A-level

DESIGN AND TECHNOLOGY: FASHION AND TEXTILES 7562/1

Paper 1 Technical Principles

Mark scheme

June 2020

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.

Further copies of this mark scheme are available from aqa.org.uk

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 π	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.

<table>
<tr><th>Qu</th><th>Part</th><th>Marking Guidance</th><th>Total marks</th><th>AO</th></tr>
<tr><td>01</td><td></td><td>Complete Table 1 by inserting the correct two fibres into each category from the selection below.

Do not use any fibre more than once.

1 mark per correct placement of the fibres as follows:

Table 1
<table><tr><th>Cellulose fibres</th><th>Hair fibres</th><th>Inorganic fibres</th></tr><tr><td>Linen</td><td>Angora</td><td>Carbon</td></tr><tr><td>Ramie</td><td>Mohair</td><td>Metallic</td></tr></table></td><td>6 marks</td><td>AO4 1a</td></tr>
<tr><td>02</td><td></td><td>Explain what is meant by the term ‘denier’.

Any 2 appropriate points, 1 mark each.

Indicative content:

• a unit of measurement to describe yarn thickness or weight
• the higher the number, the thicker the yarn
• one denier is the weight in grams of 9000 m of yarn.

Award any other valid responses.</td><td>2 marks</td><td>AO4 1a</td></tr>
</table>

<table>
<tr>
<td>03</td>
<td></td>
<td>Explain the difference between retro and vintage fashions.
<table>
<tr><td>3–4 marks</td><td>Detailed explanation of the differences between retro and vintage fashions. Response demonstrates a clear understanding of the two type of fashions, with some appropriate information to support the answer, especially at the top end of the mark band.</td></tr>
<tr><td>1–2 marks</td><td>Good explanation of the differences between retro and vintage fashions. The response shows some understanding, although there may be more focus on one type over the other. There may be some confusion, especially at the low end of the mark band.</td></tr>
<tr><td>0 marks</td><td>No response worthy of credit.</td></tr>
</table>
Indicative content:

• Vintage fashions are <u>original</u> or genuine garments from a given era or decade in fashion history.
Styles from the 20th century, specifically between 1920 and 2000 are considered as vintage.
Vintage fashions can be sourced from antiques fairs, flea markets, charity shops or specialist boutiques.

• Retro, is short for ‘retrospective’. These styles are modern fashions that <u>imitate</u> the styles of previous eras.
They are newly manufactured garments that are intentionally designed to look like previous styles.
Retro fashions can be easily found in high street stores or fancy dress shops.

Award any other valid responses.</td>
<td>4 marks</td>
<td>AO4 1a</td>
</tr>
</table>

04		Explain **three** advantages of vertical in-house production. Indicative content: Any three appropriate points, 1 mark each • communication is improved where retailers design, manufacture and distribute their own products, usually from the same site • raw materials for design and production are bought to the site from sources as local as possible • being on one site means better communication between departments, which allows lead times to be shortened so products reach stores quickly • products made by vertical in-house production have minimum environmental impact as resources do not need to be transported between sites. • reduces costs of outsourcing manufacture to other companies/ suppliers • Assists with quick response manufacturing in response to sales. Award any other valid responses. Do **not** award marks for cheaper, quicker or faster.	**3 marks**	AO4 1a

05 **Table 2** shows the time taken in minutes for a machinist to sew a pair of leggings.

Table 2

Time taken, *t,* minutes	0 ≤ t ≤ 10	10 ≤ t ≤ 20	20 ≤ t ≤ 30	30 ≤ t ≤ 40	40 ≤ t ≤ 50	50 ≤ t ≤ 60
Frequency of leggings	2	9	17	27	18	7

05 **1** Use the data from **Table 2** to complete the cumulative frequency in **Table 3**.

1 mark AO4 1c

Table 3

Time taken, *t,* minutes	0 ≤ t ≤ 10	0 ≤ t ≤ 20	0 ≤ t ≤ 30	0 ≤ t ≤ 40	0 ≤ t ≤ 50	0 ≤ t ≤ 60
Cumulative frequency						

