

Surname	Centre Number	Candidate Number
Other Names		0



GCSE

4131/01



DESIGN AND TECHNOLOGY

UNIT 1

FOCUS AREA: Textile Technology

TUESDAY, 23 MAY 2017 – MORNING

2 hours

For Examiner's use only		
Question	Maximum Mark	Mark Awarded
Section A	1.	15
	2.	10
	3.	10
	4.	25
Section B	5.	10
	6.	15
	7.	20
	8.	15
Total		120

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ADDITIONAL MATERIALS

You will need basic drawing equipment, coloured pencils and a calculator for this examination.

INSTRUCTIONS TO CANDIDATES

Use black ink or black ball-point pen.

Write your name, centre number and candidate number in the spaces at the top of this page.

Answer **all** questions.

Write your answers in the spaces provided in this booklet. Where the space is not sufficient for your answer, continue at the back of the booklet, taking care to number the continuation correctly.

You are reminded of the necessity for good English and orderly presentation in your answers.

INFORMATION FOR CANDIDATES

The number of marks is given in brackets at the end of each question or part-question.

Section A*Marked out of 60**60 minutes*

1. This question is about Product Analysis. It is worth a total of 15 marks.

The product shown below is a ladies' rucksack suitable as a bag for everyday use.

**Product Information:**

- Spacious main compartment with internal pocket with zip-closure.
- Draw cord fastening with concealed magnetic clasp on the flap.
- Padded, adjustable shoulder straps.
- Material: 100% Cotton.
- Spot clean only: Do not bleach, tumble dry, or dry clean.

- (a) (i) Place a **tick (✓)** in the correct box to indicate the meaning for the **two** symbols that would be found on the care label of the rucksack. [2]

Symbol	Meaning	Tick (✓)
	Do not iron	
	Do not tumble dry	
	Do not bleach	
	Do not dry clean	

- (ii) The rucksack should only be 'spot cleaned.' Give **one** detailed reason for this. [2]

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- (b) (i) Describe in detail **two** features that ensure the protection and safety of possessions being stored in the rucksack.

Feature 1:

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..... [2]

Feature 2:

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..... [2]

- (ii) The rucksack has been designed so that it can be comfortably worn on the back when in use. Explain how the designer has achieved this. [4]

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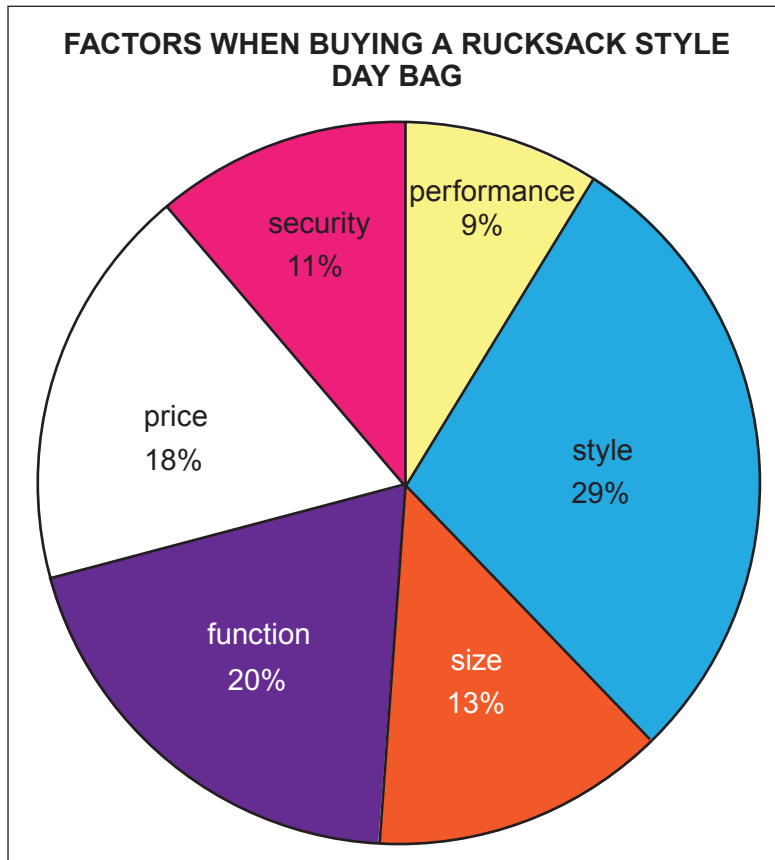
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- (c) The pie chart below shows the important factors customers look for when buying a rucksack style day bag.

