SPECIMEN

General Certificate of Secondary Education

A574

Design and Technology:
Textiles Technology

Unit A574: Technical aspects of designing and making

Specimen Paper

Time: 1 hour 15 minutes

Candidates answer on the question paper.
Additional materials:

Candidate Forename		Candidate Surname	

Centre Number						Candidate Number				

INSTRUCTIONS TO CANDIDATES

- Write your name in capital letters, your Centre Number and Candidate Number in the boxes above.
- Use black ink. Pencil may be used for graphs and diagrams only.
- Read each question carefully and make sure you know what you have to do before starting your answer.
- Answer **all** the questions.
- Do not write in the bar codes.
- Do not write outside the box bordering each page.
- Write your answer to each question in the space provided.

INFORMATION FOR CANDIDATES

- The number of marks for each question is given in brackets [ ] at the end of each question or part question.
- Your Quality of Written Communication is assessed in questions marked with an asterisk (*).
- The total number of marks for this paper is **60**.

FOR EXAMINER'S USE	
1	
2	
3	
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TOTAL	

This document consists of **10** printed pages and **2** blank pages.

  [Turn over

Section A

Answer **all** questions.

1 Fig.1 shows a baseball cap with machine embroidered logo.

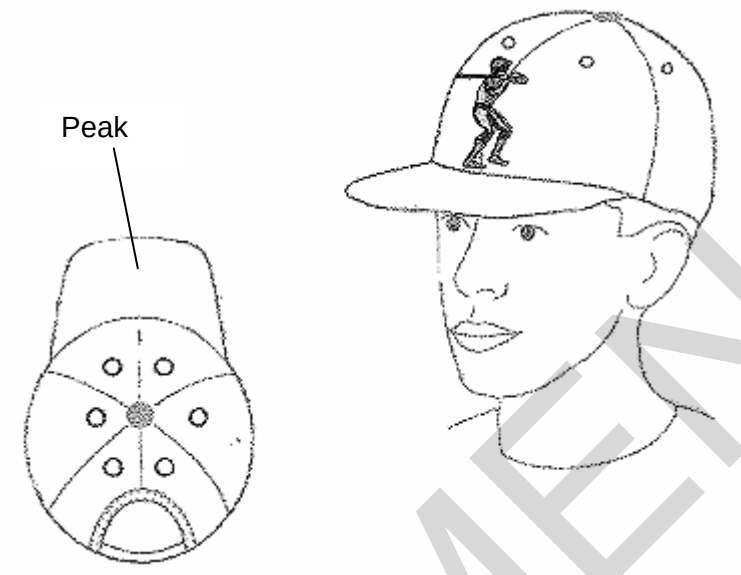


Fig. 1

(a) List **three** pre-manufactured standard components needed to make the baseball cap.

1..... **[1]**

2..... **[1]**

3..... **[1]**

(b) Complete the table below to show how to work **free machine embroidery**.

	Stage	Method	
1	**Preparation of fabric**		**[2]**
2	**Preparation of machine**		**[2]**
3	**Finishing**		**[2]**

(c) Name **one** 'Smart' material and explain how it could be used to create interest on the baseball cap.

'Smart' material..... **[1]**

Use .....

.....

.....

..... **[2]**

[Total: 12]

2 Fig.2 shows a pair of jeans made from denim fabric.

Fig. 2

(a) List **two** reasons why denim is a suitable fabric to make the jeans from.

1..... **[1]**

2..... **[1]**

(b) The jeans have been made using a double stitched seam worked using a sewing machine.

List **four** other tools or pieces of equipment needed to make the jeans.

1..... **[1]**

2..... **[1]**

3..... **[1]**

4..... **[1]**

(c) Explain using notes and diagrams how to work the double stitched seam.

[6]

