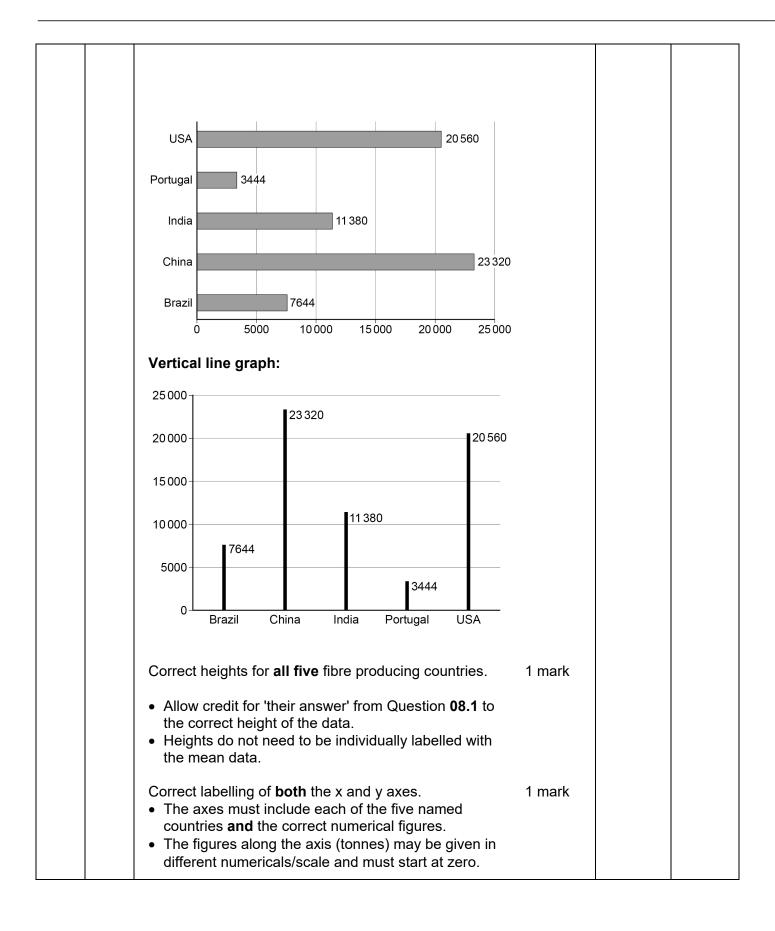
- reflect light providing an interesting visual and colour effect to enhance the fabric
- the light reflecting properties will add sparkle, especially in combination with **wool** which does not have a natural lustre.

#### Elastane:

 the addition of the small amount of elastane provides the fabric with stretch and recovery properties.

Qu	Part	Marking Guidance		AO
08	1	<b>Table 2</b> shows production in tonnes for five fibre producing countries.	1 mark	AO4 1c
		Complete <b>Table 2</b> .		
		20 560		





Qu	Part	Marking Guidance	Total marks	АО
09		Explain the points a designer will need to consider when creating a specification for children's fancy dress clothing.	6 marks	AO4 1c
		5–6 marks  Detailed explanation of the points a designer will need to consider when creating a specification for children's fancy dress clothing. The response presents a number of different points that are wide in scope, and appropriate to both the target market and the product type. Points made are insightful and may include examples of materials, properties or decorative elements to support the answer. At the top end of the mark band specific detail is given, at the low end there may be some minor irrelevant points, but there is an overall evidence of in-depth knowledge and understanding of the different qualities.		
		3–4 Good explanation of the points a designer will need to consider when creating a specification for children's fancy dress clothing. The response presents a few different points that are mostly appropriate, stronger responses will reference both the target market and the product type. Points made are valid, and the response may include some references to relevant examples of materials, properties or decorative elements. At the top end of the mark band some detail is given, illustrating knowledge and understanding; at the low end there are a few irrelevant points or a slight lack of clarity.		
		1–2 marks  Basic explanation of the points a designer will need to consider when creating a specification for children's fancy dress clothing. The response presents a limited number of points that are narrow in scope, and may not be the most appropriate to either the target market or the product type. Points made are weak and generalised, any examples of materials, properties or decorative elements are the more obvious, or may not be included in weaker responses. At the top end of the mark band there are one or two valid points; at the low end there is a lack of knowledge and clarity.		
		0 marks No response or nothing worthy of credit.		
		Indicative content		
		<ul> <li>Fabric enhancement – the use of embroidery, dyeing, or printed elements to add colour and pattern.</li> <li>Fabrics – colourful fabrics in line with a theme or characters; including interesting textures such as satin, lace, or sheer fabrics</li> </ul>		

