AQA

ASSESSMENT and
QUALIFICATIONS
ALLIANCE

Mark scheme
January 2003

GCE

Design and Technology: Product Design (Textiles)

Unit PD1T

Unit 1: Materials and Components (Textiles)

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)

Question 1

(a)   E.g. fabrics have been layered, probably with polyester wadding, and quilted. This adds to thermal insulation qualities, stitching holds wadding in place to prevent it slipping. Polyester wadding contains many air pockets which prevent heat escape, it is lightweight and washable. Aesthetic qualities, wadding adds 'body', satin fabric drapes well.

Marks awarded as follows:
- Little knowledge or understanding of the need to layer fabrics, will concentrate on superficial qualities of bedspread. Little understanding.
  (1 – 2 marks)
- Candidate shows some understanding of the layering of fabrics and the role of the insulating layer but may possibly be more concerned with aesthetic qualities of fabric.
  (3 – 5 marks)
- Sound detailed knowledge shown, candidate understand how the layering system works.
  (6 – 8 marks)   (8 marks)

(b)   (i)   E.g. use of smooth, lustrous fabrics with a range of components, piping, beads, embroidery threads, sequins/shisha mirrors, which continue the theme of luxury.

Marks awarded as follows:
- Little understanding, simplistic statements only, candidate will describe illustration rather than products.
  (1 – 2 marks)
- Candidate shows understanding of the contribution made by fabric and components but will concentrate on one or two at the expense of the others.
  (3 – 4 marks)
- Candidate shows sophisticated understanding of the contribution made by fabrics and components and is able to give a clear explanation.
  (5 – 6 marks)   (6 marks)

   (ii)   E.g. lightweight, soft, washable, smooth, flexible, firm, lustrous.
Some explanation as to why they are needed.
4 acceptable qualities, 1 mark each (4 × 1 mark)
2 marks per acceptable reason (4 × 2 marks)   (12 marks)

   (iii)   E.g. polyester or silk satin, cotton chintz, polyester crepe, crinkled polyester.
Fibre content 1 mark
Fabric name or description 1 mark   (2 marks)

(c)   (i)   E.g. satin fabric is very slippery, quilting adds extra thickness which can be difficult to sew, may be problems keeping stitched pattern even, delicate satin fabric which snags easily.

Marks awarded as follows:
- Little understanding, simplistic statements only, candidate will describe fabrics/product rather than potential manufacturing problems.

        (1 – 2 marks)
- Candidate shows understanding of the problems associated with fabric and product but will concentrate on one or two at the expense of the others.

        (3 – 4 marks)
- Candidate shows sophisticated understanding of the likely difficulties and is able to give a clear explanation relating to several aspects of fabric/product.

        (5 – 6 marks)   (6 marks)

(ii)   E.g. soft lightweight fabrics, some are transparent, delicate components, pale colours.

Marks awarded as follows:
- Little understanding, simplistic statements only, candidate will describe fabrics/product rather than potential manufacturing problems.

        (1 – 2 marks)
- Candidate shows understanding of the problems associated with fabric and product but will concentrate on one or two at the expense of the others.

        (3 – 4 marks)
- Candidate shows sophisticated understanding of the likely difficulties and is able to give a clear explanation relating to several aspects of fabric/product.

        (5 – 6 marks)   (6 marks)

Total 40 marks

Question 2

(a)   E.g. to improve care properties, to reduce costs, to make fabrics for specific applications, to improve strength and abrasion resistance, to allow fabrics to be heat set.

Marks awarded as follows:
- Basic information with evidence of only limited understanding of the need to blend fibres, few examples will be given, candidate will be confused and may refer to only one blend

(1 – 3 marks)
- Candidate show knowledge of the reasons for fibre blends and is able to give examples of blends to illustrate points made but these may be confined a limited number of fibres

(4 – 7 marks)
- Candidate shows detailed knowledge and understanding of the reasons for blending and gives a wide range of examples of different blends and their uses

(8 – 10 marks)   (10 marks)

(b)   (i)   **Wool:** e.g. elasticity, ability to absorb moisture without feeling wet, natural ability to repel water, presence of scales and natural crimp which makes wool a poor conductor of heat, crease resistance, natural flame resistance, soft to handle.
Nylon: e.g. strength, elasticity, abrasion resistance, low moisture absorbency, lightweight, crease resistant.
Reasons for blending include: wool/nylon fabrics are easier care, have improved wear properties, can be heat set, are lighter weight and lower cost than all wool, are softer to handle, less electrostatic, more absorbent, more insulation than all nylon.

