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Mark Scheme (Standardisation)
Summer 2008 Final

GCE

GCE D&T (6150/01)

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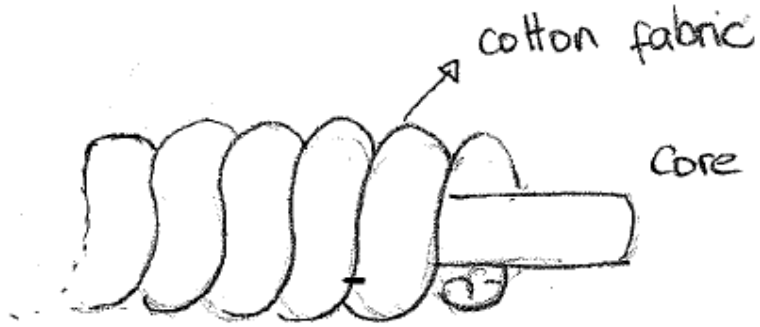
A PEARSON COMPANY

General Marking Guidance

- All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.
- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.
- There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.
- Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.

Question Number	Answer	Mark
1 (a)(i)	• High strength (1) • Dyes well (1) • Can be textured / bulked / heat set (1) • Can be developed to be a fine micro fibre or coarse fibre so can fit a wide variety of purposes (1) • Non- absorbent / prone to static (1) • Very good wicking properties (1) • Windproof / hydrophobic (1) • Resistant to weak acids / alkalis / solvents / mildew / fungus (1) • Crease resistant (1) • Good soil & stain release but not oil or grease & non allergenic (1) • Resilient / abrasion resistant (1) • Easy care (1) *Do not accept 'Thermoplastic'*	**(4x1)**
(ii)	• Acrylic (1) • nylon (polyamide) (1) • Polypropylene (1) • PVC / Poly vinyl chloride (1)	**(2x1)**
(b)	**Fleece jackets** • Bulkier/ thicker yarn– higher yarn count • Warmer –traps air in crimps/coils or loops • Softer- fluffed up fibres **Tights** • soft handle- structure remains loose and flexible • more elastic- different shrinkage rates/ good crease recovery/ better fit • warmth–traps air / crimps/coils or loops **Underwear** • Absorbent- increases the moisture transport, • more elastic- different shrinkage rates/ good crease recovery • Softer- gentler against the skin	**(2x1)**

Question Number	Answer	Mark
(c)	• **Thermoplastic** polymers **soften** when **heated /** become **hard** again when **cool/**. • **Melts** when exposed to **high** temperatures / changes shape / shrinks /will stick to the iron. *Do not accept 'high temperatures on it own'*	**(2x1)**
(d)	• Wrapped fibre/ sheath • Core (usually lycra/ elastane) *Must have diagram and labels for full marks.* 	**(2x1)**
	Total Mark	**12**

Question Number	Answer	Mark
2 (a)	• Flatbed machines knit rectangular shaped panels for garments / jersey fabric / Weft knit / flat pieces / 2D fabric. • Circular knitting machines produce single or double jersey fabric / Weft / warp knit. Tubes / circles of fabric / 3D fabric / e.g. suitable example / total garment technology TGM. *Allow 'weft knit & jersey' once only unless qualified*	**(2x1)**
(b)	• Very stretchy (1) so fits over a wide range of shapes and sizes (1) • Great elasticity widthways (1) can retain its shape after wide stretch (1) • Decorative effect (1) distinction between/ looks better than a plain pair (1)	**(2x1)**
(c)(i)	Positive • Stretchy to wear • Comfortable / warm to wear • Very good crease resistance • Machine washable • Less likely to cause an allergic reaction • Hand knitting / pleasurable / no machines	**(2x1)**
(c)(ii)	Negative • Loops interlock horizontally, may ladder / dropped stitch may make a hole, unravels easily / less durable • Is very stretchy and can lose shape easily • Has a wrong and a right side • Iron with care/ thermoplastic fibres • Edges curl in • Looses shape when washed unless dried flat	**(2x2)**