- **Novelty effects** for example glitter, metallic, neon, glow in the dark. Including features unique to characters or themes, such as wings, lacing or logos.
- **Components** decorative components such as trims, ribbons, fringing or diamante for three dimensional effects. Functional components suitable for the target market eg elastic waistband.
- **Comfort** fabric with stretch that is easy-dressing, such as jersey or the use of elastane.
- **Safety** awareness of fire hazards, including warning labels on clothing and the use of non-flammable materials.
- Accessories hats, bags and other items appropriate to a theme.
- Wash care garments may be required to be easy care or spotcleaned.
- **Cost** low cost fabric eg polyester, as children grow quickly and may wear fancy dress clothing only a few times.
- **Target market** age appropriate styling/content and inclusivity.

If only a list of correct points is given with no explanation 1 mark.

Qu	Part	Marking Guidance	Total marks	AO
10		Analyse and evaluate the environmental sustainability of Lyocell® fibre.  In your answer include:  • the source of raw material  • fibre manufacturing  • transportation.	12 marks	AO3 2a AO3 2b
		9–12 Detailed analysis and evaluation of the ways in which Lyocell® is sourced, manufactured and transported. In this mark band all three elements from the question; sourcing, manufacturing and the transportation of Lyocell® have been correctly analysed, not necessarily in equal balance, but there is a clear understanding of the issues, and the points raised accurately relate to the environmental sustainability of Lyocell®. The analysis includes a range of benefits and drawbacks, which largely relate well to sustainability issues. At the top end of the mark band there are some perceptive comments, while at the low end there may be more positive than negative points, but this does not detract from the overall quality of the response.		
		Good analysis and evaluation of the ways in which Lyocell® is sourced, manufactured and transported. In this mark band there is some attempt to analyse all three elements from the question; sourcing, manufacturing and the transportation of Lyocell®, but probably not in equal measure. Some responses may focus on two of the three elements only, however there is some understanding of the issues and most points accurately relate to the environmental sustainability of Lyocell®. The analysis is likely to include both positive and negative points, but these may not always relate to sustainability issues. At the top end of the mark band there are some valid comments, while at the low end there may be a lack of detail, and more generalised information.		
		1–4 marks  Basic analysis and evaluation of the ways in which Lyocell® is sourced, manufactured and transported. In this mark band there is limited reference to the three elements from the question, or the response may focus more generally on one or two areas only. There is little understanding of the issues and few points accurately relate to the environmental sustainability of Lyocell®. There may be some attempt to discuss negative points, but these do not always relate to sustainability issues and may be presented as generalised concerns. At the top end of the mark band there is a little understanding,		

	while at the low end there is likely to be a lack of knowledge with confusion and inaccuracies.
0 marks	No response or nothing worthy of credit.

## Sourcing:

- Lyocell<sup>®</sup> is a cellulose based fibre sourced from that is made from wood pulp
- the pulp used to make the fibre is mostly sourced from eucalyptus, and sometimes from oak and birch trees
- eucalyptus is a fast growing tree that needs no irrigation
- it can easily grow on land that is unsuitable, or not fit for food or farming
- most of the raw material is sourced from managed forests, where trees are replanted for those cut down
- unlike many other fibres, the raw material used to make Lyocell<sup>®</sup> does not require pesticides or fertilisers
- to be environmentally sustainable, it must be sourced from managed forests
- however, sourcing the raw material uses heavy machinery that relies on non-renewable materials such as coal and oil.

# Manufacturing:

- Lyocell<sup>®</sup> is manufactured through a wet spinning process
- the raw material is cut into small chips, made into a pulp and dissolved by a chemical to make the spinning solution
- the chemical used, amine oxide, is non-toxic
- the spinning solution is pushed through spinnerets to make the fibre
- Lyocell<sup>®</sup> is made in a closed-loop process; the solvents are recovered, purified and reused, creating minimal waste
- Lyocell<sup>®</sup> is biodegradable, and can fully degrade in eight days
- it is processed in factories where machinery use fossil fuels and other forms of non-renewable energy.

