

GCE

Design and Technology: Fashion and Textiles

Unit **H005:** Principles of Fashion and Textiles

Advanced Subsidiary GCE

Mark Scheme for June 2018

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All examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes should be read in conjunction with the published question papers and the report on the examination.

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Annotations

Annotation Name	Description
✓	Tick
X	Cross
√ +	Development of point
?	Unclear
BOD	Benefit of doubt
BP	Blank page
L1	Level 1
L2	Level 2
L3	Level 3
NAQ	Not answered question
NBOD	Benefit of doubt not given
OFR	Own figure rule
REP	Repeat
TV	Too vague

	Question	Answer	Mark	Guidance
1	(a)	Possible examples include:	4	For each example:
		• Thermochromic dyes: change colour in response to specific changes in body temperature (1). This indicates when a certain temperature has been reached (1).		One mark for identification of example and one mark for justification of point made.
		 Photochromic dyes in fibres, yarns and fabrics which change from white to colour in response to UV rays in sunlight (1). This indicates exposure to UV rays (1). Any other valid suggestion. 		Award mark if similar justification is given to both examples if this is the reason for using the smart material.
	(b)	Indicate content:	6	Level 3 (5-6 marks)
		The candidate is expected to demonstrate their understanding of the process involved through a series of annotated sketches and/or notes. There may be variations to the process as indicated but to get into Level 3 candidates must demonstrate a clear understanding of the end to end process. The response could refer to the flat-bed or rotary screen printing method/process. Flat-bed screen printing: Three colour print needs three separate screens. Preparation of design for printing: design is transferred to	All processes demonstrated in the candidate's response must be in relation to an industrial screen printing method that would be used to complete the three-colour screen print. Candidates can draw on practical	The candidate will demonstrate a good level of detail of how a textile print manufacturer would use an industrial screen printing method to complete the three-colour screen print using accurate technical terms and consideration of any material, equipment and machinery required. Sketches, if used, will be clear and supported with relevant notes. The process includes all relevant stages. Level 2 (3–4 marks) The candidate will demonstrate a sound level of detail of how a textile print manufacturer would use an industrial screen printing
		 positive, then transferred to screen. Screen is coated with photo-sensitive emulsion. Screen exposed to UV light to accept image and screen is cleaned leaving exposed image. Flat screens placed in position (registration stops) ready for printing repeat pattern. Pigments are prepared, fabric is positioned. Print process begins - pigments applied to fabric by a squeegee which forces pigment through nylon mesh as automated process screens are raised and lowered. Design applied to fabric which is fed through a continuous feed to be further processed for finishing. 	experience from product analysis and the workshop to support their response to this question.	method to complete the three-colour screen print, using some technical terms and some consideration of any material, equipment and machinery required. Sketches, if used, will, for the most part, be clear and supported with notes most of which are relevant. The process includes some relevant stages. Level 1 (1–2 marks) The candidate will demonstrate a limited level of detail of how a textile manufacturer would use an industrial screen printing method to

Question	Answer	Mark	Guidance
	 Roller printing (also referred to as rotary or flat screen printing): Is a CAD process. Rollers arrived precoated with emulsion which is engraved/etched by computer to create design/stencil. Quality control check – for imperfections, e.g. pinholes that may impact production. Design repeat is dependent on circumference of the roller. The pigment (colour) is prepared. Each roller is attached to a colour reservoir which continually feeds pigment into centre of well of each roller. The rolling motion of the roller screen and its internal squeegee forces the ink through the roller via engraved/stencilled openings onto the fabric creating the pattern. Fabric has to be pre-prepared for printing. The fabric is fed at a continuous speed the same as the rollers. After printing, fabric has to be finished. Any other valid suggestion. 		complete the three-colour screen print, with a limited use of technical terms and basic consideration of any material, equipment and machinery required. Sketches, if used, will be unclear with only basic notes to accompany them. Few relevant stages are included. Level 0 (0 marks) No response or no response worthy of credit.
(c)	= 18.50 x 15/100 = 2.775. 18.50 - 2.775 = 15.725 = 15.73 (1).	1	For one mark: Mark awarded for the correct answer rounded to the nearest pence. There is no other valid answer.
(d)	Possible disadvantages include: It can be time consuming (1) due to aligning the pattern if it falls on a seam or construction point (1)/ if each piece is individually cut (1).	4	Up to two marks for explanation – one mark for disadvantage and one mark for expansion of point. Mix and match approach – i.e. the expansion point can relate to a different disadvantage depending on the argument made.