Marks awarded as follows:
- Basic information with evidence of only limited knowledge, fibre properties will be given scant coverage. Reasons for blending will be generalised rather than specific to the 2 fibres.

(1 – 3 marks)
- Candidate shows knowledge of the fibre properties but there will be a lack of specific information. Some reasons for blending related to the 2 fibres concerned will be given

(4 – 7 marks)
- Candidate shows detailed knowledge and understanding of the properties of wool and nylon and the reasons why they are blended. A wide range of examples will be given to support points made.

(8 – 10 marks)   (10 marks)

(ii)   **Two** appropriate applications, 1 mark each
Plus reasons for choice, 3 marks each   (8 marks)

Total 28 marks

Question 3

(a)   (i)   E.g. corduroy, velvet, terry towelling, fake fur
             Name of fabric, 1 mark
             Fibre content, 1 mark
             Description of fabric, 2 marks
             Two fabrics, 4 marks each   **(8 marks)**

      (ii)   E.g. velvet is not very hardwearing thus used for special occasion wear, towelling very hardwearing, fur fabrics hardwearing although pile can be lost, corduroy fairly hardwearing.
             Candidate is expected to evaluate the durability of the two fabrics selected in (i) and will probably refer to both fabric construction and fibre content. Reference may be made to typical end use.

             Marks awarded as follows:
             • Little understanding, simplistic statements only, candidates will typically describe fabrics/end use rather than address issue of durability.
                                      (1 –2 marks)
             • Candidate shows understanding of the nature of durability but will describe rather than evaluate the fabrics selected. Some simplistic statements may be made.
                                      (3 – 4 marks)
             • Candidate shows sophisticated understanding of the nature of durability and will make a detailed evaluation of the fabrics selected, referring to fibre content and construction of the fabric.
                               (5 – 6 marks)   **(6 marks)**

      (iii)   Appropriate product, 1 mark
             Reasons for suitability, 2 marks
             Two products, 3 marks each.   **(6 marks)**

(b)   E.g. pile fabrics must be cut with a nap layout, cutting on straight of grain, care when stitching so layers do not 'walk' across each other, care when pressing so as not to flatten pile.

      Marks awarded as follows:
      • Little knowledge shown of production methods, explanation will be in simplistic terms only.
                                    (1 – 2 marks)
      • Candidate shows some understanding of construction methods but will lack precise knowledge. Some of the explanation will be sketchy/incorrect.
                                    (3 – 5 marks)
      • Sound and detailed knowledge shown, candidate will give accurate information with examples.
                                 (6 – 8 marks)   **(8 marks)**

Total 28 marks

Question 4

(a) E.g. needle punched, thermo bonded, spun laced, adhesive bonded, felted.
Candidate should briefly explain web formation and method of holding it
together.

Marks awarded as follows:
* Basic and confused explanation with evidence of only simplistic
  understanding. It is likely that only one aspect of manufacture will be
  covered.

  (1 – 3 marks)
* Candidate provides a basic explanation of a method but there will be some
  gaps in knowledge and a lack of specific information.

  (4 – 7 marks)
* Sound and detailed knowledge of one method referring to all aspects of
  manufacture.

  (8 – 10 marks) (10 marks)

(b) (i) E.g. fabrics with flame retardant finish. Fabrics for medical
applications, wipes for industrial applications, fabrics with carbon fibres
for military use, Nomex felts for gas filters and office machine parts,
fabrics for car seats. Use in food industry.
Description of fabric, 2 marks
Typical use(s), 1 mark
Two fabrics, 3 marks each   (6 marks)

(ii) E.g. cheap to produce thus economical for disposal, easier to include
special qualities needed.

Marks awarded as follows:
* Simple statements, e.g. 'cheap to make'.

  (1 – 2 marks)
* More detailed statements making appropriate reference to fabrics
  and applications selected.

  (3 – 4 marks) (4 marks)

(c) Non-woven fabrics are cheap to produce as they are made quickly, many use
recycled fibres or fibres produced from sustainable forests, cloths impregnated
with cleaning products reduce use of CFCs. Although many applications are
for disposable products, the cost of cleaning and sterilising traditional fabrics
can be higher, use more resources and by-products can cause environmental
damage. Problems finding suitable landfill sites for waste, costs of and by-
products produced by incineration of waste, excess packaging materials used in
selling and marketing products.

Any **two advantages,** 2 marks each
Any **two disadvantages,** 2 marks each   (8 marks)

Total 28 marks

Questions total 96
Quality of written communication 4
Paper total 100