# **Transportation:**

- Lyocell® is usually made off-shore, mostly in China and Asia
- transporting the fibre or fabric has a significant impact on the environment
- packaging may be plastic or not environmentally sustainable
- transportation such as lorries, planes and ships use nonrenewable fossil fuels
- the burning of these fuels releases CO<sup>2</sup> emissions, contributing to global warming
- oil spills from ships can pollute waterways and cause harm to marine life
- transportation to warehousing and retailers from ports causes further air pollution.

Qu	Part		Marking Guidance	Total marks	АО
11		Outline the fashion pro	e differences between batch and bespoke production of oducts.	6 marks	AO4 1b
		5–6 marks	Detailed outline of the differences between batch and bespoke production. The response is perceptive and demonstrates an in-depth understanding of both production methods, and gives a detailed account of the differences between the two. At the low end of the mark band, there may be a lack of detail, with slight inaccuracy, but there is a good overall awareness of each process.		
		3–4 marks	Good outline of the differences between batch and bespoke production. The response is explained with some detail and demonstrates good understanding of both production methods, although there may be a more detailed account of one method over the other. At the low end of the mark band, there is likely to be a lack of detail, with some inaccuracy, but there is a reasonable awareness of each process.		
		1–2 marks	Basic outline of the differences between batch and bespoke production. The response is limited in its scope and demonstrates very little understanding of the two production methods. It is likely the information is generalised, or focuses on one method of production, with only a few correct points. At the low end of the mark band, there may be confusion and inaccuracies.		
		0 marks	No response or nothing worthy of credit.		
		Indicative	content		
		<ul> <li>many pr</li> <li>batches</li> <li>batch pr</li> <li>manufac</li> <li>products</li> <li>garment</li> <li>made or</li> <li>with high</li> </ul>	s are made by a team of skilled workers in a factory roducts are made at the same time in one run or in several, which can range from a few to thousands of items roduced items are quality checked at certain points during		

## **Bespoke production:**

- products are made by one highly skilled craftsperson
- a singular garment or textile product is usually made only once, or as part of a small collection
- bespoke products are usually made with care and are finished to a high standard throughout
- products are unique or one-off items
- garments are made to measure for an individual client
- it is an expensive method of production, due to labour costs and high quality materials
- often includes hand-sewing and finishing.

Qu	Part		Marking Guidance	Total marks	AO
12		construction	qualities required in work trousers for use on a n site. wer you should refer to suitable:	9 marks	AO4 1c
		marks	Detailed outline of the qualities required in work trousers for use on a construction site. An excellent awareness of a wide range of different types of qualities which are specifically related to work trousers. Explanations are perceptive and stronger responses give detailed information, which may include examples to help illustrate the points made. All three areas (fibres, fabrics and finishes) are discussed in a fairly equal balance, especially at the top end of the mark band. There may be a slight lack of knowledge at the low end, but this does not detract from the overall understanding shown in the answer.		
		marks	Good outline of the qualities required in work trousers for use on a construction site. A good awareness of a range of different types of qualities, which are mostly related to work trousers. Explanations are mostly accurate, and stronger responses give some detail, which may include examples to help illustrate the points made. The three areas (fibres, fabrics and finishes) are either discussed in more general terms or there may be more focus on one or two areas. At the top end of the mark band there is a fair understanding, however at the low end, points are more obvious and lack specific knowledge.		
		marks	Basic outline of the qualities required in work trousers for use on a construction site. A poor awareness of a range of the different types of qualities, which are not always related to work trousers. Points lack detail or give generalised information which are not effectively explained. There is little attempt to discuss all areas of the question (fibres, fabrics and finishes) instead the response may focus on one area or give general points. At the top end of the mark band there is a limited understanding, however at the low end, points are confused and inaccurate.		
		0 marks	No response or nothing worthy of credit.		

#### Fibres:

- synthetic fibres such as polyester and polyamide provide strength, durability are non-absorbent and lightweight
- natural fibres eg cotton are strong, breathable and good at absorbing moisture
- fibres such as carbon and Kevlar® provide strength and high abrasion resistance in areas of wear eg knees
- elastomeric fibres give stretch and recovery properties, allowing easier movement
- fibre blends will provide specific properties for work trousers.

#### Fabrics:

- Woven fabric such as a twill weave, is a very strong and durable structure that hides dirt well.
- Hardwearing plain woven fabrics, particularly closely woven synthetic yarns eg nylon ripstop.
- Knitted fabric provides some give. Warp knitted structures are stable and more durable than weft knits.
- A laminated fabric such as Gore-tex® or Sympatex® provide breathability and water resistance.
- May be required to represent company colours or be easily recognisable on site with high visibility fabrics for safety.