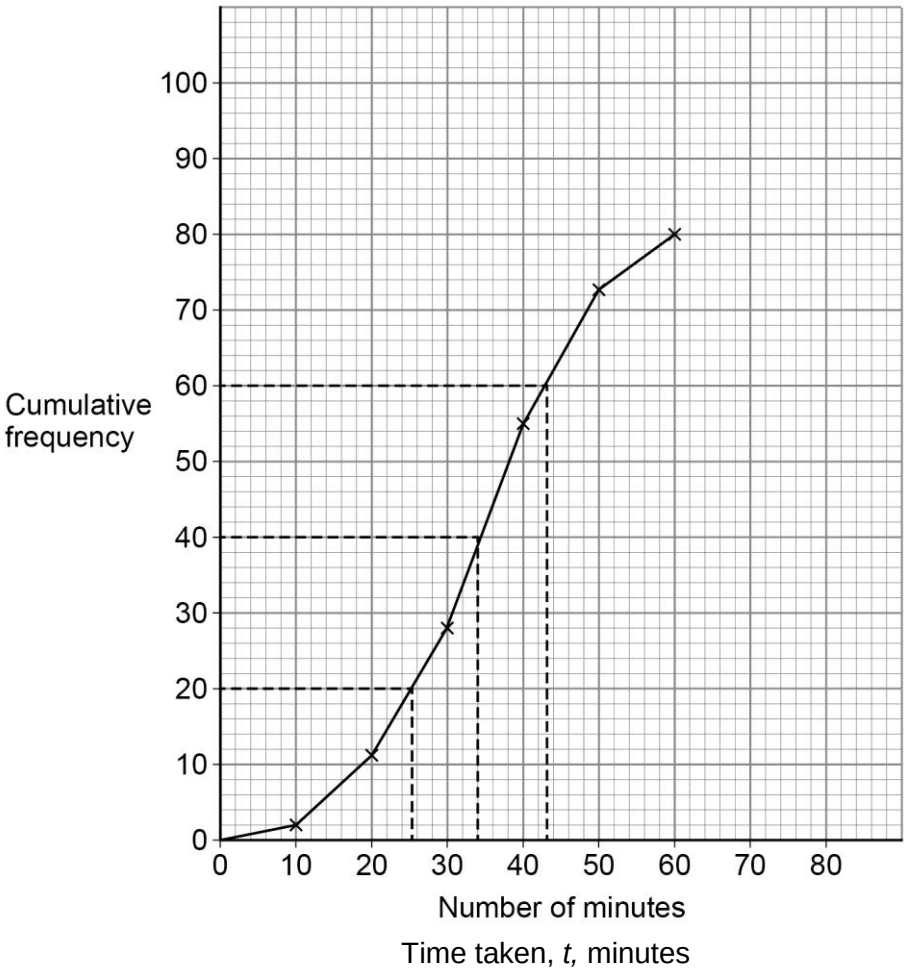
Entries as follows:

Time taken, *t,* minutes	0 ≤ t ≤ 10	0 ≤ t ≤ 20	0 ≤ t ≤ 30	0 ≤ t ≤ 40	0 ≤ t ≤ 50	0 ≤ t ≤ 60
Cumulative frequency	**2**	**11**	**28**	**55**	**73**	**80**

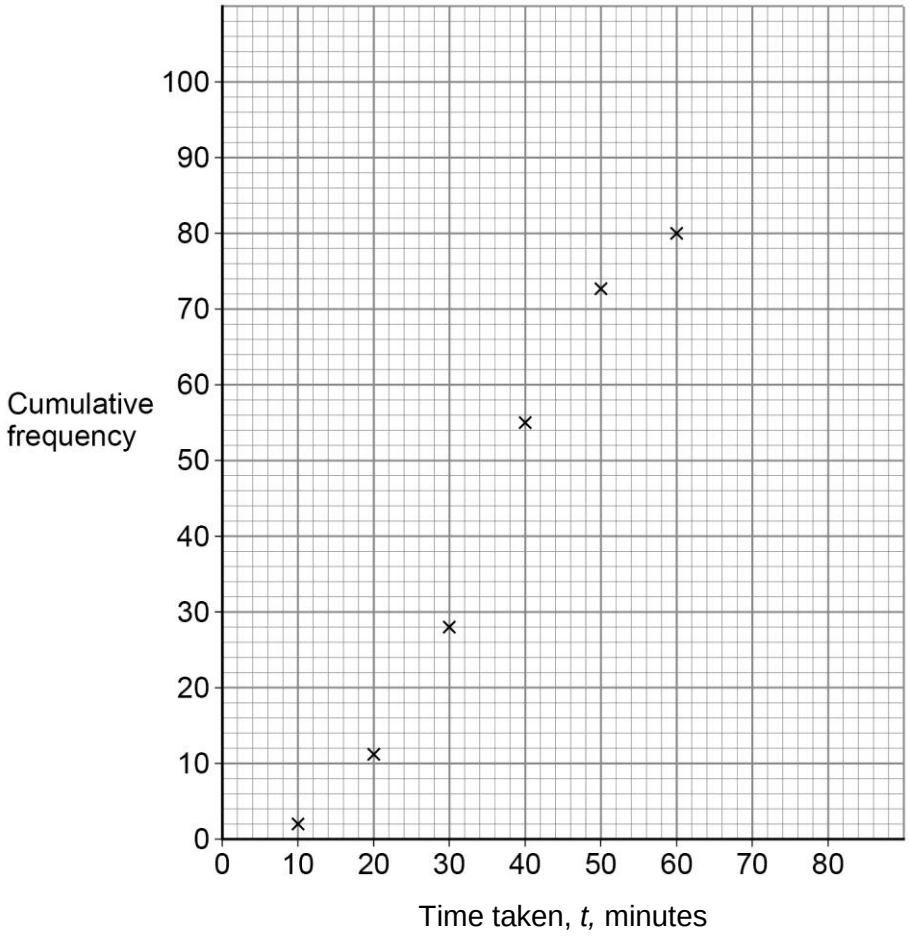
05	**2**	Use the information from **Table 3** to plot the graph in **Figure 1**.	**2 marks**	AO4 1c

Correct cumulative frequency diagram, points plotted and joined with a curve or straight lines.