The number of people who answered for each factor is shown as a percentage of the total.



- (i) State the most important factor for customers when buying the rucksack. [1]

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- (ii) Ninety people stated that function was the most important factor. Calculate how many people were questioned in total. (Show all your workings.) [2]

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2. This question is about the general issues of Design & Technology. It is worth a total of 10 marks.

(a) State the most suitable R word for the following statements.

3 × [1]

Statement	R word
Make fashion accessories from discarded textile components.
When a zip on a garment breaks replace it with a new one.
Disassemble old clothes and make into new ones.

(b) (i) The table below shows the estimated time each product takes to decompose when added to landfill.

Product 1: Woollen sock - 1 to 5 years	Product 2: Nylon bag - 30 to 40 years
	

Describe in detail why **Product 2** takes significantly longer to decompose than **Product 1**. [3]

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(ii) Mass produced fashionable clothing is often manufactured in countries such as China and sold across the world in countries such as the UK.

Discuss the impact this practice has on the environment.

[4]

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4. This question is about the Design Process and how it is used. It is worth a total of 25 marks.

- (a) (i) State **two** methods of communicating design ideas. [2]

Method 1:

Method 2:

- (ii) Describe **one** way designers can find out customers' opinions when developing new textile products. [2]

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- (iii) Discuss the importance of the link between a design specification and a final evaluation of a new textile product. [3]

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- Use the mood board below as a source of inspiration.