#### Finishes:

- flame retardancy such as Proban<sup>®</sup> and Pyrovatex<sup>®</sup> on cotton fabrics provide protection when working near flames/prevent the spread of fire
- water resistance may be required, especially when working in wet conditions
- non-iron finishes such as Teflon provide crease resistance
- work trousers may not be washed or cleaned very often, hygienic finishes keep trousers cleaner for longer.

Qu	Part		Marking Guidance	Total marks	АО
13		Compare a printing by	and contrast modern fabric printing methods with fabric hand.	9 marks	AO3 2a AO3 2b
		7–9 marks	Detailed comparison of modern fabric printing methods with fabric printing by hand. In this mark band the response illustrates an in-depth understanding of the two different ways of printing onto fabric. There are a number of relevant and accurate points in the response. At the top end of the mark band the student shows an excellent analysis and evaluation of the advantages and disadvantages of both methods. At the lower end there may be a slight element of inaccuracy, however the overall comparison of modern fabric printing methods with fabric printing by hand is thorough, and shows an excellent knowledge and understanding of specific types of printing methods for both modern and printing by hand.		
		4–6 marks	Good comparison of modern fabric printing methods with fabric printing by hand. In this mark band the response illustrates a satisfactory understanding of the two different ways of printing onto fabric. There are a few relevant and accurate points in the response. At the top end of the mark band the student shows some analysis and evaluation of the advantages and disadvantages of both methods, although not necessarily in equal balance. At the lower end the information has some inaccuracies, however the overall comparison of modern fabric printing methods with fabric printing by hand shows a good awareness and understanding of specific types of printing methods for both modern and printing by hand.		
		1–3 marks	Basic comparison of modern fabric printing methods with fabric printing by hand. In this mark band the response illustrates a weak understanding of the two different ways of printing onto fabric. A lack of clear understanding leads to a limited analysis and evaluation of the advantages and disadvantages of both methods. There is little or no attempt to give drawbacks and the response focuses on a narrow area, with only a few relevant discussion points. There is limited awareness of the key points at the top end of the mark band. At the lower end there may be inaccuracies and confusion, or only descriptions of modern fabric printing methods and fabric printing by hand.		
		0 marks	No response or nothing worthy of credit.		

## **Modern printing**

- Examples may include digital printing, transfer printing/dye sublimation, rotary screen printing.
- Technology allows printed fabric to be created with many layers and various shades of colour at the same time eg digital printing.
- Fabric travels at high speed on a printing table, with heaters to dry and cure the pigment in-between the application of each colour.
- Many hundreds of metres of fabric run through machines at a quick rate.
- Complex designs, including photographic images can be created easily using CAD.
- CAM allows for fast production.
- Usually, inexpensive compared to hand printed fabric, although some designs can be more exclusive.
- Technology helps to create good quality printed fabric with high levels of accuracy.
- Allows quick editing and short sample runs.

However, it is costly to set up.

## Printing by hand

- Examples may include block, stencil and screen printing.
- is usually applied in blocks of colour, with each colour applied separately.
- Drying time is added between each application of pigment, to build up the layers of colour.
- One piece of fabric is printed at a time.
- Printing by hand is a creative process which makes individual and unique fabrics.

However, printing by hand is very time consuming.

- It is labour intensive and usually expensive to produce.
- Mistakes and mis-prints are easily made.
- Printing by hand can only produce small quantities of printed fabric at one time.
- Hand printed fabric is usually made up of a few colours only.
- Designs are limited to the stencil or carved block.

Do not accept quick/easy/cheap without further explanation.

Qu	Part	Marking Guidance		Total marks	АО
14		A manufacturer prints 2150 metres of fabric. It takes print <b>each</b> metre.	11 minutes to	4 marks	AO4 1c
		The design is changed for a second batch of 1980 me metre takes 9 minutes to print.	etres, and <b>each</b>		
		Calculate the percentage decrease in the time it takes second batch.	s to print the		
		Show your working.			
		If there is no working but correct answer is given, awa	ard full marks.		
		Indicative content			
		Batch 1 = 2150 × 11 = 23 650 (min)	1 mark (M)		
		or			
		Batch 2 = 1980 × 9 = 17 820 (min)			
		1 mark for either batch 1 or batch 2 calculation			
		their 23 650 – their 17 820	1 mark (M)		
		or			
		their 5830			
		their 5830 their 23 650 <b>or</b> 0.2465	1 mark (M)		
		or			
		their 0.2465 × 100			
		Answer = 24.65%	1 mark (A)		
		Must be the correct answer shown above, no 'their answer' carry through.			

