Design & Technology
(Product Design)

DTBase©

OCR A-Level

Textile Fabrics (5.2avii)

Materials required for questions

- Pencil
- Rubber
- Calculator

Instructions

- Use black ink or ball-point pen
- Try answer all questions
- Use the space provided to answer questions
- Calculators can be used if necessary
- For the multiple choice questions, circle your answer

Advice

- Marks for each question are in brackets
- Read each question fully
- Try to answer every question
- Don’t spend too much time on one question

Good luck!

Q1. Which fabric structure is produced by interlooping yarns in rows, creating a high degree of elasticity?

A Woven

B Knitted

C Non-woven

Q2. A disposable medical face mask is typically made from which type of textile fabric?

A Woven

B Knitted

C Non-woven

Q3. Which fabric type is generally the most stable, with little stretch along the grain (warp) and across the weft?

A Knitted

B Woven

C Blended

Q4. The process of needle felting is used to produce which type of textile?

A Knitted fabric

B Non-woven fabric

C Woven fabric

Q5. Give two reasons why blended and mixed fibres are used in clothing. **(2 marks)**

Q6. Explain the difference between the structure of a woven fabric and a knitted fabric. Include in your answer how this difference affects the properties of each fabric type. **(4 marks)**

Q7. Describe how a non-woven fabric, such as felt, is manufactured.
(4 marks)

Answers

Q1. B
Q2. C
Q3. B
Q4. B

Q5.
One mark for each correct reason why blended and mixed fibres are used in clothing.

Indicative content

Typical basic responses:

- to produce different fibres with more desirable/enhanced properties
- improve durability in the fibre
- make fabric easier to care for
- make clothing less likely to shrink or crease. You may see more detailed responses:
- to produce different fibres with more desirable/enhanced properties, eg polyester can mitigate against shrinkage, creasing and slower drying speed
- make a yarn (blend of two or more fibres) to make a better product
- improve durability in the fibre, eg poly-cotton (polyester and cotton mix)
- produce clothing more cheaply, eg poly-cotton is a cheaper material than pure cotton
- use of cotton with a synthetic material makes it more breathable hence comfortable to wear
- fabrics can be heat-set, eg trousers with a crease, anti-crease fabrics
- similar appearance to natural materials, eg cotton, and can accept a print or dye easily.

Accept all other valid responses

Q6.

- Woven Structure: Made by interlacing two sets of yarns (warp and weft) at right angles.
- Knitted Structure: Made by interlooping a single yarn (weft-knit) or multiple yarns (warp-knit) in connected rows.

- Effect on Woven Properties: Creates a stable, strong, and rigid fabric with little stretch. Good for structured garments (e.g., shirts, denim).
- Effect on Knitted Properties: Creates a flexible, elastic, and drapable fabric. Good for comfort and stretch (e.g., t-shirts, jumpers).

Q7.

- Fibre Preparation: Raw fibres (e.g., wool, polyester) are cleaned and often carded into a loose web.
- Web Formation: The fibres are layered to form a uniform sheet or batt.
- Bonding: The fibres are entangled/interlocked. For felt, this is done through mechanical bonding (e.g., needle-punching or agitation with moisture, heat, and pressure).
- Finishing: The bonded fabric may be pressed, heated, or treated to achieve the desired thickness, strength, or surface finish.