1 mark for the correct cumulative frequencies
1 mark for plotting to the top end of each group
1 mark for diagrams that are plotted, but not joined with a curve or straight line



Or


Cumulative frequency
0
10
20
30
40
50
60
70
80
90
100
0
10
20
30
40
50
60
70
80
Time taken, *t,* minutes

05	**3**	Use your graph to estimate values for the: median upper quartile lower quartile From <u>their</u> cumulative diagram only. Median – approximately **34** 1 mark Upper quartile – approximately **43** 1 mark Lower quartile – approximately **25** 1 mark	**3 marks**	AO4 1c

<table>
<tr>
<td>06</td>
<td></td>
<td>
Analyse and evaluate the use of warp and weft knitted fabrics for casual wear.
<table>
<tr><td>5–6 marks</td><td>Detailed analysis and evaluation of the use of warp and weft knitted fabrics for casual wear. The qualities of both knitted structures are discussed with reasonable balance, especially at the top end of the mark band. Response gives appropriate evaluations of the fabrics, while coherent links are made to the use of knits for casual wear.</td></tr>
<tr><td>3–4 marks</td><td>Good analysis and evaluation of the use of warp and weft knitted fabrics for casual wear. The qualities of both knitted structures are discussed, but may lack detail about one of the two knits. Links are made to casual wear, but these are generic in nature. Evaluations are less detailed at the lower end of the mark band.</td></tr>
<tr><td>1–2 marks</td><td>Basic analysis and evaluation of the use of warp and weft knitted fabrics for casual wear. Some qualities of the knitted structures are given, but these may lack detail and explanation. Response may focus on positives uses only, with little reference to the evaluative qualities of knits; while links to casual wear are limited.</td></tr>
<tr><td>0 marks</td><td>No response worthy of credit.</td></tr>
</table>
Indicative content:

Weft knitted fabrics have a good stretch, and often return back to their original shape. They drape well to the body and do not crease easily. Due to their looped structure, weft knits can trap air making the fabric thermally insulating in still air; yet moving air is able to pass through, making the fabric cool to wear.

However, weft knitted fabrics can distort and lose their shape, especially over time and in areas of stress. If the yarns are snagged, ladders are easily created, making holes in the fabric.

Warp knitted fabrics have less stretch than weft knits, and produce fairly firm and stable knitted structures. The fabric does not ladder, so cannot unravel row by row, making the fabric more hardwearing (to abrasion). Many variations of warp knits can be created, such as three-dimensional structures for decorative effects.

However, the lack of give in warp knitted fabrics may not be suitable for active/flexible movement.

Award any other valid responses.
</td>
<td>6 marks</td>
<td>AO3 1a
AO3 1b</td>
</tr>
</table>

07 | **12 marks** | AO3 2a AO3 2b

Discuss how computer controlled systems are used to reduce waste, improve production, and assist the distribution and storage of fashion products.

9–12 marks	Detailed discussion, with a clear understanding of the use of computer controlled systems for fashion products. The response will show a good awareness of all three areas; reducing waste, benefitting production and assisting distribution & storage. Although these may not be evenly discussed at the lower end of the mark band, information is largely accurate.
5–8 marks	Good discussion with some understanding of the use of computer controlled systems for fashion products. The response will show sufficient awareness of all three areas, reducing waste, benefitting production and assisting distribution & storage; although there will be a lack of detail in some areas, especially at the lower end of the mark band.
1–4 marks	Basic discussion with limited understanding of the use of computer controlled systems for fashion products. The response shows some links with reducing waste, benefitting production and assisting distribution & storage; although these will be narrow and superficial in scope. There will be inaccuracies, especially at the lower end of the mark band.
0 marks	No response worthy of credit.

Indicative content:

Reduce waste

- Computer aided design (CAD) saves time and physical resources, such as paper and fabrics.
- Designs can be adapted electronically without starting from scratch; design decisions can be made without the need for physical product development.
- A pattern design system (PDS) creates virtual samples, saving on resources. Pattern templates with complex features can be made without error and grading is completed automatically.
- PDS produces lay plans, automatically placing pattern templates with minimum fabric waste.
- CAD systems allow interaction between designer and manufacturer for global communication.

Benefit production

- Computer numerically controlled (CNC) machines can enable parts to be cut and stitched through CAM, eg buttonholes and dart making, ensuring precise stitching.

