Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name,
  centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
  – *there may be more space than you need*.

Information

- The total mark for this paper is 110.
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question*.
- Questions labelled with an **asterisk** (*****) are ones where the quality of your
  written communication will be assessed
  – *you should take particular care on these questions with your spelling, punctuation
    and grammar, as well as the clarity of expression*.

Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ▶

Answer ALL questions.

Some questions must be answered with a cross in a box ☒. If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☒.

1 All of the products listed below belong to a manufacturing sector.

(a) Put a cross in the **two** boxes below where the products belong to the **clothing** sector.

(2)

Products	Put a cross in **two** boxes below
Toothpaste	☒
Whey protein	☒
Sweatshirt	☒
Aluminium ladders	☒
Cycling shorts	☒
Shampoo	☒

(b) Put a cross in the **two** boxes below where the products belong to the **textiles** sector.

(2)

Products	Put a cross in **two** boxes below
Beach bag	☒
Zeus chart	☒
MicroSD card	☒
Wallet	☒
Curry powder	☒
Chuck key	☒

(Total for Question 1 = 4 marks)

2 The tables below show some components and equipment used during the manufacture of textiles and clothing products.

(a) Complete Table 1 by naming each component.

(2)
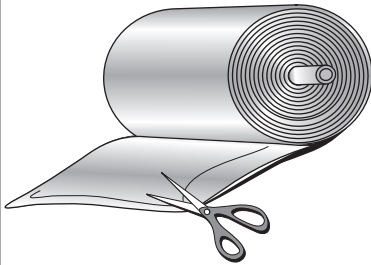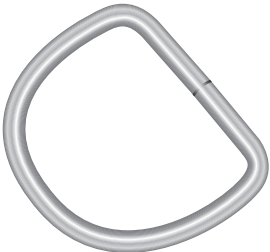
Component	Component name	Use
		A soft and fluffy component which can be layered with other fabrics to add warmth or for quilting.
		Used to distribute strain on textiles products such as on bag straps.

Table 1

(b) Complete Table 2 by explaining what each piece of equipment is used for.

(4)

Equipment	Equipment name	Function
	Pinking shears	
	Seam ripper	

Table 2

(Total for Question 2 = 6 marks)

3 Draw a straight line to link each **Term** listed below to the most appropriate **Key Area**.

Each **Key Area** can be used more than once.

<div style="display:flex; justify-content:space-between;">
<div>

Term

Polypropylene (PP)

Internet

Word processing

Polartec fleece

Remote operated vehicles (ROVs)

Integrated manufacturing systems

Carbon fibre

</div>
<div>

Key Area

Modern materials

Control technology

Information and communications technology (ICT)

</div>
</div>

(Total for Question 3 = 7 marks)

4 Running jackets belong to the textiles and clothing sector and use automation and modern materials in their manufacture.

(a) Name **two** other products from this sector that use automation in their manufacture.

(2)

Product 1

....

Product 2

....

(b) (i) Name **one** type of automation used in the manufacture of products from this sector.

(1)

....

(ii) Explain **two** different reasons why the automation named in 4(b)(i) is used.

(4)

1 ....

....

....

....

2 ....

....

....

....

(c) (i) Name **one** modern material used in the manufacture of a product from this sector.

(1)

....

(ii) Describe how the modern material named in 4(c)(i) changes the characteristics of a product from this sector.

(2)

....

....

....

....

(Total for Question 4 = 10 marks)

5 Computer-aided manufacture (CAM) and computer-aided design (CAD) are both used by manufacturers of textiles and clothing products.

(a) Using CAM can reduce the product price for the consumer.

Describe **one other** benefit to the consumer of using CAM.

(2)

....

....

....

(b) Using CAD speeds up the design process for the manufacturer.

Describe **three other** advantages of using CAD during the design process.

(6)

1 ....

....

....

2 ....

....

....

3 ....

....

....

(Total for Question 5 = 8 marks)

6 Communications technology is widely used by manufacturers of textiles and clothing products.

(a) (i) Describe the communications technology 'Bluetooth'.

(2)

....

....

....

....

(ii) Explain **one** advantage to a manufacturer of using video conferencing.

(2)

....

....

....

....

(b) Electronic Point of Sale (EPOS) is also an example of communications technology.