Qu	Part	Marking Guidance	Total marks	АО
15		Give <b>two</b> reasons why piping is used on home furnishings.	2 marks	AO4 1b
		<ul> <li>Any 2 relevant points, 1 mark each.</li> <li>As a decorative feature/to add colour or pattern</li> <li>To strengthen edges/seams</li> <li>Often used to define the shape/structure of home furnishings.</li> </ul>		
		Do not award credit for:  • Hide/finish/neaten seams/edges.  Award any other valid responses.		

Qu	Part	Marking Guidance	Total marks	AO
16		State <b>two</b> reasons why a designer might use a prediction company when creating a new collection.	2 marks	AO4 1b
		<ul> <li>Any 2 relevant points, 1 mark each.</li> <li>To ensure future collections are on trend.</li> <li>To ensure that on trend colours/fabrics/styles/patterns/components are used.</li> <li>To meet upcoming target market/consumer needs.</li> <li>To ensure products sell in a future/specific season.</li> <li>To avoid waste by selecting/using materials that will be in demand</li> <li>To increase profits by designing collections which are on trend.</li> <li>To inspire designs for a new collection.</li> <li>Not about predicting sales or ordering stock but about designing a collection.</li> <li>Award any other valid responses.</li> </ul>		

Qu	Part		Marking Guidance	Total marks	АО
17		(QRM) in er	d evaluate the role of quick response manufacturing nvironmental and ethical issues related to fashion.  Detailed analysis and evaluation of the role of quick	9 marks	AO3 2a AO3 2b
			response manufacturing (QRM) in environmental and ethical issues related to fashion. There is an excellent analysis of QRM and its purpose in speeding up fashion production, and this is related well to its impact. A wide range of points are given, which give a very good insight, and correctly relate to both environmental and ethical issues. The information presented is appropriate with mostly accurate points. At the lower end of the mark band the analysis may lack minor elements of detail or focus slightly on one area over the other, but this does not detract from a thorough understanding of the issues.		
		marks   1	Good analysis and evaluation of the role of quick response manufacturing (QRM) in environmental and ethical issues related to fashion. There is some analysis of QRM and its purpose in speeding up fashion production and there is an attempt to explain its impact. Some correct points are given which give an insight into the issues, and correctly relate to environmental and ethical concerns; there is likely to be more focus on one area over the other. The information given is appropriate with some accurate points. At the lower end of the mark band the analysis may lack detail or be limited in scope, but there is sufficient understanding of the main issues.		
		marks I	Basic analysis and evaluation of the role of quick response manufacturing (QRM) in environmental and ethical issues related to fashion. There is a limited analysis of QRM and its purpose in speeding up fashion production, and there is little or no attempt to explain its impact. Few correct points are given, and the response is generally weak and likely to focus on either environmental or ethical issues. It is likely that most of the information is generalised, with a narrow range of points which may only include reference to Just-in-time (JIT). At the lower end of the mark band there are some elements of confusion and a lack of detail and understanding of the issues.		
		0 marks	No response or nothing worthy of credit.		

QRM systems can **respond quickly** to changing fashion trends:

- high volumes of garments are produced in batches to meet demand
- the garments are usually inexpensive, making fashion more affordable
- allowing consumers to keep up with changing fashion trends/fast fashion
- although this encourages consumers to buy more clothing than needed
- which is often of a low quality.

## **Environment issues in fashion:**

- the use of fossil fuels in garment production leads to increased CO2 emissions in countries where QRM is used and where air pollution may already be at high levels.
- it encourages the use of synthetic fabrics eg polyester and nylon
- these fibres are quick to produce, but are made using finite resources such as gas and coal
- synthetics fibres take hundreds of years to biodegrade
- barely worn items produced using QRM are often disposed into landfill
- fast fashion production can lead to many tonnes of waste products.
- However, if amount of production reflects actual demand it allows for small batches of a wide range of products to be manufactured quickly in response to demand, so can reduce amount of unwanted stock when fashion/demand changes; reduced wastage lessens impact on environment.
- Just-in-time (JIT) is a stock control management system
  that ensures that the materials needed for production arrive
  at the time when they are needed and in the required
  quantity for the batch being made. This minimises stock
  storage and wastage; reduced wastage lessens impact on
  environment.