Question	Answer	Mark	Guidance
	 There can be waste material (1) if print is not positioned accurately (1)/there is a pattern repeat on the fabric (1). It can be costly (1) if there is individual cutting of each garment piece to minimise errors (1). Set up cost are expensive (1) due to the creation of screens or cylinders (1). Limited to amount of colours (1) due to amount of screens/cylinders available (1). Any other valid suggestion. 		
(e*)	 Indicative content: Advantages to the manufacturer of whole garment knitting: Reduced waste as garment produced as one piece. Reduced assembly processing as producing an item in its entirety eliminates sewing lead time. Garment assembled on knitting machine: no sewing. Reduced cost and improved quality as machinists are not required to assemble the pieces. New styles can be introduced quicker/ quicker turnaround response to market. Allows the designers to be more creative as they are not restricted by assembly processes and different knit structures can be combined in one garment without the need for joining. Design versatility and creativity. Less possibility that finished garments will irritate the wearer or be seen as there are reduced seams to cause friction so create greater demand for garment. Any other valid suggestion. 	The answer must focus on the manufacturer, not any other stakeholder. As a guide for full marks the candidate will provide two or three advantages to the manufacturer of using whole garment knitting. If candidates do not provide an analytical/evaluativ e response then only Level 1 can be awarded.	Level 3 (6–8 marks) The candidate produces a thorough discussion of the advantages to the manufacturer of whole garment knitting. The candidate demonstrates a comprehensive understanding of the question by explaining a number of benefits that manufacturers have found from using whole garment knitting techniques. When advantages are given they are clearly analysed in terms of the positive benefit they have had. There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated with the use of examples. Level 2 (3–5 marks) The candidate produces a sound discussion of the advantages to the manufacturer of whole garment knitting. The candidate demonstrates a reasonable understanding of the question by explaining one or more benefits that have come from manufacturers using whole garment knitting techniques. When advantages are given they are explained in terms of the positive benefit they

Question	Answer	Mark	Guidance
			had had although one or two opportunities for development are missed.
			There is a line of reasoning presented with some structure. The information presented is in the most-part relevant and supported by some evidence.
			Level 1 (1–2 marks) The candidate demonstrates knowledge of whole garment knitting techniques with limited awareness of how these techniques have benefited manufacturers. There is no analysis of the positive benefits and any advantages given, if any, are basic.
			The information has some relevance and is presented with limited structure or detail The information is supported by limited evidence.
			Level 0 (0 marks) No response or no response worthy of credit.

	Question	Answer	Mark	Guidance
2	(a)	=	2	Award two marks as follows:
		C: $4 \times 0.8 = 3.2$ (1).		One mark for showing how the radius of sphere C is 3.2 cm.
		D : 3.2 X 0.8 = 2.56 (1).		 One mark for showing how the radius of sphere D is 2.56 cm.
				There are different ways that a candidate could express their answer. Award marks if intention of candidate is clear.
	(b)	=	2	Award two marks as follows:
		$(V = 4/3\pi r^3)$		 One mark for calculating the volume of sphere C. One mark for calculating the volume of sphere D.
		C : 137cm ³ (1).		Answers must be correct to the nearest whole number.
		D : 70cm ³ (1).		number.
	(c)	=	3	Award three marks as follows:
		A = 524 x 0.75 = 393		One mark for working out the ¾ volume of the spheres.
		B = 268 x 0.75 = 201		 One mark for working out the cost per cubic centimetres.
		C = 137 x 0.75 = 102.75		One mark for working out the total cost in pounds If correct answer is given without working out
		D = 70 x 0.75 = 52.5		shown award full marks.
		Total: 393 + 201 + 102.75 + 52.5 = 749.25 (1).		*Allow error carried forward (ECF) where correct working out is shown.
		749.25* x 0.35 = 262.24 (1).		If correct answer is given without working out shown
		262.24*/100 = £2.62 (1).		award full marks.
				Working out must be shown in order to award appropriate marks.

