Instructions
- Use black ink or ball-point pen.
- If pencil is used for diagrams/sketches it must be dark (HB or B). Coloured pens, pencils and highlighter pens must not be used.
- 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 80.
- 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.
- Try to answer every question.
- Check your answers if you have time at the end.
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 How are fibres made into yarn?
   □ A spinning
   □ B rubbing
   □ C matting
   □ D knotting

   (Total for Question 1 = 1 mark)

2 Which one of the following runs parallel to the selvedge?
   □ A warp
   □ B weft
   □ C bias
   □ D seam

   (Total for Question 2 = 1 mark)

3 Most commercial paper patterns have a standard seam allowance measurement of:
   □ A 20mm/2cm
   □ B 10mm/1cm
   □ C 15mm/1.5cm
   □ D 25mm/2.5cm

   (Total for Question 3 = 1 mark)

4 Which one of the following is a fabric with floating weft yarns over more than one warp yarn?
   □ A satin weave
   □ B pile weave
   □ C twill weave
   □ D plain weave

   (Total for Question 4 = 1 mark)
5. Which of the following best describes the **practise** of buying textile products for short-term use?
   - A. repairing textile products
   - B. creating a ‘throwaway’ culture
   - C. reducing textile production
   - D. recovering waste from textiles

   (Total for Question 5 = 1 mark)

6. Which **one** of the following describes the appearance of filament yarns?
   - A. smooth
   - B. rough
   - C. wrinkly
   - D. velvety

   (Total for Question 6 = 1 mark)

7. Which **one** of the following weaving methods is used to make denim?
   - A. plain
   - B. satin
   - C. twill
   - D. pile

   (Total for Question 7 = 1 mark)

8. Which **one** of the following fibres is biodegradable?
   - A. **acrylic**
   - B. lycra®
   - C. linen
   - D. kevlar®

   (Total for Question 8 = 1 mark)
9 Which one of the fabrics below has a complex woven pattern on the right and wrong side?

- A  basket weave
- B  gabardine weave
- C  sateen weave
- D  jacquard weave

(Total for Question 9 = 1 mark)

10 Which one of the following is a chromatic textile that reacts to moisture?

- A  photochromatic
- B  thermochromatic
- C  solvation chromism
- D  electrochromic

(Total for Question 10 = 1 mark)
11 (a) The table below shows some components and equipment.

Complete the table by giving the missing names and uses.

<table>
<thead>
<tr>
<th>Components/Equipment</th>
<th>Name</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ironing board</td>
<td></td>
<td>Used to print a design through a thin plastic sheet/mesh with a cut out design or plastic coating where a pigment can pass through</td>
</tr>
<tr>
<td>Bobbin</td>
<td></td>
<td>Used to adjust speed of a sewing machine</td>
</tr>
</tbody>
</table>

(1)
(b) A theatrical company is designing costumes for a performance. Calico is a cheap fabric that can be used for a prototype.

(i) Explain one reason, other than being cheap, why calico was used for the prototype.

(ii) Muslin was used as an alternative to calico for this prototype. Explain one reason why muslin would be a suitable alternative.

(iii) The theatrical company has decided to make its performance costumes out of viscose.

State two advantages of using viscose for theatrical costumes.

1

2

(iv) Explain one disadvantage of using viscose for theatrical costumes.

(c) (i) State one method used on the seam allowance to create a deep curve.
(ii) Describe why it is necessary to use this method on the seam allowance of a sewn deep curve.

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(2)

(iii) The theatrical company costumes all have collars. Interfacing is to be added to the collars.

State two quality control checks involving interfacing that can be carried out on the collars during manufacture. Justify your reasoning.

Quality control check

Justification

Quality control check

Justification

(Total for Question 11 = 19 marks)
A large retailer of baby products would like you to design and manufacture a play mat suitable for babies who are unable to walk.

**Design specification**

The specification for the product is that it must:

- be suitable for babies lying on their front and back
- be educational
- support the baby’s body
- be easy to care for
- have a visually recognisable theme
- include a decorative technique
- be easy to carry or store
- be safe to use.

In the spaces opposite, use sketches and, where appropriate, brief notes to show two different design ideas for the play mat that meet the specification points above.

Candidates are reminded that if a pencil is used for diagrams/sketches it must be dark (HB or B).

Coloured pens, pencils and highlighter pens **must not** be used.
Design idea 1

(8)

Design idea 2

(8)

(Total for Question 12 = 16 marks)
13 (a) A pair of trousers has been designed for a wheelchair-bound person with a disability. A zip has been used in the waistband to make the trousers easy to put on and take off.

(i) Give one other suitable textile fastening to use in these trousers. Justify your answer.

Fastening

Justification

(ii) Give one unsuitable textile fastening for use in these trousers. Justify your answer.

Fastening

Justification
(b) Using notes and sketches, describe one method of inserting elastic around the waist of the trousers. Consider quality control.

(c) The trousers are lined down to the knees. Describe why this would be beneficial for the person wearing the trousers.
*(d) The pictures below show two pairs of trousers that have been designed for wheelchair users.*

**Product A**
- Cotton knitted fabric
- Sits on waist
- Flat back seams
- Straight cut leg with close fit at knees
- Elasticated
- Long zip, no central belt loop

**Product B**
- Woven acrylic fabric
- Sits on waist
- Flat back seams
- Tight fitting then flares from above the knees (bootcut)
- Short zipper
- Seams overlocked together

**Product A**
- Belted waist, central belt loop at the back
- Rivets on front and back pockets

**Product B**
- Belted waist, central belt loop at the back
- Rivets on front and back pockets
Evaluate Product A against Product B in terms of function and user requirements.

(Total for Question 13 = 16 marks)
14 (a) (i) State two risks associated with the use of dyes. (2)

1

2

(ii) Describe one control measure used to minimise these risks. (2)

(b) Explain why cotton should be washed before garment manufacture. (2)
The image below is of a cotton checked shirt. The buttonholes on the shirt are produced using computer numerically controlled (CNC) machinery.

(c) Give one disadvantage of lay planning on checked fabric compared to plain fabric.  
   (1)

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(d) (i) Explain why a minimal tolerance is necessary when placing buttons and inserting buttonholes.  
   (2)

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   (ii) Describe one benefit of using computer numerically controlled (CNC) machinery when producing buttonholes for a large batch of shirts.  
   (2)

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(iii) Explain one reason why the use of computer-integrated manufacture (CIM)
benefits the shirt company.

(e) Reducing transportation is one method of reducing emissions from textile
manufacturing.

Discuss other ways that textile manufacturers can reduce emissions.