#### Ethical issues in fashion:

- garments are usually made off-shore to take advantage of low production costs
- factories are often unregulated and can raise health and safety concerns
- production is often carried out in poor working environments eg sweatshops
- often this results in the use of cheap or child labour
- workers can be poorly paid or underpaid

and can be exposed to toxic chemicals and dangerous practices
 However, some factories are beneficial to the communities in which they are located eg: providing education, housing, good health & welfare of workers.

Award any other valid responses.

Qu	Part	Marking Guidance		Total marks	АО
18	1	<b>Show</b> that the radius of the hemisphere is 43 cm to cm.	the nearest	4 marks	AO4 1c
		The volume of a hemisphere is found using			
		$V = \frac{2}{3} \pi r^3$			
		Indicative content			
		Volume of cylinder (π r²h)			
		$= \pi \times 39^2 \times 35$	1 mark (M)		
		Volume of cylinder = [167 157, 167 265]	1 mark (A)		
		or = 53235 $\pi$			
		Volume of a hemisphere	1 mark (M)		
		$r^3 = \frac{\text{their} \left[167\ 157, 167\ 265\right] \times 3}{2\pi}$			
		<b>or</b> [79 801, 79 904]	1 mark (A)		
		$r = \sqrt[3]{[79801,79904]}$	Tillaik (A)		
		or			
		= [43.0, 43.1]			
		(No final mark for just 43 on its own).			

Qu	Part	Marking Guidance		Total marks	АО
18	2	It costs 8 p to fill one hemisphere with child-safe was Work out the cost of 1 m³ of this wadding to the near Show your working.  If there is no working but correct answer is given, as Indicative content  Their [167 157, 167 265] 100³  = [0.167 157, 0.167 265] (convert to m³)  or  8 Their [167 157, 167 265]  = their [0.0000478, 0.0000479] (cost per cm³)  or  [47.859, 47.828] (answer not rounded) 3 ways to score 1 mark	arest penny.	2 marks	AO4 1c
		48 (p)	1 mark (A)		

Qu	Part	Marking Guidance	Total marks	AO
19		Explain the characteristics of the <b>three</b> sales and marketing cycles shown in <b>Figure 4</b> .	6 marks	AO4 1b
		5–6 marks  Detailed explanation of the three sales and marketing cycles. An in-depth understanding of the fashion cycles, with accurate information about their characteristics, along with correct references to the time period. All three cycles are explained, although not necessarily in equal proportion. There may be a slight lack of detail at the low end of the mark band, however this does not detract from the overall understanding shown in the response.		
		3–4 marks Good explanation of the three sales and marketing cycles. A satisfactory understanding of the fashion cycles, with sufficient information about their characteristics, along with a few correct references to the time period. Some accurate detail about two or more cycles, or all three cycles are explained with limited information. At the low end of the mark band there may be a lack of understanding and clarity in the response.		
		1–2 marks  Basic explanation of the three sales and marketing cycles. A poor understanding of the fashion cycles, with limited information about their characteristics, and little or no reference to the time period. There is a lack of detail in general, and the answer may focus on one or two cycles only. At the low end of the mark band the response may confuse the characteristics of the three cycles, and will lack understanding or there may only be a description of the cycles with no explanation.		
		0 marks No response or nothing worthy of credit.		
		Fad:  • becomes a 'must-have' item that is in high demand  • often for novelty, accessories or seasonal fashion products  • high volume sales peak very quickly  • it is a short-lived trend, lasting a matter of weeks or one season		
		<ul> <li>until it drops out of fashion as quickly as it appeared.</li> <li>Standard:</li> <li>standard fashions have a longer popularity than fad fashions, but shorter than classic</li> <li>the main fashion trend for high street retailers</li> <li>fashions are usually standard products or separates, with changes in colour, prints and detail each season</li> </ul>		

- sales build over a medium-term period, and fall as a new standard trend comes into fashion
- a standard trend usually lasts one or two seasons
- Standard fashions become obsolete at the end of the cycle and may not come back into fashion for some time.

#### Classic:

- products are seen as iconic or staples in a wardrobe
- timeless products that rarely go out of fashion
- sales are often slow to grow, but then remain constant
- classic products are popular for many years and never seem to go out of fashion.