Question			Answer	Mark	Guidance
		Alternatively: Quick way – add all 4 (524 +268 + their 137 = [£] 262.24 262.24 divided by 100	+ their 70) × $\frac{3}{4}$ × 0.35 oe		
(d)	(i)	=Cumulative Costs 25 000 35 000 43 000 51 000 56 000 71 000 81 000	Cumulative Income 2 000 7 000 19 000 44 000 79 000 124 000 139 000 147 000	1	For one mark. All answers must be correct for one mark.

Question	Answer	Mark	Guidance
(ii)	150 000 140 000 120 000 110 000 100 000 90 000 Cumulative costs and cumulative income 70 000 60 000 40 000 30 000 20 000 10 000 Quarter	2	One mark for showing the cumulative costs line correctly plotted on the graph*. One mark for showing the cumulative income line correctly plotted on the graph*. *Allow error carried forward (ECF) where correct working out is shown. Note: The points for cumulative costs and cumulative income should be plotted and then joined with a dotty line not a solid one as this is a time series graph.
(iii)	• Quarter 4 (1).	1	For one mark. Note: If the graph has been plotted incorrectly but the candidate has identified where the lines cross and from this identified the appropriate Quarter then credit must be given.

Question	Answer	Mark	Guidance
3 (a)	 Use of alternative fabric, e.g. rip stop nylon (1). The close weave structure of rip stop nylon gives a greater strength (1)/ can be wiped clean (1). Use of an alternative method to fasten (1) e.g. a longer strap over the headrest of the seat which could provide more strength than Velcro (1). Use of lining (1) to strengthen the fabric (1)/allows the product to keep its shape (1). Colour of the fabric used (1) to afford dirt showing easily (1). Any other valid suggestion. 	4	Award two marks for each improvement: One mark for identification of improvement and one mark for justification of point made. Allow two marks for two different fabrics but only allow the remaining two marks if justifications are different.
(b)	 Indicate content: The candidate is expected to demonstrate their understanding of the process involved through a series of annotated sketches and/or notes. There may be variations to the process as indicated but to get into Level 3 candidates must demonstrate a clear understanding of the end to end process. The process for adding customised embroidery: Client chooses font from selected text from online portal to be applied to pocket. This would be sent to production unit. Text is converted to digital pattern; this is called digitizing and imported to machine memory. The text is inserted into set pocket template in embroidery software, adjustments made if necessary. Pre-cut pocket backed with interfacing/backing is placed in embroidery frame/hoop, which stabilises design during stitching. The hoop and fabric is loaded into the embroidery machine. 	All processes demonstrated in the candidate's response must relate to how the customised embroidery is applied to the pocket of the storage item. This is discussed from a industrial perspective, students may answer question from a classroom one-off perspective.	Level 3 (5-6 marks) The candidate will demonstrate a good level of detail of how the customised embroidery would be applied to the pocket of the storage item using technical terms and consideration of any material, equipment and machinery required. Sketches, if used, will be clear and supported with relevant notes. The process includes all relevant stages. Level 2 (3–4 marks) The candidate will demonstrate a sound level of detail of how the customised embroidery would be applied to the pocket of the storage item using some technical terms and some consideration of any material, equipment and machinery required. Sketches, if used, will, for the most part, be clear and supported with notes most of which are relevant. The process includes some relevant stages.

