

Please write clearly in block capitals.

Centre number

Candidate number

Surname \_\_\_\_\_

Forename(s) \_\_\_\_\_

Candidate signature \_\_\_\_\_

I declare this is my own work.

# A-level

## DESIGN AND TECHNOLOGY: FASHION AND TEXTILES

Paper 1 Technical Principles

Time allowed: 2 hours 30 minutes

### 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.
- If you need extra space for your answer(s), use the lined pages at the end of this book. Write the question number against your answer(s).
- Do all rough work in this book. Cross through any work you do not want to be marked.

### Information

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

For Examiner's Use	
Question	Mark
1–2	
3–4	
5	
6–7	
8–9	
10–12	
13–14	
15–16	
17	
18	
19	
<b>TOTAL</b>	



Answer **all** questions in the spaces provided.

0 1 . 1

State the fibre type and give **two** characteristics of Modal®.

[3 marks]

Fibre type \_\_\_\_\_

Characteristic 1 \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Characteristic 2 \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

0 1 . 2

State the fibre type and give **two** characteristics of Tactel®.

[3 marks]

Fibre type \_\_\_\_\_

Characteristic 1 \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Characteristic 2 \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

6



**0 2 . 1** State what is meant by the term non-woven fabric.

**[1 mark]**

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**0 2 . 2** Describe **two** different methods of making non-woven fabric.

**[6 marks]**

Method 1 \_\_\_\_\_

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Method 2 \_\_\_\_\_

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**7**

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0 3

Describe an industrial test used to measure and compare pilling in fabrics.

**[6 marks]**

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**6**



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Outline the issues when working with sheer fabric, including the application of fastenings.

**[6 marks]**

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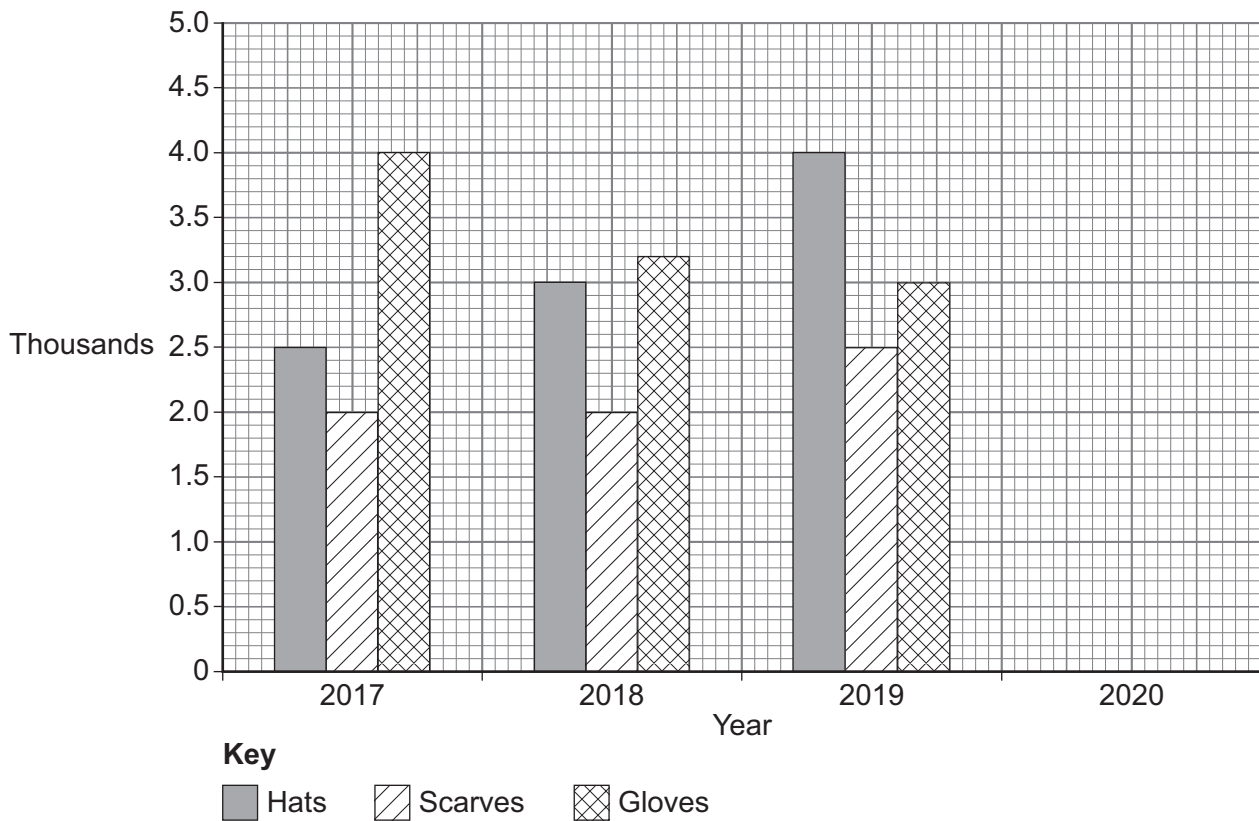
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<hr/> <b>6</b>
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0 5