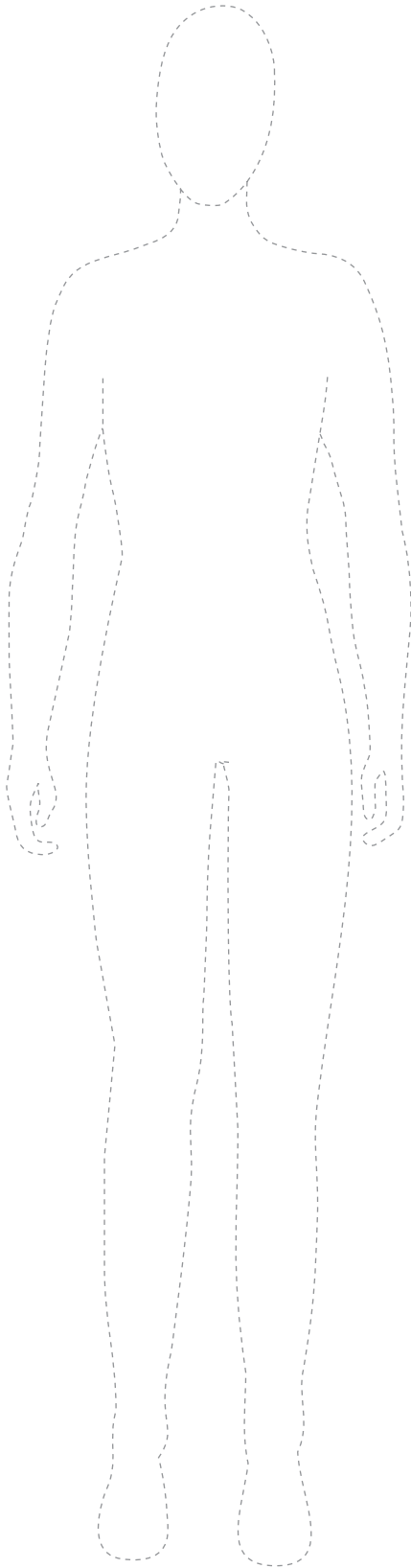


Specification

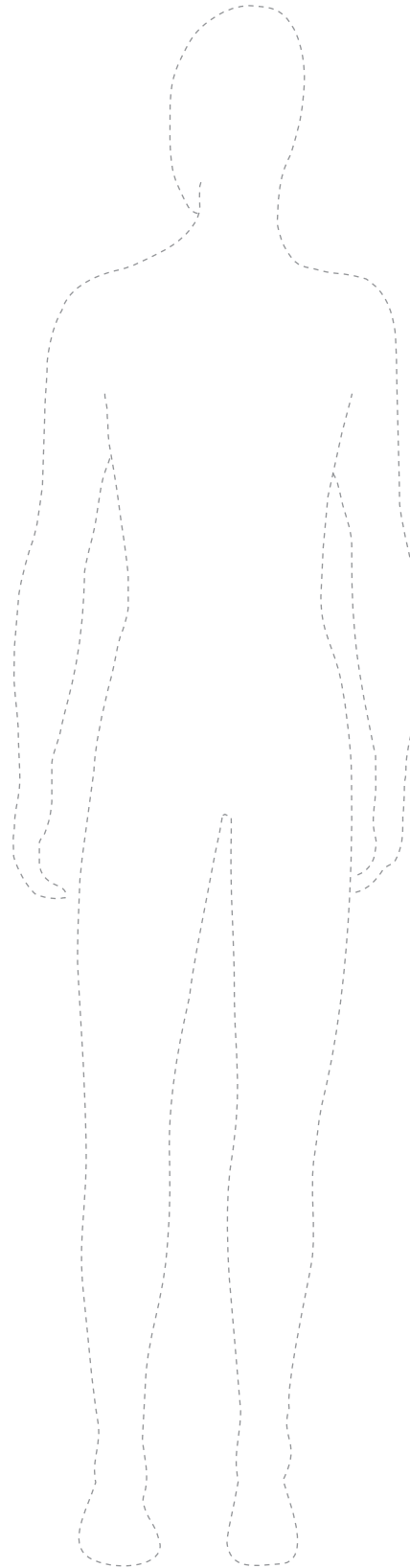
- be suitable for a glamorous end of school party;
- be an inspirational and creative outfit based on the images of the mood board;
- be suitable for either a male **or** female teenager;
- be made from suitable specific named materials;
- include named style details which are correctly drawn.

(i)	designing a glamorous outfit for a teenager suitable for the occasion;	[2]
(ii)	an inspirational and creative design based on the mood board;	[4]
(iii)	the creative use of any colours;	[3]
(iv)	labelling two suitable materials;	[2]
(v)	labelling three specific style details which are correctly drawn;	[3]
(vi)	quality of communication.	[4]

Front view



Back view



Section B*Marked out of 60 60 minutes*

5. This question is about Commercial Manufacturing Processes. It is worth a total of 10 marks.

- (a) (i) Select the correct name for **each** of the following pieces of industrial equipment from the list below. 3 × [1]

Embroidery machine**Laser cutter****Band knife****Overlocker**

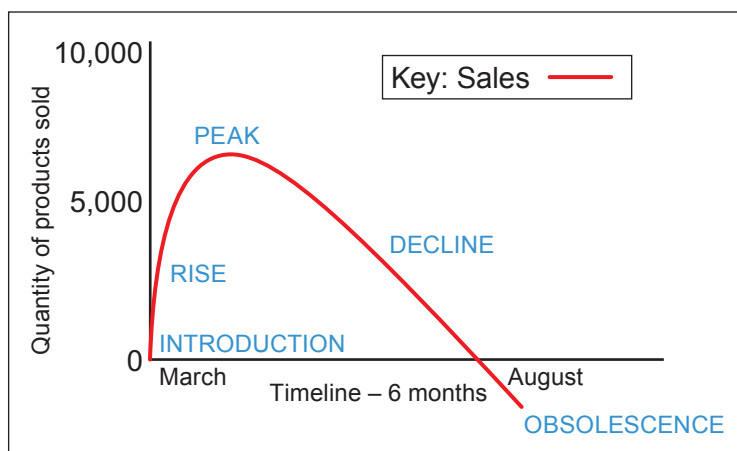
		
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- (ii) State **two** advantages of using industrial machinery that is computer controlled. [2]

Advantage 1:

Advantage 2:

- (b) The graph below shows the typical sales of a new textile product known as a fashion Fad.



- (i) Explain what the term 'obsolescence' means.

[2]

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- (ii) Describe how manufacturers can make effective use of sales graphs like the one shown.