Question	Answer	Mark	Guidance
	 The digitized design is transferred to the machine which guides the stitching and colour selection. Design checks are made to see design fits. Once finished the machine will signal an audible sound and automatically cut the thread. Design is removed and checked and next clients order is placed on machine and process repeated. The design is stored digitally so the client can have a design remade when required. Any other valid suggestion. 		Level 1 (1–2 marks) The candidate will demonstrate a limited level of detail of how the customised embroidery would be applied to the pocket of the storage item, with limited use of technical terms and basic consideration of any material, equipment and machinery required. Sketches, if used, will be unclear with only basic notes to accompany them. Few stages relevant stages are included. Level 0 (0 marks) No response or no response worthy of credit.
(c)	 Products are more expensive (1) because customisation will require extra manufacturing time and resources (1). Time is often lost when new production lines are introduced as machinery needs to be reset (1). This could be due to a change in print screen to meet the latest customisation request (1). Consideration of bath production processes (1) as production lines and working conditions must be flexible and easily adapted to meet with a variety of demands (1). The manufacturer will need a number of machines set up with different colours (1) which will incur extra set up costs (1). Any other valid suggestion. 	2	Up to two marks for explanation – one mark for impact and one mark for expansion of point.

Question	Answer	Mark	Guidance
(d)	Possible reasons include:	4	For each reason:
	 They are eco-friendly (1). The bonded fabric can be made from both manmade and natural fibres which means they can be biodegradable (1). They can be made for single use (1) so avoid cross contamination (1). Low production costs (1) economical to buy (1). They do not unravel easily (1) making them good to store rolled up (1). Soft on the skin (1) comfortable and breathable (1). Good bacteria barrier (1) reduces risk of infections (1). Any other valid suggestion. 		One mark for identification of reason and one mark for justification of point made.

Que	estion	Answer	Mark	Guidance
4 ((a) (i)	 Methods could include: Interviews (1). Questionnaires (1). Brainstorming workshops (1). Focus groups (1). Any other valid suggestion. 	2	For two marks.
	(ii)	 Use of the internet (1) to retrieve information on new looks/latest colours/celebrity wardrobes/designer collections (1). Use of merchandiser knowledge (1) to predict what the target market is likely to be requesting for upcoming seasons (1). Fashion weeks (1) watching the latest fashion shows; London, Paris, New York etc. to identify what the high end designers are predicting (1). Any other valid suggestion. 	2	Up to two marks for description – one mark for way and one mark for expansion of point. The question asks for technological and fashion trends.

Question	Answer	Mark	Guidance
(b)	Indicative content: How the shirt might be modified for mass production: Cost: The wholesale price paid if made of silk in UK Vs India Vs Mauritius Vs China (so where it is made). The wholesale cost if different fabric used e.g. that is similar in feel/weight to silk, e.g. viscose. The wholesale cost in relation to change of fabric/components used/location made. The type of production process. The change in number of components, reduction. Move to lower labour cost area. Quantity of fabric ordered. Just-in-time production process so not holding large stocks of fabrics/components. Fabric Change in source of silk. Change in type of fabric, e.g. change from silk to viscose or polyester chiffon. Change in weave of fabric. Change in weave of fabric. Change in outting out pattern to reduce fabric wastage. Components Change in quality of components. Reduction in processes for manufacturing of components. Reduction in processes for manufacturing of components.	Mark 8 As a guide for full marks there will be a number of areas focused on in terms of how the shirt might be modified for mass production. If candidates do not provide an analytical/evaluativ e response then only Level 1 can be awarded.	Level 3 (6–8 marks) The candidate produces a thorough discussion of how the shirt might be modified for mass production. The candidate demonstrates a comprehensive understanding of the question by explaining a number of areas that these modifications could be made (cost, fabric, components and finishes). When modifications are given they are clearly analysed in terms of the mass production context. Level 2 (3–5 marks) The candidate produces a sound discussion of how the shirt might be modified for mass production. The candidate demonstrates a reasonable understanding of the question by explaining a number of areas that these modifications could be made (cost, fabric, components and finishes). When modifications are given they are explained in terms of the mass production context although one or two opportunities for development are missed. Level 1 (1–2 marks) The candidate demonstrates knowledge of modification techniques with limited awareness of the areas within which these modifications could be made (cost, fabric, components and finishes). There is no analysis of the context provided. Level 0 (0 marks) No response or no response worthy of credit.