Question Number	Answer	Mark
(d)	• Tubes of fabric made quickly- can be cut open to create flat fabric/ seamless • Can be used for a range of products from socks to t-shirts. The size of machine depends on the product it will make. Jacquard-flatbed • CAM systems are used for continuous production / time / efficiency • CAD/CAM allows versatility in designing & pattern transfer. Coloured yarns can be fed into stitch type at the **amount** of colour needed/ correct **speed.** • Machinery can be programmed to create CAD design / range of type of fabric produced. • TGM / exact measurements needed	**(2x1)**
(e)	• Warm properties • It is hard wearing and the pile does not flatten as easily so wears well. • Soft surface/ nap/ comfort • The cords can be varying widths for the smaller frame. • Appearance • Washable / easy to care for	**(2x1)**
	Total Mark	**14**

Question Number	Answer	Mark
3(a)	**Coating – Teflon, PVC (plastic coating)** • Wipeable • Long-lasting protection for fabric **Stain-resistant** • Minimises damage to bag from leaking purchases. **Water-repellent** • Keep products dry in wet weather **Mercerising** • Stronger	**(2x1)**
(b)	• Neaten top / hem top edge • Press sides / on seam line • Cut off corners diagonally / at the bottom / • Mitred corners • Position in place / pin or tack • Sew 3 sides • Reinforce top corners *Accept any logical order, 1 mark per bullet point. Must end with application to get full 6 marks. Must have both notes and diagrams for full 6 marks. Accept hand or manufactured.*	**(6x1)**
(c)	• Manual tugging (1) check seam strength (1) • Ergonomically designed (1) can fit fingers/hand (1) • Bulky corners(1) corners are square and prominent(1) • Placement of the pocket (1) flat at right angle (1) • Pocket is at marked position (using template to mark the position / visual check) • Topstitching is neat (1) equally spaced Straight seams(1)	**(2x2)**
	Total Mark	**12**

Question Number	Answer	Mark
4(a)	**Preparation of production patterns** • Patterns can be designed and altered quickly to meet client specifications. • Use of virtual modelling for accuracy • Mark notches and sewing guides automatically. • Developed from a basic block • Stored in database • Accurate sizing • Downloading to cutting (CAM) • Time / cost efficient **Grading** • Patterns will be adjusted to the correct sizes without the need of manual drawing • Rapid calculations / accurate sizing • Digitizing **Designing the lay plan** • (Marker making) / utilises CAD to speed up pattern lay. • Minimises waste / works to fit in the pattern pieces in the most efficient way into a set amount of fabric • Correct layout for type of fabric eg. Pile / grain *Do not allow same answers in different sections*	**(2x1)** **(2x1)**
(b)	**Spreading** • Cloth can be automatically wound off a roll and spread using a driven carriage. • Plies spread quickly and efficiently **Combined** • Integrated pattern development with grading, marker making, spreading & labelling before cutting. **Cutting** • Match patterns, checks or stripes & cutting through plies of fabric • No need for physical cutting marker with modern CAD system/ direct download of layplan • Cutting machines are automated • Cutting through plies of fabric up to 100 • Reduces human error / accuracy	**(2x1)**

Question Number	Answer	Mark
(c)	• Companies can display the Kitemark logo that assures customers that the product has been independently tested and is of a high quality. • Fit the safety standards • Status symbol • Manufacturers can charge a higher price for higher quality • Manufacturers can eliminate unseen problems by requesting controlled tests to be performed by the BSI / external sources can be more reliable/ have standardised standards. • Cost savings / reduced amount to faulty goods • CE marked products have passed an international standard and can be sold around Europe in the knowledge that they conform to EC standards *Name of testing form- 1 mark, must explain point for 2 marks*	**(2x1)** **(2x1)**
	Total Mark	**10**