(i) Name a traditional method it has replaced.

(1)

....

(ii) Explain **two** advantages to a manufacturer of using EPOS.

(4)

1 ....

....

....

....

2 ....

....

....

....

(Total for Question 6 = 9 marks)

7 Systems and control technology, including the use of programmable logic controllers (PLCs), is an essential feature of textiles and clothing companies.

Explain **one** benefit to a manufacturer of using PLCs in relation to:

(a) production efficiency

(3)

....

....

....

....

....

....

(b) safety during manufacture.

(3)

....

....

....

....

....

....

(Total for Question 7 = 6 marks)

TOTAL FOR SECTION A = 50 MARKS

SECTION B

Answer ALL questions in Section B with reference to the manufacture of mass produced running jackets.

The two diagrams below show a running jacket.
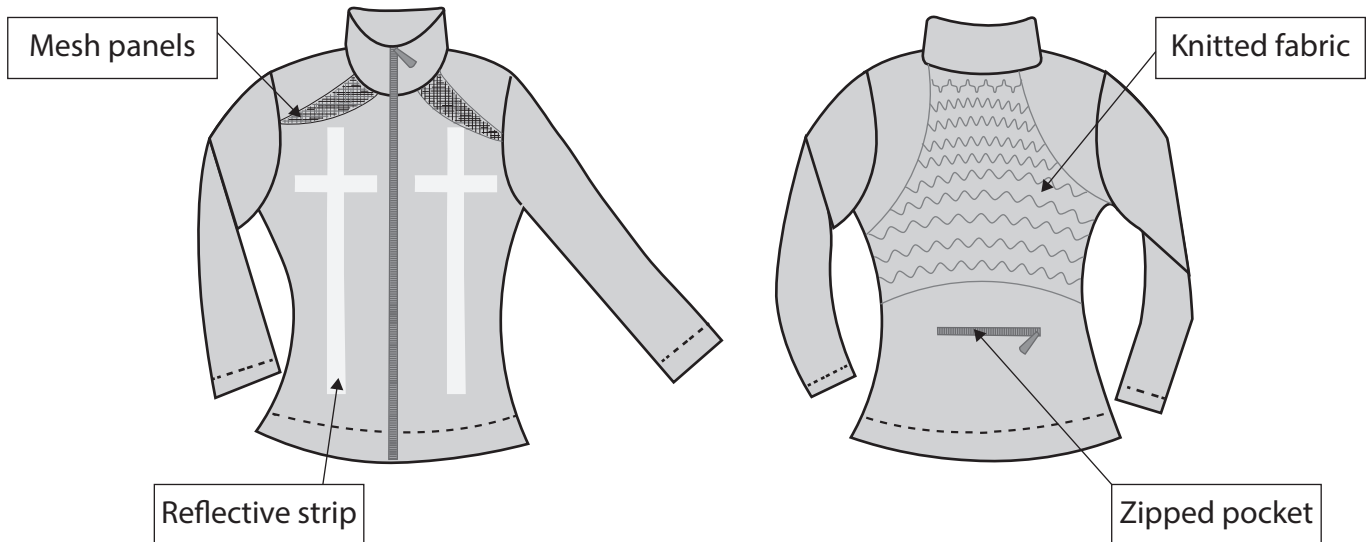
Mesh panels

Knitted fabric

Reflective strip

Zipped pocket

8 Describe, using notes and sketches:

(a) the function of the mesh panels

(3)

mesh panels

(b) the function of the zipped pocket

(3)

zipped pocket

P 5 5 5 5 9 A 0 1 1 2 0

(c) the function of the reflective strip.

(3)

reflective strip

(Total for Question 8 = 9 marks)

9 (a) The incomplete flow diagram below indicates some of the main stages in manufacturing.

(i) Complete the flow diagram by adding the **two** missing stages in manufacturing.

