Mark scheme
June 2003

GCE

Design and Technology
Product Design

Unit PD1T

Textiles (PD1T)

Quality of Written Communication

The following marks are allocated to the quality of the candidate's written communication. Make a separate assessment of the candidate's overall ability as demonstrated across the paper using the criteria given below.

Performance Criteria	Marks
The candidate will express complex ideas extremely clearly and fluently. Sentences and paragraphs will follow on from one another smoothly and logically. Arguments will be consistently relevant and well structured. There will be few, if any, errors of grammar, punctuation and spelling.	4
The candidate will express moderately complex ideas clearly and reasonably Fluently, through well-lined sentences and paragraphs. Arguments will be Generally relevant and well structured. There may be occasional errors of Grammar, punctuation and spelling.	3
The candidate will express straightforward ideas clearly, if not always fluently. Sentences and paragraphs may not always be well connected. Arguments may sometimes stray from the point or be weakly presented. There may be some errors of grammar, punctuation and spelling, but not such as to suggest a weakness in these areas.	2
The candidate will express simple ideas clearly, but may be imprecise and awkward in dealing with complex or subtle concepts. Arguments may be of doubtful relevance or obscurely presented. Errors in grammar, punctuation and spelling may be noticeable and intrusive, suggesting weaknesses in these areas.	1

NB   This mark scheme is intended as a guide to the type of answer expected but is not intended to be exhaustive or prescriptive.   If candidates offer other answers which are equally valid **they must be given full credit.**

Many responses at this level are assessed according to the **quality** of the work rather than the number of points included.   The following level descriptors are intended to be a guide when assessing the quality of a candidate's response.

The candidate has a basic but possibly confused grasp of the issues.
Few correct examples are given to illustrate points made.   Description may be unclear.
                                    (low mark range)

The candidate has some knowledge but there will be less clarity of understanding.
Some correct examples given to illustrate points made.   Description better but unclear or confused in parts.
                                    (mid mark range)

The candidate has a thorough understanding of the issues and has provided relevant examples to support the knowledge shown.   This candidate's answer shows clear evidence of understanding.
                                    (high mark range)

AQA

Question 1

(a)   Fabric e.g. use of bleaching to remove colour and give effect of stripes, fraying to add interest and soften effect of fabric, gives 'worn – in' look which is current fashion. Style is very feminine despite being made from rugged fabric. Black instead of more usual blue creates a stark contrast with bleached sections.

Components e.g. use of metal zips contrast with femininity of design, hooks and eyes on lower ends of sleeves give a more flared style, white thread for top stitching contrasts with black denim but fits in with bleaching.

Marks awarded as follows:

- Little understanding, simplistic statements only, candidate typically concentrates on one aspect of the design without considering other factors. Simplistic statements which point out components used without considering effect created. Will describe jacket instead of analysing design   (1 – 4 marks)

- Candidate shows understanding of the contribution made by more than one aspect but it is unable to consider the impact of the design as a whole. Candidate identifies components and analyses contribution to the overall effect of the design.   (5 – 8 marks)

- Candidate shows sophisticated understanding of the contribution made by several aspects of the design and is able to give a clear explanation of the part played by fabric and components.   (9 - 12 marks)   (12 marks)

(b)   Cotton fibre, white weft, coloured (usually blue) warp, twill weave, RS usually blue, WS has white haze, medium/heavy weight. Strong, resistant to abrasion, absorbent, aesthetic/fashion appeal, versatile, easy to wash, does not soil easily.

Marks awarded as follows:

- Little knowledge shown of qualities of denim, information will be superficial and based on cotton fibre and strength.   (1 – 4 marks)

- Candidates shows some understanding of the qualities of fabric and will give detailed fibre knowledge not always related to fabric   (5 – 8 marks)

- Sound detailed knowledge shown, candidate will give information and relate it to fibre content as well as fabric   (9 – 12 marks)   (12 marks)

(c)   (i)   e.g. Interfacing will be needed to support collar. It might possibly be needed for centre front and shoulder area and cuffs although this might not be needed as fabric is stiff enough to support zip and sleeves.

Lining would make the jacket easier to put on and take off, cover construction details, give a high quality finish befitting this designer jacket and possibly make it warmer to wear. It is, however, not necessary to line this jacket unless interfacing were to be used in the shoulder area.

Marks awarded as follows:

- Little knowledge shown of need to use interfacing and/or linings. Information will be superficial with little consideration given to this particular jacket.   (1 – 2 marks)

- Candidate shows some understanding of the need for interfacing and linings and will give some information about both. This will not always be related to this particular jacket.   (3 – 5 marks)

- Sound detailed knowledge shown, candidate will give information about the need to interface and line and relate it to the jacket shown. There will be some debate whether both are actually needed.   (6 - 8 marks)   (8 marks)

(ii)   e.g. iron-on or sew in non-woven, medium weight black interfacing, will give support to collar without being too heavy for denim fabric or showing through to outside.

Polyester or viscose satin, plain or twill woven lining, possibly in a contrasting colour would help with wearing of jacket without adding bulk and would add to aesthetic appeal.

Marks awarded as follows:

Details of interfacing and lining	2 marks each	Maximum 8
Reasons for choice	2 marks each	marks

Total 40 marks

Question 2

(a)   (i)   E.g. **Staple yarn:** consists of short lengths (1 mark) of fibre (1 mark) twisted together (1 mark).   (3 marks)

(ii)   **Filament yarn:** long lengths (1 mark) of fibre (1 mark) twisted together (1 mark).   (3 marks)

(iii)   2 examples of staple yarn, e.g. cotton, wool, linen, 1 mark each
2 examples of filament yarn, e.g. nylon, polyester, 1 mark each   (4 marks)

(b)   E.g. filament yarns produce smooth, possibly lustrous, fabrics which feel compact. If highly twisted they can be used for crepe fabrics. Fabrics produced from filament yarns tend not to be such good insulators unless the yarns have been textured.

