

GCE 2004

June Series



Mark Scheme

Design and Technology: Product Design *(Subject Code PD1T)*

Mark schemes are prepared by the Principal Examiner and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation meeting attended by all examiners and is the scheme which was used by them in this examination. The standardisation meeting ensures that the mark scheme covers the candidates' responses to questions and that every examiner understands and applies it in the same correct way. As preparation for the standardisation meeting each examiner analyses a number of candidates' scripts: alternative answers not already covered by the mark scheme are discussed at the meeting and legislated for. If, after this meeting, examiners encounter unusual answers which have not been discussed at the meeting they are required to refer these to the Principal Examiner.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of candidates' reactions to a particular paper. Assumptions about future mark schemes on the basis of one year's document should be avoided; whilst the guiding principles of assessment remain constant, details will change, depending on the content of a particular examination paper.

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Design and Technology: Product Design

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.

<i>Performance Criteria</i>	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.

(low mark range)
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.
(mid 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.
(high 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.

Question 1

- (a) E.g. the use of striped, plain and checked fabrics for the sofa, cushions, throw and lampshade using a mix of patterns in light and dark colours, textured carpet. The patterned fabrics offset the plainness of the décor and add a focal point to the room.

Marks awarded as follows:

- Little understanding, simplistic statements only, candidate typically concentrates on one aspect of the décor without considering other areas. Will describe room with little, if any, attempt to analyse it. (1–2 marks)
- Candidate shows understanding of the contribution made by more than one aspect but is unable to consider the impact of the décor as a whole. Some parts of the response will be descriptive of the room but there will be a sound attempt to analyse its impact. (3–5 marks)
- Candidate shows sophisticated understanding of the contribution made by several aspects of the fabrics to the décor as a whole and is able to give a clear explanation. (6–8 marks)

- (b) (i) E.g. hardwearing, abrasion resistant, soft/non-irritating, flame retardant, smooth, washable/stain resistant, flexible, firm, aesthetics, crease-resistant, colourfast, lustre, handle. Some explanation as to why they are needed.

Marks awarded as follows:

- Basic information with evidence of only limited knowledge, fabric properties will be given scant coverage. Candidate will give only superficial reasons for the qualities needed. Information will be generalised rather than specific. Possibly a list with no further information. (1–4 marks)
- Candidate shows knowledge of the fabric properties but there will be a lack of specific information. Some understanding of the need for the qualities identified but there will probably be elements of confusion and inappropriateness. (5–8 marks)
- At least 3 properties with some explanation of importance. (7–8 marks)
- Candidate shows detailed knowledge and understanding of the properties required in the fabric and is able to explain them clearly with appropriate points made. A wide range of properties will be given with detailed reasons given for their importance. There will be some evidence of the ability to prioritise their importance. At least 4 properties with sound explanation. (9–12 marks)

- (ii) E.g. polyester / cotton, cotton, silk acrylic.
 Fibre content, (1 mark).
 Appropriate for cushion, (1 mark). (2 marks)

- (c) (i) E.g. to reinforce edges, decoration / finish edges, emphasize shape, add quality, helps keep the shape.

Marks awarded as follows:

- Candidate offers a limited number of uses which may not be appropriate. No explanation of importance. (1–3 marks)
- Candidate is specific about a number of uses and gives a clear explanation of their importance. (4–6 marks)

- (ii) E.g. thread, zip, buttons, care label, etc.
Name of component, (1 mark)
Description of component (2 marks)
2 components, (3 marks each) (6 marks)

- (d) E.g. stripes/checks may need to be cut with a nap layout, they must be cut on straight of grain, care should be taken to ensure that a prominent line of stripes or check is centralised, pattern should be matched across seams, care with uneven stripes.

Marks awarded as follows:

- Little knowledge shown of care needed explanation will be in simplistic terms only. (1–2 marks)
- Candidate shows some understanding of care needed but will lack precise knowledge. Some of the explanation will be sketchy/incorrect. (3–4 marks)
- Sound and detailed knowledge shown, candidate will give accurate information with examples. (5–6 marks)

Total 40 marks

Question 2

- (a) (i) A = plain or tabby weave,
B = weft knit,
C = twill weave (1 mark each) (3 marks)

- (ii) Candidate should describe the plain weave, weft knit and twill weave structures.

Marks awarded as follows:

- Little knowledge shown of production method (1 mark)
 - Some understanding but a lack of precise knowledge. (2 marks)
 - Sound and detailed knowledge shown. (3 marks)
- 3 structures (3 marks each) (9 marks)**

- (b) E.g.

	Plain weave	Weft knit
(i) Insulation	Smooth fabric with little capacity to trap air thus does not insulate well.	Looped structure has more ability to trap air and may thus be a better insulator in still air but not so good in moving air.
(ii) Stability	Very stable because of the interfacing of the warp and weft and will keep its shape well.	The interlocked loops have the capacity to move when tension is applied and thus the fabric easily loses its shape.
(iii) Care and maintenance	Fairly strong because of interlaced yarns, thus depending on fibre content, does not require any special treatment. It may tear if undue tension is applied because there is no facility for 'give'.	Less strong in that it does not hold its shape and will need to be eased back into original shape after washing. Weight of water can easily distort it and it may not recover, especially if made from wool fibres.