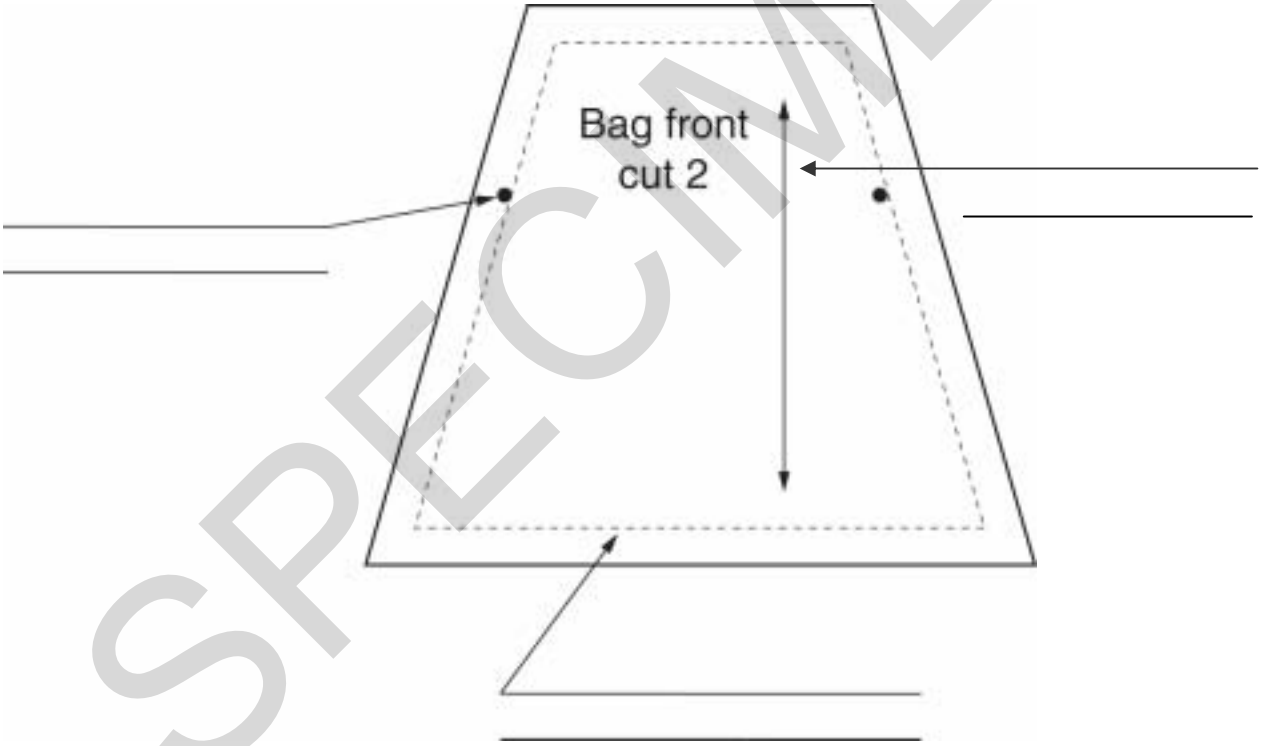
[Total: 12]

3 Fig 3 shows a sports bag.

Fig 3

(a) The diagram below shows one of the pattern pieces used to make the bag.

Complete the labels on the diagram to show the meaning of the pattern symbols.



[3]

(b) The bags are to be manufactured using the **'batch' production system**.

Explain **two** advantages of using the **'batch' production system**.

Advantage 1.....

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..... **[2]**

Advantage 2.....

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..... **[2]**

(c) Evaluate the effectiveness of using ICT to develop the pattern pieces for the bag.

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..... **[5]**

[Total: 12]

Section B

Answer **all** questions

4 A company wishes to include a wall hanging for a child's room in its product range.

The specification for the product is to:

- hold a range of small toys;
- have educational value;
- be environmentally friendly to produce.

(a) In the space below, use sketches and notes to show your initial ideas.

[4]

(b) In the space below, show your final design idea.

Annotate your sketch to show all important design and construction details.

[8]

[Total: 12]

5 Consumers are increasingly aware of the need to protect and preserve the environment.

(a) Describe steps that can be taken to reduce the impact of **fibre production** on the environment.

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..... **[6]**

(b)* Consumers often tire of textile products before they reach the end of their useful life.

Discuss how such textile products can be given a new lease of life.

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..... **[6]**

[Total: 12]

Paper Total [60]

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OXFORD CAMBRIDGE AND RSA EXAMINATIONS

General Certificate of Secondary Education

DESIGN AND TECHNOLOGY

TEXTILES TECHNOLOGY A574

Unit A574: Technical aspects of designing and making

Specimen Mark Scheme

The maximum mark for this paper is **60**.