Question	Answer	Mark	Guidance
	 Finishes Change the printing process for the fabric (e.g. from screen /roller to digital). Finishing of fabric. Adapt or amend the finishing required on the garment. Adapt or modify design of garment, to reduce fabric wastage. Adapt fabric design to reduce mechanical processes in finishing. Any other valid suggestion. 		
(c)	Indicative content: Patterns should include: Shirt front x 2. Shirt back x 1. Sleeve x 2. Collar x 2. Collar stand x 2. Cuff x 2. Interfacing/fusing templates for the placket and cuff Pattern markings should include: Cutting line Stitching line Cutting line Grainline Grainline	Candidate cannot achieve Level 3 if any of the below are missing: The Dart line is missing (diamond or triangle shape) it is on the front of the blouse on the right side just below the armhole). The front of the shirt has a fold line. Seamline is missing (this is the stitch line with solid line which indicates	Level 3 (5-6 marks) The candidate will demonstrate a thorough understanding of the pattern templates that would be required for the mass produced shirt. Accurate technical terms/pattern markings will be used. Sketches, if used, will be clear and supported with relevant annotations. Level 2 (3-4 marks) The candidate will demonstrate a sound understanding of the pattern templates that would be required for the mass produced shirt. A reasonable use of technical terms/pattern markings will be evident. Sketches, if used, will, for the most part, be clear and supported with annotations most of which are relevant. Level 1 (1-2 marks) The candidate will demonstrate a limited knowledge of pattern templates. A limited use of technical terms and pattern markings will be evident. Sketches, if used, will be

Question	Answer	Mark	Guidance
	Place on fold line	allowance 1.5cm).	unclear with only basic annotations to accompany them.
	Position dots		Level 0 (0 marks) No response or no response worthy of
	Pleats on sleeve		credit.
	Button hole and button position marks,		
	Notches		
	Collar cut 2		

Question	Answer	Mark	Guidance
(d)	=	2	Award two marks as follows:
	 Remove the allowance for the top and bottom button: 63 - (1+14) = 48cm (1). Divide 48 by the amount of spaces left between 5 buttons. 		 One mark for removing the allowance for the top and bottom button. One mark for correct answer.
	• 48 divided by 4 = 12cm (1).		If correct answer is given without working out shown award full marks. Working out must be shown in order to award appropriate marks.
(e)	 Indicative content: Possible ways CAD technology can deliver efficiencies in the design of fashion products: Scanning in fabrics to map onto the design to give a visual representation of the prototype to potential buyers. Creating print designs that can then be used on a prototype. Colour ways can be changed in minutes according to feedback. Modifying design elements and styling according to feedback; for example, changing the shape of a collar. Making use of a vast selection of component options prior to manufacture. Can save money by not having to make expensive prototypes prior to production. Saves time and increases productivity as ideas can be visualised quickly. Economical lay plans can be created using CAD, The patterns can be drafted quickly using specialist CAD software. Any other valid suggestion. 	As a guide for full marks there will be two or three ways in which CAD technology can deliver efficiencies in the design of fashion products. If candidates do not provide an analytical/evaluativ e response then only Level 1 can be awarded.	Level 3 (5-6 marks) The candidate produces a comprehensive evaluation of the ways CAD technology can deliver efficiencies in the design of fashion products. The candidate demonstrates a comprehensive understanding of the question by explaining a number of ways that CAD technology can be used. When examples of technological use are given they are clearly analysed in terms of the degree to which they have delivered efficiencies. Level 2 (3-4 marks) The candidate produces a sound evaluation of the ways CAD technology can deliver efficiencies in the design of fashion products. The candidate demonstrates a reasonable understanding of the question by explaining one or more ways that CAD technology can be used. When examples of technological use are given they are explained in terms of the efficiencies they have delivered although

