

Surname	Centre Number	Candidate Number
Other Names		0



GCSE

4131/01

DESIGN & TECHNOLOGY

UNIT 1

FOCUS AREA: TEXTILES TECHNOLOGY

A.M. FRIDAY, 25 May 2012

2 hours

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Question 1	
Question 2	
Question 3	
Question 4	
Question 5	
Question 6	
Question 7	
Question 8	
TOTAL MARK	

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 the answer at the back of the book, taking care to number the continuation correctly.

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 junior sleeping bag with pillow.



Product information:

- The outer shell of the sleeping bag is made from polyester.
- It has a butterfly design on the outside and polka dot print polyester cotton lining.
- Between the outer shell and lining is a double layer of polyester fibre fill.
- The size is 165cms × 70cms.
- It has a pillow attached to the top.
- It has a zip fastener down one side and across the bottom edge.
- It folds up into its own stuff sac (shown above).
- Retail price: £12.00.

- (a) **Underline** the most suitable scale of production to make this sleeping bag. [1]

One-off production

Batch production

- (b) Give **one** reason for including a zip fastener down the side of the sleeping bag. [1]

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(c) Explain the purpose of the stuff sac. [2]

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(d) A design specification was produced before designing the sleeping bag.
Write a detailed specification point for **each** of the following headings.

(i) The cost of the sleeping bag. [2]

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(ii) The aesthetic appeal of the sleeping bag. [2]

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(iii) The target market for the sleeping bag. [2]

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(e) Three different layers of material have been used to make the sleeping bag.
Explain, in detail, how they will ensure the warmth of the user. [3]

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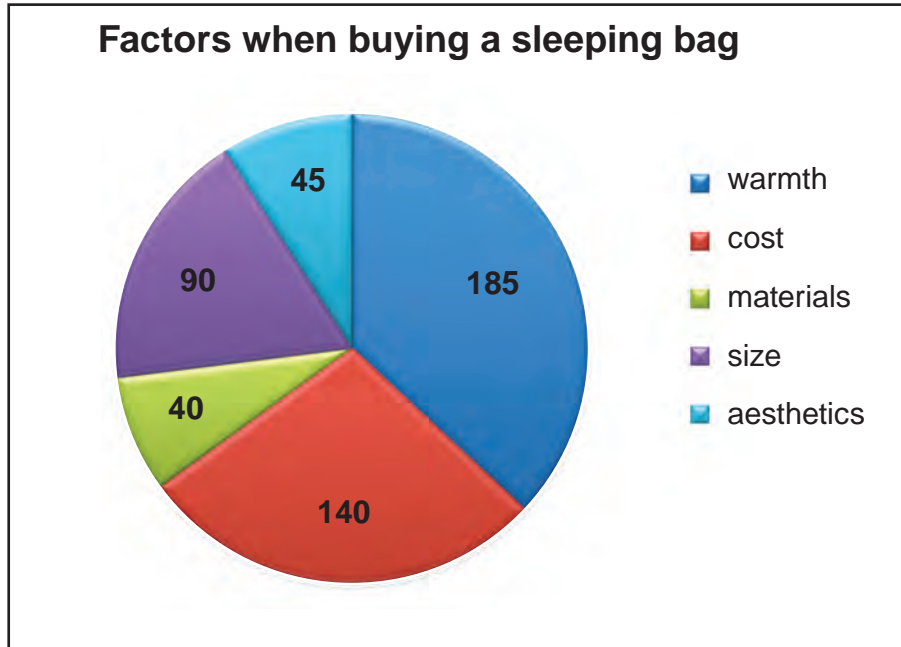
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- (f) The pie chart below shows the important factors customers look for when buying a sleeping bag.

The number of people who answered for each factor is shown on the chart.



Calculate as a percentage, the number of people who thought warmth was the most important factor. [2]

Show all your workings.