[3]

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6. This question is about Materials and Components. It is worth a total of 15 marks.

- (a) (i) Place a **tick (✓)** in the table below to indicate whether the statements are true or false. 3 × [1]

Statement	True	False
A fibre is a fine hair like structure, which can be short or long.		
Nylon is a cellulose based fibre.		
Regenerated fibres are a mixture of natural and chemical elements.		

- (ii) The pictures below show the source of some natural fibres. State the name of the fibre derived from each and state **one** performance property of the named fibre. 4 × [1]

Fibre source	Name of fibre	Performance property



- (b) (i) The image below shows a component that is often seen on textile products. **Underline** the correct name for the component. [1]



parachute buckle

parachute clip

- (ii) Describe how they work and where they could be used on textile products. [2]

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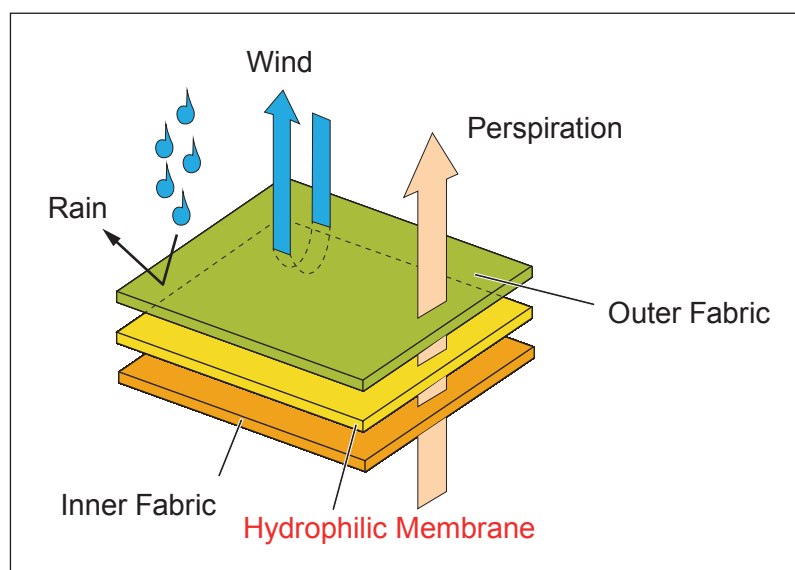
- (c) (i) Name a product that would be made from a coated fabric and explain why the fabric has been coated. [2]

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- (ii) The diagram below represents a laminated fabric with a hydrophilic membrane in the middle. This type of material is often used in performance clothing, footwear and sportswear.



Explain how clothing made using this system keeps the wearer more comfortable. [3]

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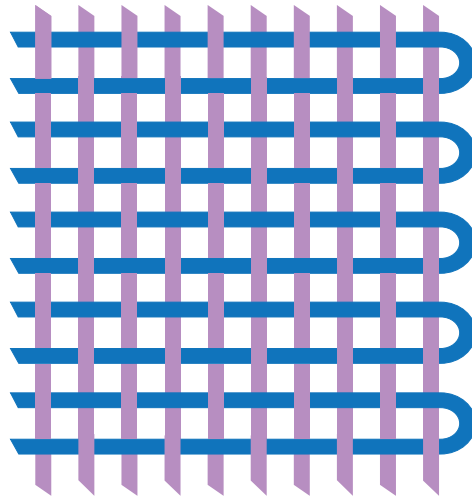
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7. This question is about Tools, Equipment and Making. It is worth a total of 20 marks.

- (a) (i) The diagram below represents a plain weave material.
Draw arrows to link each of the named parts to where it would be found on a woven material. 3 × [1]



Selvedge edge

Weft yarns

Warp yarns

- (ii) State where the 'bias' would be found on a piece of woven material. [1]

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- (iii) Explain why some pattern pieces need to be laid out and cut on the 'bias' when making clothing. [2]

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- (iv) State the names or meanings of the pattern markings shown below. 3 × [1]

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- (v) Explain why it is important to follow pattern language when laying out templates on materials when making clothing. [2]

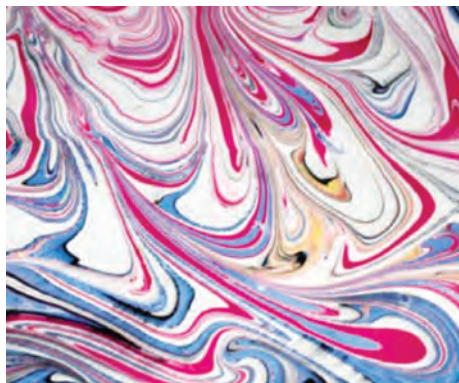
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- (b) The pictures below show two examples of techniques that can be used to add colour to textile materials. Briefly explain how **each** is created.

