Please write clearly, in block capitals.


Candidate number


Surname
Forename(s)
Candidate signature $\qquad$

## A-level

DESIGN AND TECHNOLOGY (FASHION \& TEXTILES)
Paper 1 - Technical Principles

## Date of Exam

Morning
Time allowed: 2h30m

## Materials

For this paper you must have:

- normal writing and drawing instruments
- a scientific calculator


## Instructions

- Use black ink or black ball-point pen. Use pencil only for drawing.
- Fill in the boxes at the top of this page.
- Answer all questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book. Cross through any work that you do not want to be marked.


## Information

- The marks for questions are shown in brackets
- The maximum mark for this paper is 120

1 Explain why umbrella fabric is usually made from polyamide fibre.

2 With reference to the Health and safety at work act 1974, explain the health and safety responsibilities of an employer to ensure workers are safe when working with textiles.
[9 marks]
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3 In the fashion industry, a designer will often use digital technology.
Explain the advantages of using digital technology to communicate design ideas.
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4 The cost of fabric from Company A for 250 pairs of denim jeans is $£ 1260$. $17 \%$ of the fabric is waste.

The cost of fabric from Company B for 200 pairs of jeans is $£ 1350$.
One-eighth of the fabric is waste.
Which company is the most cost effective?
Show your working out.
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5 Evaluate the impact the production of fashion products has on the environment.
In your answer you should make recommendations for how this impact could be reduced in future.
[12 marks]

6 One of the most iconic garments of the early 1960s was a tuxedo suit for women. Explain why this garment was considered shocking and attracted media attention at the time.
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7 Discuss cultural factors facing a designer today.
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$\mathbf{8}$. $\quad \mathbf{1}$ The rectangular cushion shown below has a hexagonal patchwork pattern.
The cushion width is 40 cm . Each of the six equilateral triangles is identical. What is the height of the cushion?
Give your answer to 1 decimal place.
Show your working out.
[4 marks]

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| $\mathbf{8}$ | . | $\mathbf{2}$ |
| :--- | :--- | :--- | The cost of the materials for the cushion is $£ 2.75$.

The manufacturer wants to add piping around the outer edges of the cushion. The trim costs 90p per metre.

What will be the percentage increase in the cost of materials if the trim is added?
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| $\mathbf{9}$ | . | $\mathbf{1}$ Explain why polyester fleece is a popular choice for children's sleepwear. |
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| Use of fibres in textiles manufacturing <br> 1990-2010 in tonnes (x 000) |  |  |  |
| :---: | :---: | :---: | :---: |
|  | Cotton | Viscose | Polyester |
| 1990 | 17941 | 1764 | 22679 |
| 2000 | 20671 | 2995 | 30288 |
| 2010 | 23700 | 4811 | 49765 |

Complete the graph using the data given.

## [1 mark]



| 11 | . | $\mathbf{2}$ |
| :--- | :--- | :--- | three fibres between1960 and 2010.

In your answer you should refer to the data on the graph you have completed in question 11.1.

12 Explain why fibres are blended. Give examples to support your answer.
[9 marks]
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| 13 | 1 | A manufacturer cuts 16 circular printed logos out of fabric which is 30 cm by |
| :--- | :--- | :--- | 30 cm



Each logo is spaced 1.5 cm from each other and the edges of the fabric.
What is the area of the waste fabric after the 16 logos are removed?
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| $\mathbf{1 3}$ | . | $\mathbf{2}$ What is the total length cut around the edges of the 16 logos? |
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[1 mark]

| $\mathbf{1 3}$ | . |
| :--- | :--- |
| $\mathbf{3}$ |  | The 16 logos cut will form the ends of 8 pencil cases.

Each pencil case will be 20 cm long
What is the total area of fabric required for the 20 cm long pencil cases?
Give your answer in number of whole metres required from a 1 m wide roll of fabric.

14 Discuss the advantages of using a computer to aid the design and manufacture of knitted fabric
[12 marks]
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15 . $\mathbf{1}$ Describe one mechanical fabric finish and explain why the finish is necessary in relation to the fibre and fabric characteristics for a specific product.
[6 marks]
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| 15 | . | $\mathbf{2}$ |
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| Describe one chemical fabric finish and explain why the finish is necessary in relation |  |  | to the fibre and fabric characteristics for a specific product.

[6 marks]
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## END OF QUESTIONS

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9 February 2017