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

(a) (i) Underline the correct name for the following symbol. [1]



Toy safety / Kite mark

(ii) Give the meaning of the symbol shown below. [2]



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(b) Complete the following statements by inserting the correct 'R' words from the list below. [2]

rethink reduce reuse

(i) When designing new products I could my design to make it more environmentally friendly.

(ii) I should parts or components from unwanted textiles in new products where possible.

(c) The T-shirt shown below has been made from 100% organic cotton making it more environmentally friendly.

Give **one** reason why the production of organic cotton is considered better for the environment. [2]



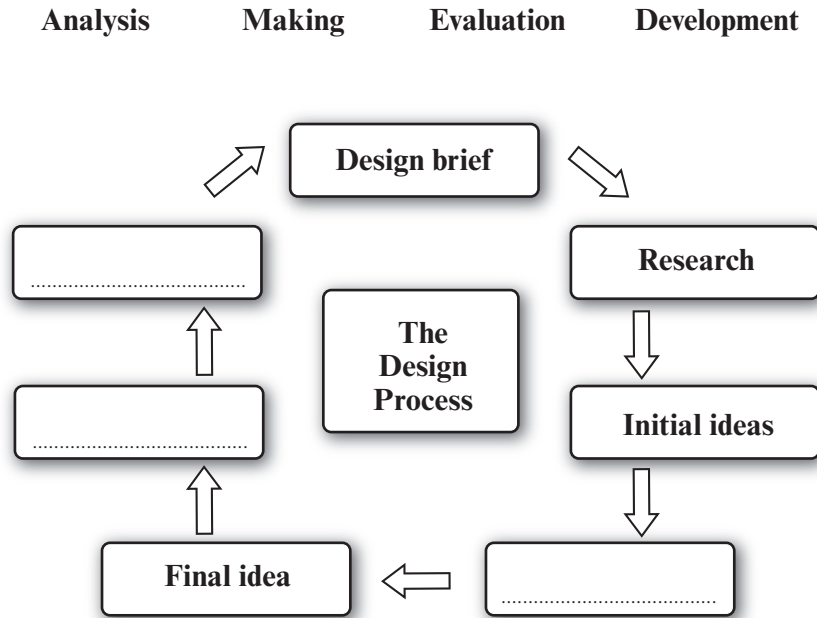
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(d) Explain in detail why it is important to consider the whole of a product's life cycle when developing new textile products. [3]

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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) Complete the diagram below by selecting the correct activities from the list provided and placing them in the correct order, to show the stages of the design process. [3]



(b) (i) A design specification is a list of factors that the product must have in order to be successful.

Explain what would be included for the following factor. [2]

Factor: Function

Explanation:

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(ii) Describe how a disassembly activity can be helpful to a designer before designing and making a new product. [2]

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- (c) Young children love to dress up in fancy dress costumes. Study the mood board below and use it as inspiration to design a fancy dress costume for a young child.



Sketch the front and back views of your design on the opposite page using the silhouettes provided.

