



General Certificate of Education

Design and Technology: Product Design 6551

PD6T Written Paper

Mark Scheme

2007 examination - June series

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.

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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-linked 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

Section A: Materials and Components

Question 1

- (a) Candidates are expected to explain how different cross sectional shapes and surface construction of fibres can affect the resulting fabrics made from those different fibres. Shapes could include: flat, oval with convolutions, round, dog bone, serrated, trilobal, hollow-core and square with voids.
Reference should be made to bulk, texture, lustre, shiny surfaces, wickability, handle, etc and how these will be affected.

Marks awarded as follows:

Limited and simplistic descriptions. Answers lack depth of response.
(1 – 2 marks)

Some correct information but reference is only to a few cross section shapes and surface construction, some relevant description given but answers lack detail.
(3 – 5 marks)

Detailed and accurate description given of both cross sectional shape and surface construction and a clear explanation of how this affects the resulting fabric.
(6 – 8 marks)

(8 marks)

- (b) An explanation of **two** different methods of creating textured yarns has been given, methods could include crimping, knit de knit, knife edge, false twist,

Marks awarded as follows:

Limited and simplistic explanation given, little reference to method of texturising yarn. Answers lack depth of response.
(1 – 2 marks)

A more detailed explanation is given with accurate reference to method of texturising yarn.
(3 – 4 marks)

(2 × 4 marks)

- (c) Descriptions of **two** different **Novelty** yarns with clear illustrations of construction method. Examples could include, chenille, boucle, bourette, metallic, slub, core-spun, crepe yarn.

Limited description of chosen novelty yarn given with a simplistic illustration. Answers lack depth of response
(1 – 2 marks)

A more detailed description given with an accurate illustration of construction
(3 – 4 marks)

(2 × 4 marks)

TOTAL MARK: 24

Question 2

- (a) (i)** Clear explanations of blends and mixtures would be expected. A definition referring to blends being the combining of fibres before or during the spinning process and mixture fabrics being single fibre yarns which are mixed during the construction of the fabric would be expected. Marks will be allocated evenly between mixture and blend.

Limited response answer with little detail regarding blends and mixtures, some inaccuracies in definitions

(1 - 2 marks)

Reasonable response given with some detail regarding blends and mixtures, definitions will be accurate but may lack specific detail.

(3 - 4 marks)

A detailed response given with accurate description of blended or mixture fabrics. Definitions will be accurate and detailed.

(5 - 6 marks)

(6 marks)

- (ii)** Explanations of reasons for blending and mixing fibres and yarns in fabrics for function, performance, aesthetics and price would be expected along with examples of different blends and mixtures would be expected. Reference to combinations of fibres in cored structures, for example with elastanes.

Few examples given, little or no information regarding reasons for blending

(1 -3 marks)

Examples will be relevant but may be only a few or examples given will lack more detailed explanation.

(4 - 7 marks)

In depth explanations for the reasons for blending and mixing will be given. A number of relevant examples are given.

(8 -10 marks)

(10 marks)

- (b)** **Two** accurate branded fibres are given with a clear description of each fibre and what each fibre is used for. For example: Trevira CS for flame retardant products particularly interior furnishings, Transpor Dry Fibre for moisture management technology, Tactel Diabolo for skiwear, SeaCell Active used in clothing with health benefits, Amicor Pure used for allergy free bedding. Will allow latest version of Lycra®, Lurex®
Gortex is a membrane system not strictly a fibre but some credit given.

Limited response little detail regarding branded fibre, maybe some inaccuracies with little or no reference given to what branded fibre is used for, or brand not named.

(1-2 marks)

Detailed response with accurate description of branded fibre with a clear explanation of what branded product is used for.

(3 -4 marks)

(2 × 4 marks)

TOTAL MARKS: 24

Section B: Design and Market Influences

Question 3

- (a) Detailed illustrations with notes of interactive products designed for the 21st Century are expected.

Products could include a wide range of textile products from clothing, both fashionable and functional, accessories, environmental and interiors. They should be products which clearly illustrate interactivity with the user and/or environment and have been designed for 21st Century living.

Examples could include Lucy Orta flexible clothing, the solar panelled bag, the Levi – Philips jacket, PCM outdoor clothing, i-Pod bag with built in speakers, softswitch technology, France Telecom computer scarf, Infineon Technologies- MP3 player jacket and Corpo Nove shape memory shirt.

Reference could also be made to thermochromic, phosphorescent, solar active and microencapsulation yarns and fabric.

Limited credit given for reference to Fastskin and other performance products which function rather than interact.

Limited response with little detail about selected products, vague reference to interactivity with the environment and 21st Century living. Simplistic illustrations.

(1-2 marks)

Reasonable response with some detail about selected products, reference to interactivity with the environment and 21st Century living. Relevant illustrations of chosen products, some detail given.

(3 -5 marks)

In-depth illustrations of selected products, accurate reference to interactivity with the environment and 21st Century living. Illustrations are clear, detailed and relevant.

(Descriptions can be in both visual and written form)

Examples: Lucy Orta's clothing that converts into living environments and sleeping bags and Softswitch technology for operating interior remote control products and clothing that monitors health.

(6 – 7 marks)

(2 × 7 marks)

- (b) Clear explanations as to why **each** of the products described in part a) are suitable for the end uses given and clear descriptions of how they interact with the user and/or environment are given.

Simplistic explanation

(1 – 2 marks)

More in-depth explanation

(3 – 5 marks)

(2 × 5 marks)

(10 marks)

TOTAL MARKS: 24

Question 4

Two named textile or fashion designers given in answer who have made an important contribution to textile product design. A clear explanation and evaluation of their influence and contribution to textile product design is given.
Key products produced by them are described.