Section A		
Question Number	**Answer**	**Max Mark**
1(a)	**Fig.1 shows a baseball cap with machine embroidered logo** **List <u>three</u> pre-manufactured standard components needed to make the baseball cap.** Evaluation of the baseball cap required to list any three one mark each: • Thread • Button • Velcro • Eyelets • Interfacing / stiffening for peak • Elastic • Bias binding	**[3]**
1(b)	**Complete the table below to show how to work free machine embroidery.** Any two points from each section, one mark for each: <u>Preparation of fabric:</u> • Stretch tightly in an embroidery ring • Reinforce / use of interfacing • Mark out design using tailor's pencil / chalk • Iron before use	**[2]**
	<u>Preparation of machine:</u> • Thread as usual / correct colour thread • Remove the presser foot / replace with darning foot • Lower / cover feed dogs • Choose suitable stitch to fill design • Put presser foot down when machining	**[2]**
	<u>Finishing</u> • Remove fabric from embroidery ring • Iron the fabric • Cut loose threads • Put presser foot back on machine • Raise feed dogs	**[2]**
1(c)	**Name one 'Smart' material and explain how it could be used to create interest on the baseball cap.** One mark for naming the 'Smart' material, and two for explaining its use. Photochromic threads – change colour in UV light. Can be used in the decorative motif so that parts of it change colour when the cap is worn outside.	

Section A		
Question Number	**Answer**	**Max Mark**
	or Thermochromic dyes – change colour with heat. The design could be printed rather than machined, or an additional motif added, or the fabric dyed using these so that when the temperature increases, areas of the hat change colour.	**[1+2]**
2(a)	**Fig.2 shows a pair of jeans made from denim fabric.** **List <u>two</u> reasons why denim is a suitable fabric to make the jeans from.** Any two points, one mark for each: • Denim is fashionable • It is hardwearing / durable / strong • It washes well • Absorbent, so comfortable to wear • Comes with a variety of different finishes / effects / colours • Natural fibre so few people have allergies to it • Comes with elastane added for increased comfort	**[2]**
2(b)	**The jeans have been made using a double stitched seam worked using a sewing machine.** **List <u>four</u> other tools or pieces of equipment needed to make the jeans.** Any four, one mark for each: • Pins • Needle • Iron • Tape measure • Tailor's pencil / chalk • Unpicker • Scissors	**[4]**
2(c)	**Explain using notes and diagrams how to work the double stitched seam.** Any six points in a logical order, one mark for each. The information can be in the form of a diagram or notes. • Place fabric right sides or wrong sides together • Match edges of fabric / notches • Pin / tack • stitch 1.5cm from the raw edge / on seam or fitting line / make a plain seam first • Press seam open	

Section A		
Question Number	**Answer**	**Max Mark**
	• Trim one side to 5mm • Fold uncut edge in 5mm and fold over cut edge • Pin / tack in place • Machine stitch close to folded edge • Press seam open • Credit a clear drawing of the seam with 1 mark	**[6]**
3(a)	**Fig 3 shows a sports bag.** **The diagram below shows one of the pattern pieces used to make the bag.** **Complete the labels on the diagram to show the meaning of the pattern symbols.** One mark for each correct answer: • Straight grain arrow / grain line • Dot / tailor tack / balance mark • Stitching line / seam line / fitting line	**[3]**
3(b)	**The bags are to be manufactured using the '<u>batch' production system</u>.** **Explain <u>two</u> advantages of using the '<u>batch' production system</u>.** Any two points explained, one mark for a shallow explanation, two if detailed: • Cheap – fabric and components can be bought in bulk saving money • Quality product made – workers repeat tasks so become skilled and faster • Colour changes are easy to effect – little to change tooling / machinery, only need to change colour of thread • Flexible to deal with orders for different colours / quantities / demand • Quick / efficient – team workers, large number of people working together, repetition of task increases speed • More items made at the same time – increases profits • All products the same (size) – improves quality / consistency so customer benefits	**[2+2]**
3(c)	**Evaluate the effectiveness of using ICT to develop the pattern pieces for the bag.** Shows limited understanding of the uses of ICT and how effective ICT could be to develop the pattern pieces. [0-2 marks] Shows some understanding of how effective ICT could be to develop the pattern pieces with some analysis of the issues involved. Basic conclusion may be drawn. [3-4 marks]	

Section A		
Question Number	**Answer**	**Max Mark**
	Shows detailed understanding of how effective ICT could be to develop the pattern pieces and analyses most of the issues involved. Appropriate conclusions are drawn. [5 marks] Evaluation may include reference to: • Quicker / saves time • More accurate / less human error • Can be used to generate a lay-plan • Can be stored on disk, saving place • Can be easily adapted / changed / graded / modified • Can be emailed to clients / other manufacturers • Can be downloaded directly to cutter • Can reduce costs by reducing the force of the work	**[5]**
	Section A Total	**[36]**