Figure 1

## Sales of winter accessories, 2017–2020



0 5 . 1

Sales of hats are 12.5% higher in 2020 compared with 2019.

Calculate the number of hats sold in 2020.

[1 mark]

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0 5 . 2

Sales of scarves increased by twice the amount from 2019 to 2020 as they did from 2018 to 2019.

Calculate the number of scarves sold in 2020.

[1 mark]

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**0 5 . 3** Sales of gloves in 2020 is the mean of sales in 2017, 2018 and 2019.

Calculate the number of gloves sold in 2020.

[1 mark]

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**0 5 . 4** Complete the multiple bar chart in **Figure 1** to show all your answers from Question **05.1** to Question **05.3**.

[3 marks]

**0 5 . 5** A customer buys two items from a shop in 2019.

Using the data in **Figure 1**, calculate the probability that they are both scarves.

Give your answer as a percentage to the nearest whole number.

[4 marks]

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Answer \_\_\_\_\_ %

10

Turn over ►







0 7

Describe how different types of finishes are applied and used to create texture on fabric.

Give examples of specific products to support your answer.

**[6 marks]**

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Describe the properties of quilted fabric.

**[4 marks]**

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**Turn over for the next question**

**Turn over ►**



**1 0**

Analyse and evaluate the use of computer aided manufacture (CAM) in the construction of fabric.

**[6 marks]**

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**6**



1 1

Outline the steps taken when carrying out risk assessments in a workshop.

[4 marks]

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1 2

Fashion and textile products have care labels.

Give **three** other types of labelling advice consumers may be given on products.

[3 marks]

1 \_\_\_\_\_

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2 \_\_\_\_\_

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3 \_\_\_\_\_

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Turn over ►



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Describe the care recommendations for washing, drying and maintaining woollen products.

**[9 marks]**

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1 4

Three different dyes are mixed to make one colour.

The ratio of dye A to dye B is 2:3.

The ratio of dye B to dye C is 5:4.

1 4 . 1

What is the ratio A:C? Give your answer in its simplest form.

Show your working.

[3 marks]

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Answer \_\_\_\_\_

1 4 . 2

What fraction of the mixture is A?

[1 mark]

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Describe **two** ways that different fibres can be combined together to make a yarn.

**[4 marks]**

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1 7

Discuss the opportunities and risks for entrepreneurs when setting up a new fashion business.

[6 marks]

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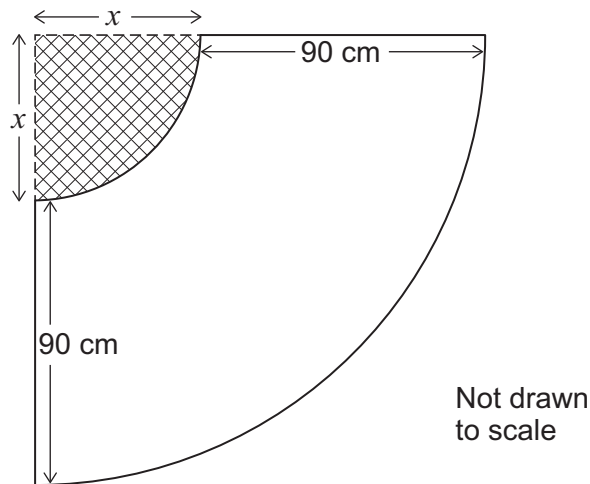
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1 8

Figure 2



**Figure 2** shows a pattern template for a quarter of a circular skirt. The shaded area represents wasted fabric.

The total area of fabric for the skirt before the template is cut out is nine times the shaded area.

1 8 . 1

Show that  $2x^2 - 45x - 2025 = 0$

Show your working.

[4 marks]

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**1 8** . **2** Solve the equation  $2x^2 - 45x - 2025 = 0$  to find the value of  $x$ .

Show your working.

**[2 marks]**

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Answer \_\_\_\_\_ cm

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