Question	Answer	Mark	Guidance
			one or two opportunities for development are missed.
			Level 1 (1–2 marks) The candidate demonstrates knowledge of CAD technology with limited awareness of how this technology has delivered efficiencies. There is no analysis of the context provided.
			Level 0 (0 marks) No response or no response worthy of credit.

	Question	Answer	Mark	Guidance
5	(a)	 Fabrics used e.g. leather (1) vegans will not use any animal product (1). Style of product, how much of the body is covered up (1). Muslim women are encouraged to cover their head and body (1). Historical decorative patterns used (1) e.g. Egyptian hieroglyphics will only appeal to people with that interest (1). Traditional techniques used (1) Batik (1). Use of colour (1) e.g. in South Africa red is the colour of mourning but in China red symbolises good fortune (1). Any other valid suggestion. 	2	Up to two marks for description – one mark for way and one mark for example.
	(b)	 Social media (1) use of competitions e.g. repost to win (1). Publicity (1) use of celebrities to communicate and share information (1). Public relations (1) used to create a positive image-press days, website updates (1). Advertising (1) use of packaging and POS to make the product stand out (1). Any other valid suggestion. 	4	For each activity: One mark for each activity and one mark for development of point made:
	(c)*	Indicative content: Social issues/ethical issues associated with the design and manufacture of one-off fashion.	As a guide for full marks there will be a number of social and ethical issues discussed in relation to the	Level 3 (6–8 marks) The candidate produces a thorough discussion of the social and ethical issues associated with the design and manufacture of one-off fashion. The candidate demonstrates a comprehensive understanding of the question by explaining

Question	Answer	Mark	Guidance
	 Social issues: Gender. Sustainability. Recycling. The changing clothes, e.g. miniskirts of the 60's linked to feminism. The use of materials, e.g. Paco Rabanne 'new materials. Hussein Chalyan': smart materials. Cultural impact of clothing 'trickle up, or trickle-down effect of fashion' linked to fast fashion. Over use of fabric, e.g. Dior New Look. Ethical issues: Working conditions/labour practices/unsafe working conditions. Child labour. Copyright and heritage. Linked to transparency of making in the textiles and fashion industry, knowing where your clothes come from. Companies CSR policies. Any other valid suggestion. 	design and manufacture of one-off fashion. If candidates do not provide an analytical/evaluative response then only Level 1 can be awarded.	a number of issues that come with the design and manufacture of one-off fashion. When issues are highlighted they are clearly analysed within the context provided. There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated with the use of examples. Level 2 (3–5 marks) The candidate produces a sound discussion of the social and/or ethical issues associated with the design and/or manufacture of one-off fashion. The candidate demonstrates a reasonable understanding of the question by explaining one or more issues that have come from the design and/or manufacture of one-off fashion. When issues are highlighted they are explained within the context provided although one or two opportunities for development are missed. There is a line of reasoning presented with some structure. The information presented is in the most-part relevant and supported by some evidence. Level 1 (1–2 marks) The candidate demonstrates knowledge of social and/or ethical issues with limited awareness of how these issues have come from the design and/or manufacture of one-off fashion. There is no analysis of the context provided.

Question	Answer	Mark	Guidance
			The information has some relevance and is presented with limited structure or detail The information is supported by limited evidence. Level 0 (0 marks) No response or no response worthy of credit.

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