Section B		
Question Number	**Answer**	**Max Mark**
4(a)	**A company wishes to include a wall hanging for a child's room in its product range.** **The specification for the product is to:** • **hold a range of small toys;** • **have educational value;** • **be environmentally friendly to produce.** **In the space below, use sketches and notes to show your initial ideas.** Marks allocated as follows: • 1 mark if only one sketch with no accompanying notes • 2 marks for a sketched solution with notes • 3 marks if more than one sketch with notes • 4 marks for a range of solutions with notes relating back to the specification	**[4]**
4(b)	**In the space below, show your final design idea. Annotate your sketch to show all important design and construction details.** A maximum of 8 marks to be allocated as detailed below: • Colour indicated [1] • Measurements given [1] • Fastenings show [up to 2 marks] • Suitable decoration / motif / logo [1] • Pockets in a range of sizes [1] • Fabrics suggested (not fibres) [1] • Construction details given, seams, hems, finishing methods [up to 2 marks] • Decorative techniques given, appliqué, screen printing, machine stitching etc. [up to 2 marks] • Educational value explained [up to 2 marks] • Environmental issues explained [up to 2 marks] • More than one sketch included – detail of a specific part	**[8]**
5(a)	**Consumers are increasingly aware of the need to protect and preserve the environment.** **Describe steps that can be taken to reduce the impact of <u>fibre production</u> on the environment.**	

Section B		
Question Number	**Answer**	**Max Mark**
	Any six points, one mark each: • Use environmentally friendly fertilisers on crops, non-persistent chemicals, or reduce the amount used. • Reduce the amount of pesticides used, or use environmentally friendly ones such as introducing a natural predator. • Soil conservation techniques. • Use computers to control fertilisation and irrigation of soil. • Use pest resistant varieties of plants that do not need treating with pesticides. • When producing man-made fibres use renewable resources, e.g. plastic bottles to make polartec fleece. • Reduce the amount of water, chemicals and energy used in the production system. • Recycle heat and water used. • Use enzymes or other natural substances in finishing processes. • Use biodegradable chemicals. • Regulate and reduce waste products. • Remove dyes and waste products efficiently. • Use renewable sources of energy – wind, solar power. • Recycle unwanted products to make new ones	**[6]**
5(b)	**Consumers often tire of textile products before they reach the end of their useful life.** **Discuss how such textile products can be given a new lease of life.** Level 1 (0-2 marks) Basic discussion, showing limited understanding of how textile products can be given a new lease of life. There will be little or no use of specialist terms. Answers may be ambiguous or disorganised. Errors of grammar, punctuation and spelling may be intrusive. Level 2 (3-4 marks) Adequate discussion, showing some understanding of how textile products can be given a new lease of life. There will be some use of specialist terms, although these may not always be used appropriately. The information will be presented for the most part in a structured format. There may be occasional errors in spelling, grammar and punctuation Level 3 (5-6 marks) Thorough discussion, showing detailed understanding of how textile products can be given a new lease of life. Specialist terms will be used appropriately and correctly. The information will be presented in a structured format. The candidate can demonstrate the accurate use of spelling, punctuation and grammar.	

Section B		
Question Number	**Answer**	**Max Mark**
	Discussion may include: • Potential for giving products to charity shop/organisation – for clothing, household goods and fabric toys. • Pass clothing to younger children if out grown / other families. • Dye it to make it more appealing. • Add decoration to it e.g. appliqué, hand stitching, beading, lace, ribbon. • Cut it up and make it into something new – bedding good for that use. • Use the fabric for patchwork or appliqué. • Re-fashion it – e.g. make a bag from a pair of jeans. • Pass it on to a manufacturer who can reclaim the fibres, e.g. wool. • Take off pre-manufactured components such as buttons and zips which can be re-used for other items. • Use for cleaning cloths.	**[6]**
	Section B Total	**[24]**
	Paper Total	**[60]**

Assessment Objectives Grid (includes QWC)

Question	AO1	AO2	AO3	Total
1(a)	3			**3**
1(b)	6			**6**
1(c)	3			**3**
2(a)	2			**2**
2(b)	4			**4**
2(c)	6			**6**
3(a)	3			**3**
3(b)	4			**4**
3(c)	2		3	**5**
4(a)	4			**4**
4(b)	8			**8**
5(a)	6			**6**
5(b)*			6	**6**
Totals	**51**		**9**	**60**