Staple yarns produce hairier fabrics with little lustre and fuller handle.

Marks awarded as follows:

Little relevant knowledge shown, candidate typically concentrates on one aspect of the fabric without considering other factors.   (1 – 2 marks)

•   Candidate shows some understanding of a number of qualities but some confusion may be evident.   (3 – 4 marks)

Candidate shows sophisticated knowledge and understanding of yarns and their impact on fabrics.   (5 – 6 marks)   (6 marks)

(c)   (i)   E.g. warp yarns are fixed in loom (1m), run parallel to selvedge (1m) are stronger than weft yarns (1m), weft yarns interlace with warp (1m), are at right angles to selvedge (1m), are weaker than warp (1m). Any 4 points, 1 mark each.

(4 marks)

(ii)   2 descriptions of different weaves, e.g. plain, twill, satin to show warp and weft yarns and pattern of interlacing. A diagram may be used. 2 **weaves**.   4 marks each   (8 marks)

Total 28 marks

Question 3

(a)   (i)   The amount of moisture absorbed by a fibre at a relative humidity of 65% and temperature of 20 C.   (4 marks)

       (ii)   e.g. **wool** is very absorbent wit a high SMR. It can absorb a lot of moisture without feeling wet.
Cotton is also very absorbent but not as good as wool; it soon begins to feel damp. It has a medium SMR.
Polyester is almost totally non-absorbent with a very low SMR.

Marks awarded as follows:

- Simple statement which show only simplistic understanding and some confusion.   (1 – 3 marks)

- More detailed statements showing clear knowledge and understanding.   (4 – 6 marks)   (6 marks)

(b)   (i)   Fabrics with high SMR are more absorbent and more comfortable next to the skin, they can become damp with excessive moisture. Fabrics with low SMR make the wearer feel clammy as they do not absorb perspiration. 'Wickability' of fibres is important in keeping the wearer dry; some fibres, e.g. cotton, have inherent wickability whereas synthetic fibres do not although they can be given this property by modifying the fibre cross section.
Static electricity quickly builds up in fibres with low SMR and this can cause garments to stick together.
Modern fibres and fabrics can be modified or combined to make fabrics more comfortable in wear.

Marks awarded as follows:

- Basic information with evidence of only simplistic understanding of fibre properties; there will be evidence of confusion.   (1 – 3 marks)

- Some understanding of the how a fibre's ability to absorb moisture can affect comfort of the wearer but there will be little consideration given to up-to-date thinking or reference to modern fibres and fabrics.   (4 – 6 marks)

AQA

- Sophisticated knowledge and
  understanding of the nature of comfort and
  how the ability of fibres to absorb or wick
  moisture can contribute to comfort in wear.
  Candidate has knowledge of modern
  fibre/fabric developments.   (7 – 9 marks)   (9 marks)

(ii)   Fibres with high SMR absorb water-borne stains and take a long time
       to dry, especially wool. Fibres with low SMR dry quickly. High
       rates of absorbency will affect shrinkage of fibres, especially cotton
       and viscose. Fabric conditioners may be used to reduce static in
       fabrics.

Marks awarded as follows:

- Basic information with evidence of only   (1 – 3 marks)
  simplistic   understanding   of   fibre
  properties; there will be evidence of
  confusion.

- Some understanding of the how fibre's   (4 – 6 marks)
  ability to absorb moisture can affect care
  of fabric with some examples to illustrate
  points made.

- Sophisticated knowledge and
  understanding of how ability to absorb
  moisture affects care. There will be
  several examples to illustrate points made.   (7 – 9 marks)   (9 marks)

Total 28 marks

Question 4

(a) (i)   Segmented polyurethane, candidate may sketch an elastomeric fibre.   (2 marks)

     (ii)   e.g. excellent ability to stretch and recover, crease resistant, blends
            well with other fibres, strong, lightweight, dries quickly, unaffected
            by sun, salt water, sun tan oils and perspiration.
            1 mark per acceptable quality to a max of 4 marks
            1 mark for expansion of point to a max of 4 marks
            maximum **8 points**, 1 mark each   (8 marks)

(b) (i)   Elastomerics are extremely stretchy and would be impossible to wear
            on its own, it is also expensive. Combining it with other fibres
            ensures a usable fabric. It is stabilised to enable it to be made into a
            fabric

            Marks awarded as follows:

            •   Little knowledge shown of need to
                combine it with other fibres, will typically
                refer to stretch qualities of fibre.   (1 – 2 marks)

            •   Candidate shows some understanding of
                the need to combine it with other fibres
                and will relate to more than one point.   (3 – 4 marks)   (4 marks)

     (ii)   e.g. nylon cotton, wool   2 fibres, 1 mark
            each   (2 marks)
            1 mark each for realistic use   (2 marks)
            Appropriate reasons for each use, 3 marks each   (6 marks)   (10 marks)

(c) Wash according to main fibre in blend, do not use water which is too hot,
     no bleach, cool iron.
     4 points, 1 mark each **or** fewer points with reasons   (4 marks)
                                                                      Total 28 marks

                                Question Total   **96 marks**

                                Quality of Written Communication   **4 marks**

                                Paper Total   **100 marks**