		• Computer aided manufacture (CAM) controlled looms and knitting machines, produce lengths of fabric continuously, as well as seamless and 3D knitting. • Digital printing requires little physical preparation, printing directly to fabric, saving time. • Automatic spreading machines can spread tension free layers of fabric and match patterns through the layers. • CAM embroidery machines can create complex logos and designs quickly, saving production time. • Lay plans are sent straight to computer controlled cutting machines, to cut without the need for templates. • Sampling and small production runs of digital printing can be quickly edited to meet market demand. **Benefit distribution & storage** • Electronic data interchange (EDI) allows documents such as orders and invoices to be exchanged electronically for quick communication. • Electronic point of sale (EPOS) uses barcode technology to record sales, ordering is completed automatically in relation to the retail sales of products. • Planning product control (PPC) systems allow for all aspects of production and delivery to be planned online and accessed by all parties to allow up to date information on distribution and delivery. • Just in time (JIT) systems allow electronic stock control; materials are ordered when needed, are not stored in warehouses, but go directly to the production line. Award any other valid responses.		

08

Table 4 shows a specification for a range of dresses that include a decorative trim.

Table 4

Dress size	**8**	**10**	**12**	**14**	**16**	**18**
Amount of fabric in metres (m)	0.92	1.00	1.08	1.16	1.24	1.32
Length of trim in metres (m)	0.53	0.58	0.63	0.68	0.73	0.78
Retail price in £	19.99	19.99	19.99	19.99	21.99	21.99

08 **1**

The trim is sold in rolls of 34 m.

Calculate the number of size **8** dresses that can be made from one roll of trim.

$\frac{34.0}{0.53} = 64.15$ 1 mark

64 dresses 1 mark

2 marks AO4 1c

08 **2**

The manufacturing cost of dress size **12** is £6.92

Calculate the percentage of profit for each size **12** dress.

Give your answer to **two** decimal places.

$$\text{Percentage profit} = \frac{\text{Amount of profit}}{\text{Manufacturing cost}} \times 100$$

19.99 – 6.92 = 13.07 (Amount of profit)

$\frac{13.07}{6.92} \times 100 = 188.872832\%$ 1 mark

Rounded to **two** decimal places = 188.87% 1 mark

(Note: This is the standard method students are taught at GCSE level to calculate percentage profit.)
A correct final answer should be credited with full marks.

2 marks AO4 1c

08	**3**	The fabric costs the manufacturer £2.81 per metre. Calculate the difference in fabric costs to the nearest penny, for dress sizes **10** and **18**. Size 10 dress 2.81 × 1m = 2.81 Size 18 dress 2.81 × 1.32m = 3.7092 3.7092 – 2.81 = 0.8992 1 mark = 90p or £0.90 1 mark **OR** Size 10 dress 2.81 × 1m = 2.81 Size 18 dress 2.81 × 1.32m = 3.71 3.71 – 2.81 = 0.9 1 mark = 90p or £0.90 1 mark	**2 marks**	AO4 1c

09		Define what is meant by the term 'smart material'. **Indicative content**: A smart material adapts/changes in response to its environment**/**surroundings. Reference must be made to both adapting/changing and responding in environment/surroundings for credit.	**1 mark**	AO4 1a

10		Give **two** reasons for using Bondaweb® in appliqué work. **Any 2 appropriate points**, **1 mark each**. **Indicative content**: • to fuse two pieces of fabric together • to prevent fabric from moving whilst stitching / to stabilise fabric • to prevent fabric from pulling apart over time • to stop fabric fraying at the edges. Do not accept strengthen fabric.	**2 marks**	AO4 1b

<table>
<tr>
<td>11</td>
<td></td>
<td>
Describe the structure of slub and bouclé yarns and the appearance of fabrics made from them.
<table>
<tr><td>3–4 marks</td><td>Detailed understanding of the structure of slub and bouclé yarns, with accurate understanding of the appearance of fabrics made from them. There may be some lack of detail about the structure or fabric appearance at the bottom end of the mark band. However, at the top of the mark band, correct references should be made to both structure and fabric appearance of both yarns.</td></tr>
<tr><td>1–2 marks</td><td>Good understanding of the structure of slub and bouclé yarns, with some reference to the appearance of fabrics made from them. There may be limited references or confusion to either the yarn structure or the appearance of fabrics. At the bottom end of the mark band responses will lack accuracy and understanding, at the top end of the band there may only be correct description of one of the yarns.</td></tr>
<tr><td>0 marks</td><td>No response worthy of credit.</td></tr>
</table>
Indicative content:

Slub

• Thick and thin sections appear at irregular intervals along the yarn, which is made by altering the tension/spinning.
• The effect is held together with a binder yarn.
• This gives fabric a bumpy or irregular textured appearance.
• Fabric made from slub yarns give a similar appearance to some linen or wild silk fabric.

Bouclé

• Has loops/looped projections along the yarn.
• The effect yarn creates the loops, while the binder yarn holds the effect in place.
• The fabric has a curly or looped surface texture.
• Fabric made with boucle yarns have an irregular wavy or crimped appearance.

Award any other valid responses.

Answers may include diagrams, award credit for appropriate points.
</td>
<td>4 marks</td>
<td>AO4 1a</td>
</tr>
</table>

12 | **9 marks** | AO4 1b

Explain the importance of production, planning and control (PPC) systems in the planning and manufacture of fashion products.