For example William Morris, Sonia Delaunay and her development of simultaneous colour theory and her development of patterned textiles, Frederick Worth, Mario Fortuny and the development of grecian pleated dresses, Gabrielle Chanel, Elsa Schiaparelli and her incorporation of the Surrealist art movement, Christian Dior for the development of the new look in particular, Mary Quant, Giorgio Armani and the development of the suit, Issey Miyake and his development of pleated fabrics and his latest work on garments from continuous knitted fabric, Vivienne Westwood and Zandra Rhodes and her development of ethnic inspired printed pattern.

Named designers will be accepted if candidates can clearly illustrate the contribution made by that designer.

Limited response with little detail about named designer, vague reference to their influence and evaluation of the contribution they have made, few product examples given.

(1 - 4 marks)

Reasonable description of named designer, some reference to their influence and contribution they have made, a number of product examples given but there is a lack of range or detail in the product examples described or overall depth to explanation of influence and evaluation of contribution.

(5 - 8 marks)

Detailed description of named designer, in-depth reference to their influence and evaluation of the contribution they have made, a wide range of product examples described with appropriate detail and thorough explanation and understanding given.

(9 - 12 marks)

(2 × 12 marks)

TOTAL MARKS: 24

Section C: Processes and Manufacture

Question 5

- (a) A clear explanation of the term basic block pattern is given

Basic block patterns which can also be referred to as slopers, are foundation patterns constructed to fit a specific size. They are used as the basis for developing new patterns.

Basic, simplistic statement regarding a basic block pattern, little information given
(0 - 1 marks)

Thorough explanation of a basic standard block pattern is given, accurate information
(2 marks)

(2 marks)

- (b) Clear adaptations of basic blocks are illustrated in the form of diagrams.

Relevant pattern adaptation is illustrated.

Pattern adaptation expected: -

Darts – correct placement
Extension flap
Extending and shaping of bodice
Closed darts (from blocks)
Neckline outline
Sleeve amendment – shaping (bell sleeve)
Pattern for sleeve cuffs
Buttonhole placements
Grainline
Sewing line
Button placement markings
Reference: sleeve shortening

Simplistic illustrations of how basic blocks can be modified, little detail given.
Inaccuracies in additional pattern pieces and pattern marking are incorrect.
(1-3 marks)

Reasonable illustrations of how basic blocks can be modified with some detail given.
Some relevant additional pattern pieces and pattern markings.
(4-6 marks)

Detailed illustrations of how basic blocks can be modified, accurate adaptations shown
Very accurate additional pattern pieces and pattern markings.
(7-10 marks)

(10 marks)

- (c) A clear explanation of the use of new technology, ICT and CAM in the development of patterns for commercial use. Candidates may make reference to the use of computers in the development of pattern pieces, to the use of product simulation, pattern grading, plotting, pattern lay plans. Type in one way – two way lay plan – type of fabric.
Adaptation of basic block.
Reference to POS systems (pattern design software) – amount of pieces needed.
-pattern manipulation
-plotting (pattern output)
-marker maker (marker plan)
Advantages – speed, accuracy, e-mailing factories abroad, multiple copies, storage of patterns, library of templates, cost saving.
- body scanning – adaptation to pattern.

Limited response with little explanation given. Few examples are referred to in answer.
(1 - 4 marks)

A reasonable explanation of the use of new technology in the development of patterns for commercial use. Some specific examples are given to support answer.
(5 - 8 marks)

A detailed and thorough explanation of the use of new technology in the development of patterns for commercial use. A clear understanding is illustrated by the candidate. Relevant examples have been included to support answer given.
(9 - 12 marks)

(12 marks)

TOTAL MARKS: 24

Question 6

- (a) A clear explanation of the role of the HLCC, the Home Laundering Consultative Council, reference to a series of internationally accepted symbols that are recognized around the world would be expected.

Inaccurate explanation, limited explanation
(0 – 1 marks)

Accurate description and detail given
(2 – 3 marks)

(3 marks)

- (b) Explanations for the required care and maintenance of the following given and a relevant care label is created in each case:

- (i) A cashmere/ wool tailored jacket

Dry cleaning would be advised,
Delicate fabrics which could have a tendency for pilling during washing.
Reference should be made to the range of different components and inner structure, linings and interlinings which will all respond to washing in different ways and may distort during the washing process.

- (ii) Permanently pleated fashionable blouse

Heat sensitive structure, delicate wash cycle, hand wash, low temperature, or dry clean, do not iron (accept a cool iron if supported by explanation), hang to dry.

- (iii) Domestic curtains for a living room

Dry cleaning, if lined separately, lining could be carefully hand washed, avoid direct sunlight - accept a low heat wash if supported – reference to colourfast, to flammability.

Care labels would be expected to contain information regarding wash temperature, hand or machine, drying instructions, ironing requirements, use of bleach, dry cleaning solvents and any additional guidance expected and the fibre content of the product.

Little explanation regarding the suitability of the recommended care and maintenance, limited information given on the care label created, some inaccuracies.

(1 - 2 marks)

Candidate illustrates a reasonable understanding of the care and maintenance required for product given. Care label suggested contains most of the information expected.

(3 - 5 marks)

Candidate illustrates an excellent understanding of the care and maintenance required for product given. Care label suggested contains all of the information expected.

(6 - 7 marks)

(3 × 7 marks)

TOTAL MARKS: 24