Specification

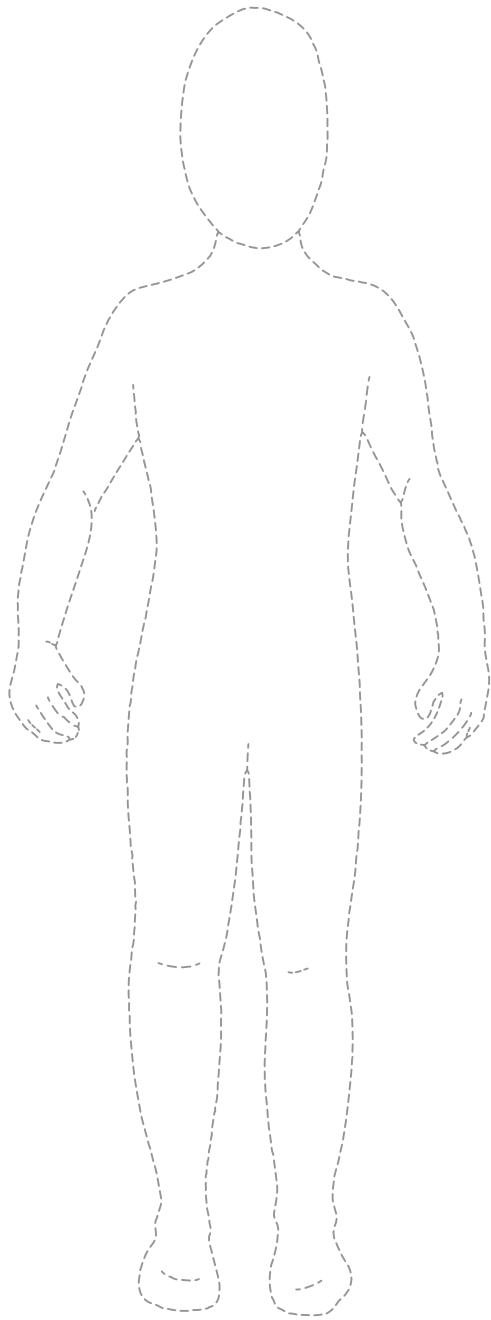
Your design must:

- be a suitable fancy dress costume for a young child;
- be inspired by the images of the mood board;
- include the creative use of colour;
- include named style details;
- include suitable named materials.

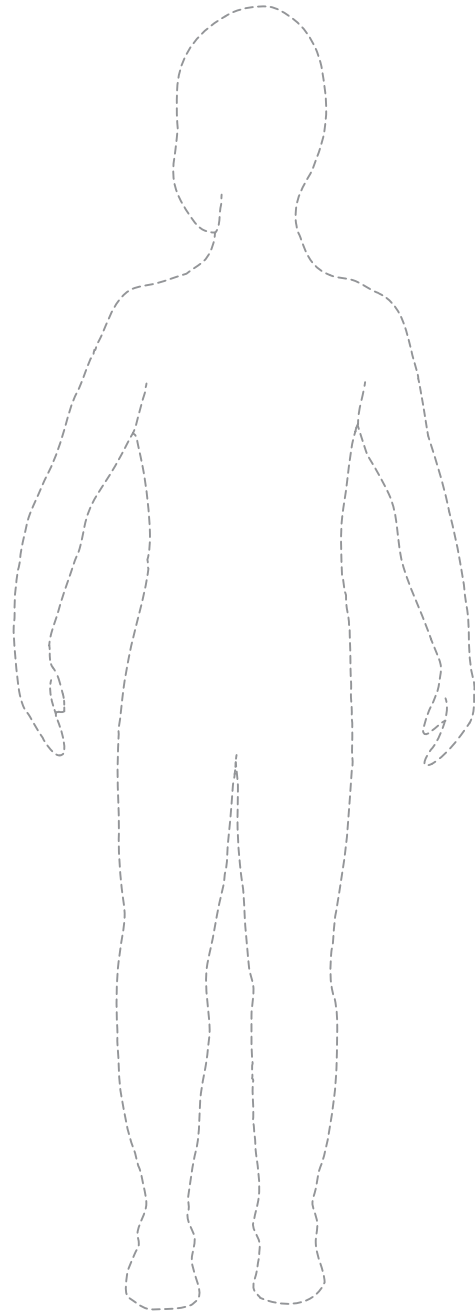
Marks will be awarded for:

- | | |
|---|-----|
| (i) designing a fancy dress costume for a young child; | [1] |
| (ii) an inspirational design based on the images of the mood board; | [4] |
| (iii) the creative use of colour, based on the colours of the mood board; | [2] |
| (iv) labelling three specific style details; | [3] |
| (v) labelling two suitable materials; | [2] |
| (vi) quality of communication. | [4] |

Front view



Back view



(d) For **one** of the materials used in your design, explain the specific quality or properties it has that makes it a suitable choice for the costume. [2]

Name of material used in your design:

Explanation:

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Section B

Marked out of 60 60 minutes

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

(a) **Underline** the correct name of the cutting tool shown below which is used in the textile industry. [1]



Band Saw / Band Knife

(b) (i) State the most suitable scale of production for **each** of the products shown. [2]

<p>.....</p>	<p>.....</p>

- (ii) List **three** factors that influence the choice of the scale of production when manufacturing textile products. [3]

Factor 1:

Factor 2:

Factor 3:

- (c) Describe the advantages of mass production systems like the one shown in the picture below when compared to one-off production. [4]



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

(a) (i) Textile materials are made using different methods of construction.