7–9 marks	Detailed knowledge and understanding of the importance of PPC systems in the planning and manufacture of fashion products. Information will be mostly accurate, and well explained, especially at the top end of the mark band. The response will give a broad range of points relevant to PPC, and should focus on the three areas highlighted in the indicative content; although these may not be discussed in equal balance.
4–6 marks	Good knowledge and understanding of the importance of PPC systems in the planning and manufacture of fashion products. Information will be fairly accurate, and reasonably explained, especially at the top end of the mark band. The response will give a range of points relevant to PPC, and may only focus on two of the three areas highlighted in the indicative content; or may present more general issues.
1–3 marks	Basic knowledge and understanding of the importance of PPC systems in the planning and manufacture of fashion products. Information will be expressed in more general terms, with limited explanations. The response will give some points, but these may not always be relevant to PPC, and may only focus on one area of those highlighted in the indicative content.
0 marks	No response worthy of credit.

Indicative content:

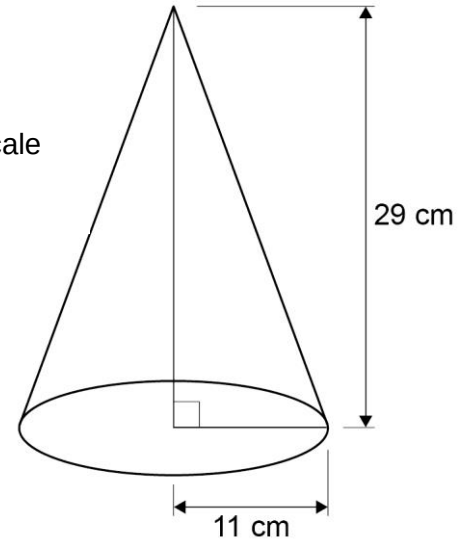
Product Planning and Control (PPC) are computerised systems concerned with planning and controlling all aspects of manufacturing fashion products. It provides an electronic overview of materials sourcing, scheduling of machines and people, and co-ordinating suppliers and customers. A PPC system allows flexibility for changes in consumer demands and the supply chain, as they may arise.

Note, the question focuses on PPC systems, not quality control.

Availability of materials

- Materials such as components and fabrics may be available as standard stock, while others may need to be made to order, a PPC system can be used to co-ordinate delivery dates for all materials for production to start.
- JIT systems allow for materials and components to be delivered as they are needed, PPC keeps track of deliveries PPC, so

		materials can seamlessly go on the production line without the need for storage. • PPC can automatically re-order materials when stock levels become low. **Scheduling of machines and people** • Manufacturing processes such as buttonholing and seam stitching, will be timed; PPC is able to create a production plan, outlining timings and sequences for garment making. • PPC schedules skilled operators and specialist machinery as required. • Product manufacture involves careful planning so that enough people are available when needed. PPC can increase or decrease the number of operators needed depending on demand. • Operators are organised to prevent hold-ups occurring in the production line, enabling continuous production. **Coordinating suppliers and customers** • PPC allows the facility to track progress through the supply chain, and allocate orders to the appropriate factory or supplier when new materials are needed. • All parties involved can see the progress of orders throughout manufacturing through to delivery. The progress of a particular order can be tracked with GPS for timing and delivery information. • PPC keeps track of deliveries to retailers to meet consumer demand. Award any other valid responses.		

13		A designer creates a prototype of a novelty doorstop in the shape of a cone as shown in **Figure 2**. **Figure 2** Not drawn to scale  Calculate the volume of the cone, using the formula $v = \frac{1}{3}\pi r^2 h$ Give your answer to the nearest whole number. Show your working. $volume = \frac{1}{3}\pi r^2 h$ volume = ⅓ × π × 121 × 29 — 1 mark volume = [3672.753…, 3675.09] — 1 mark volume = 3675 cm^3 (the student's answer rounded to the nearest whole number) — 1 mark Award any other valid responses.	**3 marks**	AO4 1c

<table>
<tr>
<td>14</td>
<td></td>
<td>
Explain the difference between interfacing, underlining and interlining.

Give reasons for their use.

<table>
<tr><td>5–6 marks</td><td>Detailed understanding of the difference between interfacing, underlining and interlining, and their use. Explanations are accurate in their content, and differences between the three fabrics are clearly presented. A fairly even balance of the fabrics will be given in the response.</td></tr>
<tr><td>3–4 marks</td><td>Good understanding of the difference between interfacing, underlining and interlining, and their use. Explanations are fairly sound, and differences between the fabrics are reasonably presented. Reference is made to maybe two of the three fabrics or general points are given that lack detail.</td></tr>
<tr><td>1–2 marks</td><td>Basic understanding of the difference between interfacing, underlining and interlining, and their use. Explanations offer some generalised information, but may only focus on maybe one of the three fabrics. Differences between the fabrics are unclear, and lack accurate information.</td></tr>
<tr><td>0 marks</td><td>No response worthy of credit.</td></tr>
</table>

Indicative content:

Interfacing is a separate fabric attached to the outer fabric, either by stitching or ironing on. It is often used in small areas of a product, and can be woven, non-woven or knitted; It is designed to strengthen, support or stabilise a fabric.

