DTBase©

Design & Technology
Edexcel GCSE

Fabric Construction

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. In which weave does each weft yarn go over one warp yarn and then under one warp yarn?

A Twill weave

B Plain weave

C Warp knit

Q2. Which fabric has a twill weave?

A Denim

B Calico

C Felted wool

Q3. Which non-woven fabric is made by matting fibres together using heat, moisture and pressure?

A Calico

B Warp-knitted fabric

C Felted wool fabric

Q4. Which fabric can ladder if a loop is snagged?

A Weft-knitted fabric

B Bonded web

C Plain woven fabric

Q5. Which fabric is a web of fibres held together with adhesive or heat?

A Denim

B Bonded web

C Weft-knitted fabric

Q6. Which fabric construction usually has the most elasticity?

A Plain woven

B Bonded

C Knitted

Q7. Complete the following sentences by inserting the correct words from the list provided. **(3 marks)**

Knitted Woven Looped Weft Warp

..... fabrics are constructed using interlocking yarns.

The yarns that run horizontally are called ..... yarns.

The yarns that run vertically down the length of the fabric are called ..... yarns.

Q8a. Describe what is meant by a woven fabric. **(1 mark)**

Q8b. Explain one benefit of using a woven fabric for sports wear. **(2 marks)**

Q9. A prototype play cube was made from calico.

Explain one reason for using calico for the prototype play cube. **(2 marks)**

Q10. A denim shirt is made from a cotton twill fabric.

Explain one physical characteristic of a twill woven fabric that makes it an ideal material for the denim shirt. **(2 marks)**

Q11. A kitchen apron is made from a woven twill cotton fabric.

Explain one working property of a woven twill fabric that makes it suitable for the kitchen apron. **(3 marks)**

Q12. A pair of walking trousers is made from plain woven polyester fabric.

Explain one physical characteristic of a plain weave that makes it an ideal fabric to use for the walking trousers. **(2 marks)**

Q13a. A hat is made from felted wool fabric. Give one property of felted wool fabric that makes it suitable for the hat. **(1 mark)**

Q13b. A game has a plywood base with felted wool fabric glued to its underside. Explain one property of felted wool fabric that makes it an appropriate choice of material for gluing to the underside of the plywood base. **(2 marks)**

Q14. A puffer jacket contains an internal layer of non-woven fibres.

Describe how this layer benefits the user of the puffer jacket. **(2 marks)**

Q15. T-shirts are made from knitted fabric.

Give two reasons why a knitted construction is chosen for this type of child's clothing. **(2 marks)**

1

2

Q16. A bag is made from a PVC coated nylon fabric.

Describe one reason why a knitted fabric would be an unsuitable choice for the bag. **(2 marks)**

Answers

Q1. B
Q2. A
Q3. C
Q4. A
Q5. B
Q6. C

Q7.

1 mark for each correct word, in this order: Woven; Weft; Warp. Do not credit any other response.

Q8a.

Horizontal and vertical yarns/warp and weft yarns in an under and over format (1). Do not accept "interlocking", "interwoven", "overlapped" or "intertwining".

Q8b.

Up to 2 marks for one benefit explained:

- It is tougher/stronger/longer lasting than a non-woven material (1) when stretched/worn (1)
- It improves comfort (1), so it can be worn for longer (1)
- It is flexible (1), so it is more comfortable to wear (1)

Q9.

Any one accurate statement about calico (1 mark) and a linked justification (1 mark):

- Calico is a relatively cheap material (1), therefore it keeps the cost of prototyping/developing the product down (1)
- Calico can accept a range of surface finishes (1), therefore colours and designs can also be prototyped/tested (1)
- Calico is absorbent (1), therefore it can accept a range of surface finishes (1)
- Calico is rigid/stiff when sewn along a seam (1), which means it can hold its shape/allows a 3D shape to be formed (1)

Q10.

Any one physical characteristic (1 mark) and a linked justification (1 mark):

- Twill woven fabric is less likely to show marks (1) than plain woven fabric (1)
- Twill woven fabric is resistant to abrasion (1), which means it wears well (1)
- Twill woven fabric has good resistance to creasing (1), so it stays looking smart in wear (1)
- Twill woven fabric has a good drape (1), which means the shirt will hang well on the body (1)
- Twill woven fabric has many interlaced points (1), which means it is less likely to rip/tear (1)

Q11.

Any one working property (1 mark) and linked justifications (1 mark + 1 mark):

- It is a close weave/durable/dense material (1), therefore it will take more wear and tear (1), which means it offers more protection from heat/fluids (1)
- It is a flexible material (1), which means it is not too cumbersome (1), allowing the wearer freedom of movement (1)
- It drapes well (1), therefore it stays looking presentable (1) and will not crease badly (1)

Q12.

Any one physical characteristic (1 mark) and a linked justification (1 mark). Do not credit responses related to "breathable":

- Plain woven fabric is firm (1), therefore it keeps its shape during washing (1)
- Plain woven fabric has the maximum number of interlaced points (1), therefore it is suitable for heavy use outside (1)
- Plain woven fabric is tightly/closely woven (1), which can help to provide some wind/weather resistance to protect the wearer (1)

Q13a.

Any one property (1 mark): elasticity/mouldability; soft; insulator/heat insulator; permeable/breathable.

Q13b.

Any one property (1 mark) and a linked justification (1 mark):

- It does not fray (1), which means it will leave a neat finish/edge around the base (1)
- It is soft/smooth/cushioned (1), which means it will not damage any surface the game is placed on (1)

Q14.

1 mark for an appropriate benefit and 1 mark for a clear description, for example: non-woven fibres act as an insulation layer (1); they trap air, which warms the body of the user (1).

Q15.

1 mark per reason, two required:

- Knitted fabric stretches, which prevents creasing of the fabric (1)
- Knitted fabric stretches to fit a range of body shapes/sizes (1)
- Knitted fabric is more insulating than woven fabric (1)
- Knitted fabric has a comfortable, next-to-skin quality (1)
- Knitted fabric can be made on a circular knitting machine, which is a cheaper method of manufacture (1)

Q16.

1 mark for a suitable reason and 1 mark for describing it:

- Knitted fabric stretches (1), which would mean the shape of the bag would deform when storing items (1)
- Knitted fabrics are more difficult to laminate/coat (1) due to their open structure, giving an uneven finish (1)