Using the words from the list below, insert the correct method of construction for the materials used to make the products shown below. [3]

Woven Knitted Bonded Laminated

		
<p>Construction method:</p>	<p>Construction method:</p>	<p>Construction method:</p>

(ii) State **one** of the standard widths of material used to manufacture textile products. [1]

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(iii) Explain why the construction of material is important when choosing materials for a new product. [2]

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(b) **Underline** the correct phrase or word to complete the sentences below. [2]

(i) Nylon is **crease resistant / cool to wear / absorbent.**

(ii) Materials treated with chlorine are **stain resistant / shrink resistant / anti-static.**

(c) Flame proofing is a finish that improves the functional quality of a material. State how this finish is applied and explain how it improves functionality. [3]

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(d) Advances in technology have led to the development of microfibres.

(i) Define the term microfibre.

[1]

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(ii) Explain the impact microfibres have had within the textile industry.

[3]

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

(a) (i) The sewing machine is an important piece of equipment used in textiles.

Using the words from the list below, label the diagram to show the correct name for **each** of the sewing machine parts. [3]

- Bobbin Winder Foot Pedal Thread Spool Bobbin Presser Foot**

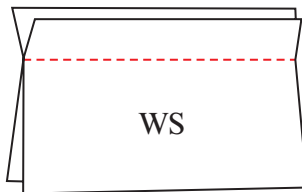
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3.

(ii) State the correct name for the seam shown below.

[1]



Name:

(iii) The stitching shown below is faulty.



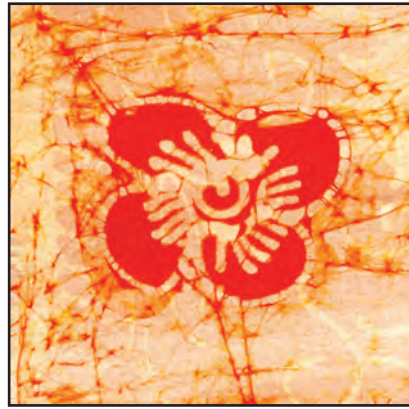
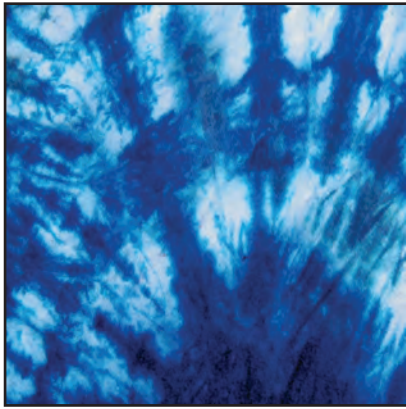
Explain how you would identify and correct the fault.

[2]

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- (b) (i) The pictures below show resist methods of dyeing materials.
Name the **two** methods shown below.

[2]



Method I: Method II:

- (ii) Explain how the resist method of dyeing a piece of material works.