Underlining is a separate layer of fabric, cut the same size, and used alongside, the outer fabric. It can be used to make transparent fabrics more opaque; to support open structured fabrics; to stabilise seams. Underlining can also provide a colour contrast to open structured fabrics.

Interlining is a layer of fabric placed in between the outer and lining fabric, designed to create a thermally insulating product. Polyester wadding, wool/polyester fleece or brushed cotton fabrics can be used, which is usually sewn in, as one with the product.

Award any other valid responses.
</td>
<td>6 marks</td>
<td>AO4 1b</td>
</tr>
</table>

15 | Explain how products are inclusive in their design to meet the needs of a wide range of consumers. | **9 marks** | AO4 1b

7–9 marks	Detailed explanation of how products are inclusive in their design to meet the needs of a wide range of consumers. Responses demonstrate an insightful understanding of the concept of inclusive design, and can show how a wide range of products meet the needs of different consumers, especially at the top end of the mark range. Points discussed are relevant, with accurate references to inclusivity.
4–6 marks	Good explanation of how products are inclusive in their design to meet the needs of a wide range of consumers. Responses demonstrate a sound understanding of the concept of inclusive design, and can show how some products meet the needs of different consumers. At the lower end of the mark range, points discussed may lack relevant detail, with some inaccuracies to the way inclusivity is considered in product development.
1–3 marks	Basic explanation of how products are inclusive in their design to meet the needs of a wide range of consumers. Responses demonstrate a limited understanding of the concept of inclusive design, with some references to a narrow range of products. Points discussed will lack relevant detail, with inaccuracies and confusion about the way inclusivity is considered in product development, especially at the lower end of the mark range.
0 marks	No response worthy of credit.

Indicative content:

Inclusive Design helps us create products so that they can be worn and used by as wide a range of consumers as possible, regardless of age, shape, gender or disability.

Adaptive clothing is designed to offer stylish solutions that improve quality of life and appeal to individuals facing mobility, sensory or those experiencing mobility issues due to aging. Products are developed to have easy to use fastenings, stretchy fabric for ease of fit, or braille stitching for visually impaired consumers.

Patients undergoing medical treatments may need products that allow easy access to feeding tubes or personal dressing. Some individuals need products that provide comfort, such as seamless clothing or garments made of extra-soft materials.

Products for children's wear can include self-dressing components, such as hook and loop fastenings or easy to use poppers, and front

		opening garments for ease. Designs also accommodate dressing by parents and carers; accessible elements such as elasticated waists, poppers on swimsuits, and wrap around babywear. Conventional colours for children's wear have stereotypically been feminine pinks for girls and blues for boys. Many retailers are designing collections that are neutral in colour to appeal to both boys and girls, sharing the same prints and designs for both genders. Gender neutral clothing is designed to appeal to a wide range of consumers, including transgender people and other groups. Garments are designed to be more inclusive through fit and style with androgynous shaping and cuts. Colour and material choice are used to promote unisex fashion ranges. Mainstream fashion is mostly aimed at consumers of an average shape and size. Those outside the average proportions are progressively being offered improved clothing ranges, such as plus and tall sizes. Promotion of products also involve more realistically shaped models to represent a wider audience. Award any other valid responses.		

16		Give **three** reasons why trade fairs are important to fashion designers. **Any 3 appropriate points**, **1 mark each**. **Indicative content**: Trade fairs enable fashion designers to: • research the latest trends/innovations in materials and technological developments eg fibres and fabrics • find inspiration and explore the latest trends for new collections eg colour and patterns • source new suppliers of materials • network with other professionals and business contacts. • place orders for materials with suppliers. **No credit given for naming specific trade fairs**.	**3 marks**	AO4 1b

17		Explain the role of the British Standards Institute (BSI) in ensuring fashion and textile products are safe for consumers.	**6 marks**	AO4 1b

5–6 marks	Detailed knowledge and understanding of the role of the BSI in ensuring fashion and textile products are safe for consumers. A range of products may be discussed in the answer, with clear explanations of the relationship to safety issues. Information is accurate, especially at the top end of the mark range; the response will show very good awareness of the role of the BSI.
3–4 marks	Good knowledge and understanding of the role of the BSI in ensuring fashion and textile products are safe for consumers. Some products may be discussed in the answer, with limited explanations of the relationship to safety issues. Information is mostly accurate, especially at the top end of the mark range; and will show a reasonable awareness of the role of the BSI.
1–2 marks	Basic knowledge and understanding of the role of the BSI in ensuring fashion and textile products are safe for consumers. A few products may be discussed in the answer, with limited or no explanations of the relationship to safety issues. Information will lack accuracy, especially at the bottom end of the mark range; some awareness of the role of the BSI may be evident.
0 marks	No response worthy of credit.

Indicative content:

BSI, the British Standards Institute, is a national body that recommends technical requirements, or performance codes, for a wide range of products, including fashion and textiles. The BSI do not make or enforce laws; if manufacturers choose to meet their codes they can apply for BSI certification, often indicated by the kite mark.