Marbling



Explanation:

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..... [2]

Silk painting



Explanation:

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8. This question is about ICT, CAD/CAM, Systems and Processes. It is worth a total of 15 marks.

(a) (i) Complete the following abbreviated terms.

CAM: Computer A M [1]

ICT: Information C T [1]

(ii) Describe **three** examples where CAD can be used in the design and development of new textile fabrics.

Example 1: [1]

Example 2: [1]

Example 3: [1]

(b) (i) Name the most suitable software package that could be used to record the results of a survey. [1]

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(ii) Describe the benefits of using specialist software to analyse the results of a survey. [2]

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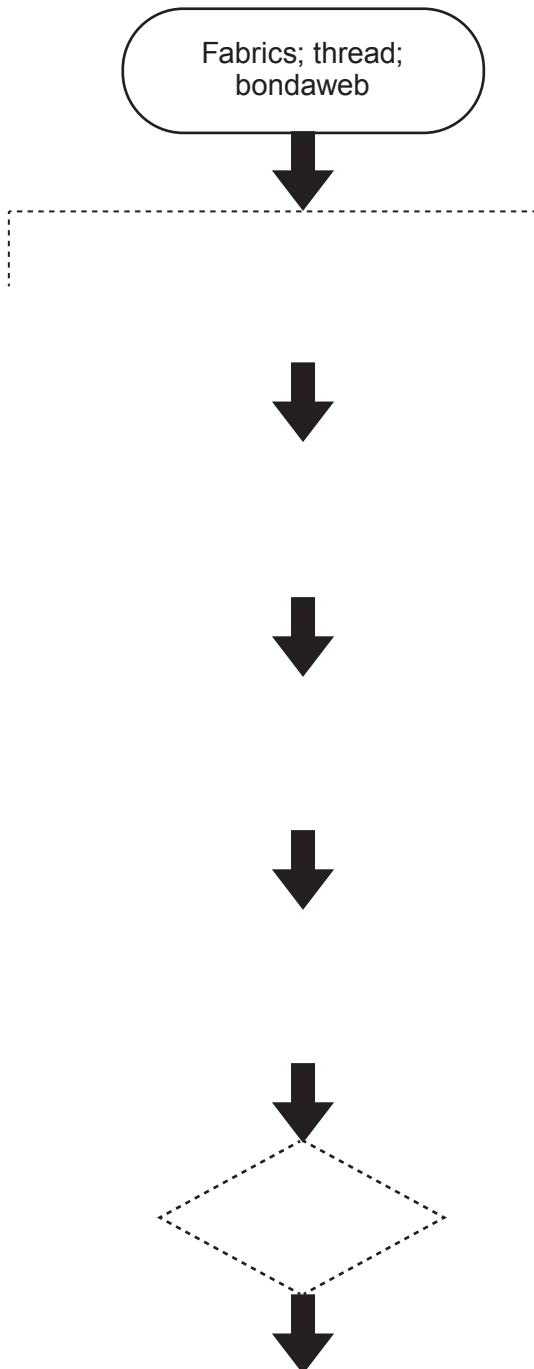
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(c) Complete the flowchart for the process of appliqué below by selecting an appropriate instruction from the list provided on the right. Marks will be awarded for:

- (i) placing the sequence of instructions in the correct order inside a correctly drawn flowchart symbol; [6]
- (ii) correctly placing a feedback loop. [1]

(Part of the chart has been started for you)



Instructions

Cut the shape. Iron it onto the second piece of material.

Check the size and quality of the stitching.

Set the correct size satin stitch and stitch around the shape.

Draw the shape onto the strengthened fabric.

Completed appliqué.

Iron the bondaweb to the back of the top layer of the fabric.

END OF PAPER

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