Question Number	Answer	Mark 10
5(a)	**Virtual modelling** • Allow a 'virtual' mannequin to be dressed, designs altered on 2D patterns, and then alterations transferred back to dressed mannequin to check fit & accuracy / presentation to client • Use anthropometrical data to alter the size and fit on a life like body image as the patterns are being designed. • Can make changes easily • Show Texture mapping that creates **photo-realistic** 3D rendering of designs, surfaces, colours textures & patterns / drapes. • Saves time and money on prototyping / materials **2D / 3D modelling can:** • Graphic workstations allow designers to create sketches, illustrations, print and knit & weave designs. • Can make changes easily • Can be seen from different angles • Digital cameras are used to input information. They can show (using plain fabric of similar weight how it performs, style and fit • Cad for store displays • Saves time and money on prototyping	**(2x1)** **(2x1)**
(b)(i)	**ICT software** • PDM software (manages & monitors all the manufacturing information) (1) stock control (1) • Wordprocessing (1) presentation of communication / organisation • E - mail (1) easy communication (1) • Database to produce a master scheduling programme/ access (1) • Excel spreadsheets (1) wages / costs / numbers • Graphs & charts (1) Sales / state of production • Gannt chart (1) timeplan • Single mark for mention of layplan (1) • Grading (1) digitising (1)	**(2x1)** **(2x1)**
(b)(ii)	• Allocating work in the most profitable way/ work orders /deadlines / / production techniques • Providing information to other departments about the progress of orders • Adjusting programme schedules to meet changing situations/ schedules / time restraints / timeplans • Identifying CCP's • Risk assessment • Stock control / equipment • Costs	**(2x1)**
	Total Mark	**10**

Question Number	Answer	Mark
6(a)	'Make through' system • Single operator carries out the main construction / highly skilled • Unique / original • More expensive fabrics / components / products • Less skilled workers do the preparatory and finishing work only. • Personal satisfaction • Can be more intricate designs / products Quick cellular response system • Teams of 8-10 skilled operators share the responsibility for complete batches / assembly line. • Can be produced in batches according to sizes / fast fashion / season • Standard / average sizes / 95 percentile • Economies of scale / bulk buying / standardised fabrics / components / products • More motivating resulting in high quality products. • Simplified designs / products for easier manufacture *Must address both areas for full marks*	**(3x2)**
(b)	• Automated and robotic devices are able to do repetitive tasks / uniformly / more frequent testing is a possible /reliable product outcome • Faster and efficient (if qualified) • Fatigue can work for (24hrs), do not need breaks and reduce human error / numbers to great for human checking. • Safety checks • Consistent pressure/testing/ accuracy • No rights so no union intervention • Electronic sensors screen & monitor different manufacturing processes checking for faults. E.g. broken yarn detectors, tension devices / more immediate pick up of faults. • Programmed QC's allow the production of high quality identical products/ quicker *Do no allow reference to labour costs*	**(3x2)**
	Total Mark	**12**

Question Number	Answer	Mark
7(a)(i)	• Fast changing fashion / Quick turn around from catwalk to high street • Consumers prepared to shop around so manufacturers have to remain competitive/cost/ variety • Quick response systems available • Available to fit a range of standard sizes • Cheap fashion readily available / economies of scale • Wider choice of products available / to a wide audience ready to wear products	**(2x1) + (2x1)**
(ii)	• Promotes the throw away society (1) • People except lower quality (1) eg. Decorations fall off • Can encourage extortion of less developed countries (1) • Loss of individuality	**(2x1)**
(b)	• Isolation from families as jobs concentrated in the cities/ over • crowding as families move to find work in factories. • Environmental issues / must qualify for 2nd point • Fair trade – consumers give backing to better work ethics • Provision of work / better living conditions. • Exploitation by brand names for greater profit. • Cottage industries and traditional craft methods could not compete against mass production so workers went into factories to find jobs • Mass production led to 'sweat shop'/ poor working conditions • Economy / wealth taken away from workers country *Allow subjective views if qualified*	**(2x2)**
	Total Mark	**10**
	Total marks for paper	**80**