Marks awarded as follows:

- Basic and confused explanation with evidence of only simplistic understanding. There are likely to be some inaccuracies in information offered. (1–2 marks)
 - Sound and detailed knowledge of both structures with effective comparison made. (3–4 marks)
- 3 properties (4 marks each) (12 marks)**

- (c) E.g. use of coloured yarns, different stitch formations, printing, textured/fancy yarns, embroidery. Not sequins/beads/appliqué.
Method (1 mark) plus brief detail (1 mark)

2 methods (2 marks each) (4 marks)

Total 28 marks

Question 3

- (a) E.g. Cotton is absorbent, non-irritating, strong and resists abrasion but inelastic so it creases badly, takes a long time to dry and shrinks. Polyester is strong, resists abrasion, can be heat-set and dries quickly but develops static, cannot be washed at high temperatures and can be uncomfortable because it is not absorbent. By blending them together it is possible to produce fabrics which have improved care properties, to reduce costs, to improve strength and abrasion resistance, to improve comfort factors, to allow fabrics to be heat-set and to reduce creasing.

Marks awarded as follows:

- Basic information with evidence of only limited understanding of the properties of both fibres and the effects of blending them. Reasons for blending will be generalised rather than specific to the 2 fibres. They will be confused and give inaccurate information. (1–3 marks)
 - Candidate shows knowledge of the properties of the two fibres and is able to give examples of their use. There will be understanding of the reasons why they are blended but some points may be general rather than specific. (4–7 marks)
 - Candidate shows detailed knowledge and understanding of the properties of both fibres and is able to give several accurate reasons for blending them related to the properties. Examples given to illustrate points made. (8–10 marks)
- (b) (i) Polyester is produced as continuous filament (1 mark)
and needs to be cut into staple form (1 mark)
so that it can be spun (1 mark)
with the cotton which is naturally in staple form.(1 mark)
Also novelty yarns with spun cotton wrapped around polyester core. (4 marks)
- (ii) E.g. polyester / cotton 50/50, 70/30, 60/40, 30/70.
- 2 blends,** (1 mark each)
Two appropriate applications, (1 mark each)
Plus reasons for choice. (3 marks each) (10 marks)
- (c) They are very flammable (1 mark)
The cotton flares easily (1 mark)
The polyester melts and drips (1 mark)
The fabric burns fiercely (1 mark)
reference to ‘scaffold effect’ (1 mark)
high temperatures involved (1 mark)
release of dangerous fumes (1 mark)
Any 4 appropriate points. (1 mark each) (4 marks)

Total 28 marks

Question 4

- (a) E.g. Interfacing is used to support and strengthen collars and cuffs, to stiffen waistbands and prevent them stretching. It is used behind buttons and buttonholes to strengthen the area, to prevent shoulder and other areas stretching and to support the weight and shape of pockets and other details.

The candidate may give examples of specific materials used for interfacing as well as the function in various parts of garments and furnishing products.

Marks awarded as follows:

- Basic information with evidence of only limited knowledge and understanding of the use of interfacings. Information will be in general terms with few examples given. (1–3 marks)
- Candidate shows understanding of the use of interfacing and relates this knowledge to some examples. There will be a limited number of points made - these will tend to relate to similar examples. At least 3/4 uses with some examples. (4–7 marks)
- Candidate shows detailed knowledge and understanding of the use of interfacings and will relate this knowledge to a wide range of appropriate examples. 4 or more uses with sound examples. (8-10 marks)

- (b) e.g. linings make a garment easier to wear and help prevent creasing. They help garments/curtains drape better and may add an insulating layer. Clothing will then be more comfortable next to the skin and linings may help prevent damage to an outer fabric from perspiration or deodorants. They protect curtains from being damaged by sunlight. Lining will help prevent trousers and skirts from ‘seating’. They add quality to products and cover construction processes.

Candidates may give examples of specific lining fabrics as well as their function.

Marks awarded as follows:

- Basic information with evidence of specific of only limited knowledge and understanding of the linings. Information will be in general terms with few examples given. (1-3 marks)
- Candidate shows understanding of the use of linings and relates this knowledge to some examples. There will be a limited number of points made – these will tend to relate to similar examples. At least 3/4 uses with some examples. (4-7 marks)
- Candidates shows detailed knowledge and understanding of the use of linings and will relate this knowledge to a wide range of appropriate examples. 4 or more uses with clear examples. (8-10 marks)

- (c) E.g. Underlinings are used to stabilise a top fabric, to change the ‘handle’ of a fabric, to make a fabric less transparent, to help define a shape, to add an insulating layer, to change visual appearance of top fabric.

Marks awarded as follows:

- Basic information with evidence of only limited knowledge and understanding of the use of underlinings. Information will be in general terms with few examples given. There will be some confusion with linings and/or interfacings. (1–2 marks)
- Candidate shows understanding of the use of underlinings and relates this knowledge to some examples. There will be a limited number of points made – these will tend to relate to similar examples and some may be confused. At least 2/3 uses with some examples. (3–5 marks)
- Candidate shows detailed knowledge and understanding of the use of underlinings and will relate this knowledge to a wide range of appropriate examples. 3 or more uses with clear examples. (6–8 marks)

Total 28 marks

Question total	96 marks
Quality of written communication	4 marks
Paper total	100 marks