(2)

```
┌─────────────────────────────────┐
│            Design               │
└─────────────────────────────────┘
                │
                ▼
┌─────────────────────────────────┐
│          Marketing              │
└─────────────────────────────────┘
                │
                ▼
┌─────────────────────────────────┐
│                                 │
└─────────────────────────────────┘
                │
                ▼
┌─────────────────────────────────┐
│                                 │
└─────────────────────────────────┘
                │
                ▼
┌─────────────────────────────────┐
│          Production             │
└─────────────────────────────────┘
                │
                ▼
┌─────────────────────────────────┐
│      Assembly and finishing     │
└─────────────────────────────────┘
                │
                ▼
┌─────────────────────────────────┐
│      Packaging and dispatch     │
└─────────────────────────────────┘
```
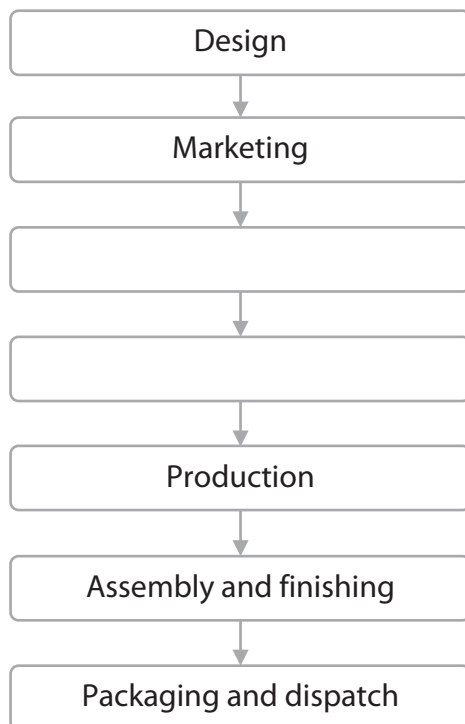
(ii) State the stage in manufacturing where the sleeves of the running jacket would be made.

(1)

Stage ....

(b) List **three** activities carried out at the assembly and finishing stage when manufacturing running jackets.

(3)

1 ....

2 ....

3 ....

(c) Describe the marketing stage when manufacturing running jackets.

(3)

....

....

....

....

....

(Total for Question 9 = 9 marks)

10 (a) State a specific fibre commonly used for the knitted fabric of the running jacket.

(1)

....

(b) Running jackets are manufactured using overlocking.

(i) State **three** production processes, other than overlocking, used during the manufacture of the running jacket.

(3)

Process 1

....

Process 2

....

Process 3

....

(ii) Explain why overlocking is a suitable process to use during the manufacture of running jackets.

(3)

....

....

....

....

....

....

(c) Explain why a knitted fabric is appropriate for the body of the running jacket.

(3)

....

....

....

....

....

....

....

(Total for Question 10 = 10 marks)

11 Quality control is used when manufacturing mass produced running jackets.

(a) Explain the term 'quality control'.

(2)

....

....

....

(b) (i) Describe **three** different examples of quality control procedures used in the production stage when manufacturing running jackets.

(6)

1 ....

....

....

2 ....

....

....

3 ....

....

....

(ii) Explain **one** disadvantage to the manufacturer of using quality control when manufacturing running jackets.

(2)

....

....

....

(iii) Explain **one** benefit to the consumer of using quality control when manufacturing running jackets.

(2)

....

....

....

(Total for Question 11 = 12 marks)

12 (a) The use of modern technology in the manufacture of mass produced running jackets has brought changes.

(i) State **two** positive changes the use of modern technology has had on the working environment.

(2)

1 ....

....

2 ....

....

(ii) Explain **two** effects the use of modern technology has had on the efficiency of the packaging and dispatch stage.

(4)

1 ....

....

....

2 ....

....

....

(b) The use of modern technology when manufacturing running jackets has had an impact on the workforce.

Explain **two** disadvantages the use of modern technology has had on the workforce.

(4)

1 ....

....

....

2 ....

....

....

(Total for Question 12 = 10 marks)

13 The use of 'just in time' (JIT) techniques when manufacturing mass produced running jackets has brought changes.

Explain the effects of these changes for the manufacturer.

....

....

....

....

....

....

....

....

(Total for Question 13 = 4 marks)

*14 Discuss the impact of the use of modern technologies on the sustainable manufacture of running jackets.

....

....

....

....

....

....

....

....

....

....

....

....

....

....

....

....

....

(Total for Question 14 = 6 marks)

TOTAL FOR SECTION B = 60 MARKS
TOTAL FOR PAPER = 110 MARKS

BLANK PAGE

P55559A02020