In relation to fashion and textiles products, the BSI can ensure products are safe for consumers by providing guidance through:

- Care labelling. The care label informs the consumer of fibre content, in case of allergies.
- Nightwear must carry a label which reads 'KEEP AWAY FROM FIRE' or 'LOW FLAMMABILITY TO BS 5722' to protect the consumer from naked flames. This relates to adults and children's nightwear under the age of thirteen, which must meet flammability performance requirements and British Standards.

		• Setting guidance for flammability testing for home furnishings and textiles in public spaces. Home furnishings such as sofas, should carry a label indicating that the fabric and filling meets the fire resistance guidelines as set out by the BSI; preventing or controlling ignition of fabric if exposed to a flame. • Testing samples of products and awarding certification to ensure products meet British or European standards. This assures the consumer that an acceptable quality can be expected eg a waterproof coat should reasonably protect the consumer from wet conditions. • The design and manufacture of children's clothing must not include cords on hoods in case of accidental strangulation; and no ribbons or cords attached to clothing in case of a choking hazard. • Zips on boys' trousers under the age of five, must not be used. Award any other valid responses.		

18		Describe how fringing, piping and diamantés can be used in a range of home furnishing products.	**9 marks**	AO4 1c

7–9 marks	Detailed knowledge and understanding of use of fringing, piping and diamantes for home furnishing products. Information presented will be accurate; all three trims will be discussed, though not necessarily in equal amounts. A wide range of products is discussed that is relevant to home furnishing.
4–6 marks	Good knowledge and understanding of use of fringing, piping and diamantes for home furnishing products. Information will be mostly accurate; however, the response may focus on two of the three trims. There are some links to a range of different products relevant to home furnishing.
1–3 marks	Basic knowledge and understanding of use of fringing, piping and diamantes for home furnishing products. Information will be limited; points may be very generalised or focus on one or two of the three trims. A narrow range of products is given, that may not always be relevant to home furnishing.
0 marks	No response worthy of credit.

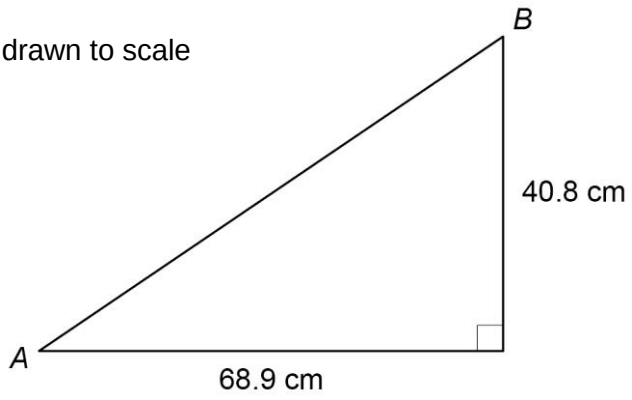
Indicative content:

Fringing is often applied to the edge of fabric to give a decorative effect, and a sense of movement. It is made from lengths of cord or yarn attached to a narrow top band and can be made from a wide range of different fibre types such as silk, cotton and wool.
Traditionally fringing is stitched onto the bottom of chairs, stools and lampshades to create a visual impact. More recently fringing is applied in layers to home textiles such as cushions to create lustre effects. It also adds texture to wall hangings and throws. Home furnishing accessories such as tassels and decorative items can be enhanced with contrasting coloured fringing.

Piping is made by covering a cord with fabric, and stitching in between a seam. The inner cord can come in a variety of thicknesses, and the outer fabric can blend in or contrast with the product to create interesting visual effects.
In home furnishings, piping is often used on upholstery to add strength to the edges; piping added to the arm of a sofa, for example, will create a more hardwearing product. Cushions are often piped to define their shape. Home textiles can be accentuated with the use of piping; contrasting colours or printed fabric can provide decorative effects.

Diamantes are artificial diamonds, made of plastic or glass, such as Swarovski crystals and rhinestones. They can be individually glued

		onto products, or can be applied by a pre-made strip or design on transparent net type fabric. Home furnishings can be enhanced by the sparkle created by diamantes. Cushions and home accessories such as table linen and napkins, can be decorated to provide lustrous effects. Diamantes can highlight the edge of products, such as throws or curtains. Designs on bedlinen, for example, can be highlighted by applying individual gems in a pattern, or appliqued motifs; however, diamantes may come off during use or through washing. Award any other valid responses.		

19		A designer needs to work out fabric and component requirements for the shape of the tent panel in **Figure 3**. **Figure 3** Not drawn to scale  		

19	**1**	Calculate the area of the panel. Show your working. ½ × 68.9 × 40.8 — 1 mark = 1405.56(cm^2) or 1405.6(cm^2) or 1406(cm^2) — 1 mark	**2 marks**	AO4 1c

19	**2**	Calculate the length of zip required, from point **A** to point **B**. Give your answer to the nearest cm. Show your working. h = hypotenuse / length of zip / A to B $h^2 = 68.9^2 + 40.8^2$ — 1 mark $h^2 = 6411.85$ or $h = \sqrt{6411.85}$ or — 1 mark h = 80.07(cm) h = 80(cm) — 1 mark	**3 marks**	AO4 1c

20		Special occasion wear often has a lustre. Explain how fibres and fabrics contribute to the lustrous qualities of special occasion wear.	**6 marks**	AO4 1c

5–6 marks	Detailed insight of the ways fibres and fabrics contribute to the lustrous qualities of special occasion wear. Information will focus on both fibres and fabric in fairly equal balance, especially at the top end of the mark band. Knowledge of the lustrous qualities are clearly explained in relation to the context, with a range of points demonstrating a sound understanding.
3–4 marks	Good insight of the ways fibres and fabrics contribute to the lustrous qualities of special occasion wear. Information will focus on both fibres and fabric, but may not be in an equal balance, especially at the bottom end of the mark band. There are some links to the context, but points may lack detail and explanation.
1–2 marks	Basic understanding of the ways fibres and fabrics contribute to the lustrous qualities of special occasion wear. Information may focus one area only, or give generic points about silk fibres or satin fabric. There may be little reference to the context, and points will lack detail and explanation.
0 marks	No response worthy of credit.

Indicative content:

Fibres can be naturally lustrous, such as silk and linen. The triangular shape of silk fibres allow light to be reflected from the surface, whereas linen becomes shinier over time and wear, to create a soft lustre. Synthetic filament fibres such as polyamide and polyester have smooth surfaces, enabling light to be reflected. Metallic fibres such as silver and lurex create sparkle and iridescent effects. New generation Lyocells and Bamboo fibres offer naturally shiny qualities to special occasion wear. Students may refer to smooth yarns/embroidery threads.

Fabrics can be constructed to give lustrous qualities. Satin woven fabrics have a smooth face, with floating yarns that give a shiny effect. Velvet fabric can reflect light in different directions, especially velour or crushed velvet. Brocade, a woven fabric that looks like embroidery, is often made with floating and metallised yarns creating a shimmering illusion. Metallised fabrics such as Lame are coated with a glossy finish to give the appearance of lustre. Taffeta fabric creates a two-tone effect for special occasion wear.

Award any other valid responses.

21

Analyse and evaluate the use of natural and synthetic fibres in textiles. Consider how the sourcing, care and disposal of products affects sustainability.

12 marks

AO3 2a
AO3 2b

9–12 marks	Detailed analysis and evaluation of the sustainability of natural and synthetic fibres in textiles. A wide range of points are presented, which are mostly accurate and relevant to the wider issues in the context. The response will focus on all three areas, sourcing of materials, care and disposal of products; although there may be less detail in one area.
5–8 marks	Good analysis and evaluation of the sustainability of natural and synthetic fibres in textiles. A range of points are presented, which are reasonably accurate and generally relevant to the wider issues in the context. The response will focus well on two or three areas; sourcing of materials, care and disposal of products, although some generalised information may be given.
1–4 marks	Basic analysis and evaluation of the sustainability of natural and synthetic fibres in textiles. A narrow range of points are presented, with some inaccuracies, not always relevant to the wider issues in the context. The response may only focus on one or two of the three areas; sourcing of materials, care and disposal of products, or will be generalised in nature.
0 marks	No response worthy of credit.

Indicative content:

Sourcing

For example, natural fibres such as cotton use fertilisers and pesticides which pollutes land and atmosphere. Growing cotton crops and wood for regenerated fibres can cause deforestation and uses vast amounts of water. Synthetic fibres are made from petrochemicals, which come from non-renewable sources. However, organic fibres are grown without chemicals; coloured cotton can be made without the need for chemical dyes. New generation fibres, eg Tencel, are sourced from sustainably managed forests and chemicals reused in a closed loop cycle. Ingeo, a new replacement for synthetic fibres, is made from plant starches and completely bio-degradable.

Care

All products use water, detergents and energy in their care. Natural fibres are generally absorbent so take more drying time and energy in their care, unlike synthetics. The detergents can pollute water systems and use energy in tumble drying, for example, which is

		damaging for the environment. Wool and silk may require dry cleaning, which uses chemicals to remove stains. However, synthetic fibres tend to crease less and dry quicker than garments made from natural fibres, and will need lower temperatures in washing and drying; they are also thermoplastic and can distort in high temperatures. Many products can now be washed at 30°, while new technology allows for more energy efficient washing machines. **Disposal** In an era of fast fashion, many products are disposed of, when they could still be used. Natural fibres such as wool and cotton, biodegrade at a much faster rate than synthetic fibres, which remain in landfill for several hundred years, giving off polluting gases. The dyes and chemicals used in fibre production means that it takes longer for the product to decompose. However, many textiles can be reused, passed on to charity or upcycled to extend the product life. Many fibres can also be recycled and shredded to create new yarns and fabrics, eg denim and plastic fleece. Wool fibres can be recycled ie shoddy. Consumers could buy less, wear garments for longer periods, or choose classic products that still remain in fashion for many years. Award any other valid responses.		