[2]

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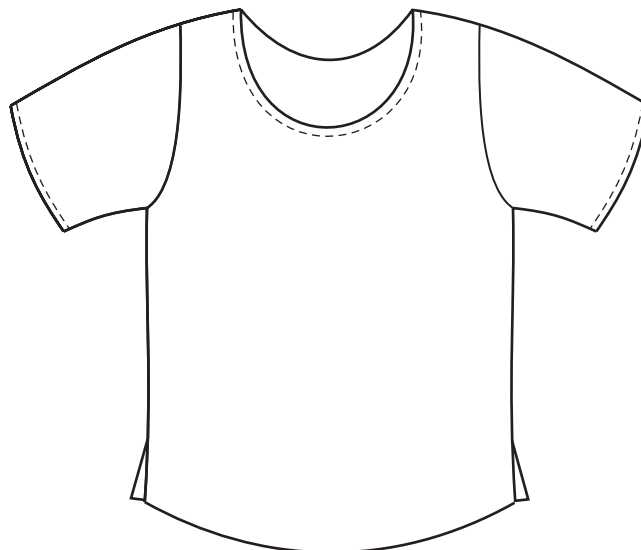
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- (c) The drawing below is of a ladies woven cotton top.

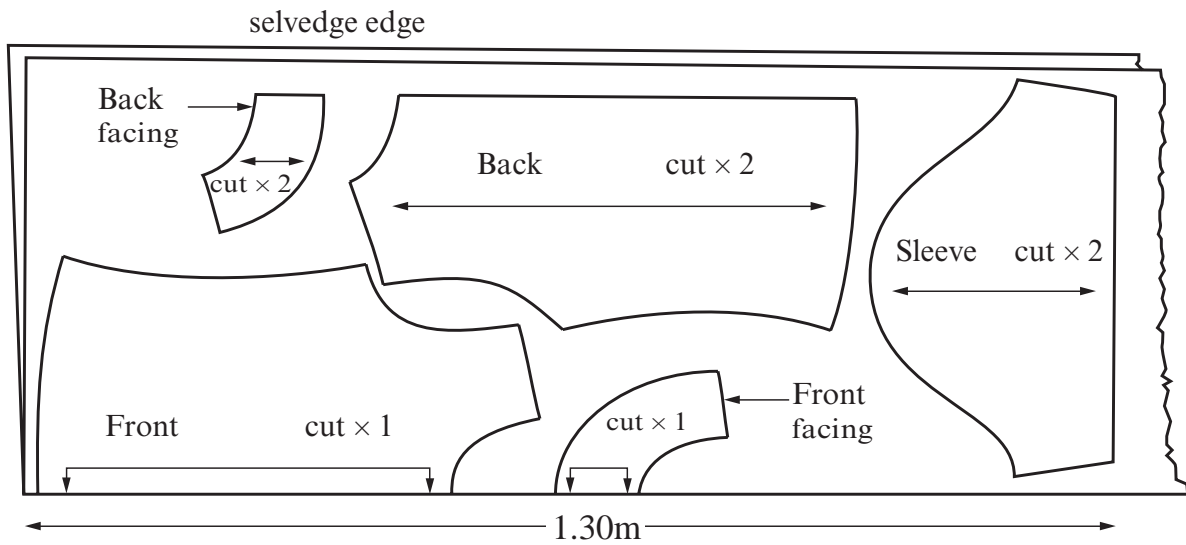
- (i) Darts are used to give more shape to clothing.
On the diagram below draw **two** darts that could be used together to give a more fitted shape to the top.

[2]

The darts should be on one side of the diagram.



(ii) The diagram below shows the lay plan of the templates used to make the top.

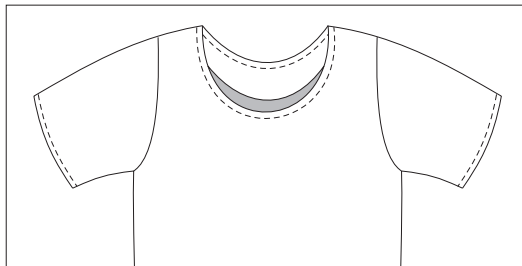


The cost of the material is £5.49 a metre.
 Calculate the cost of the material to make the top.
 Show all your workings.

[2]

(iii) A facing has been used to finish the neckline.
 Using notes and/or sketches, explain how you would attach a facing to a round neck and stitch it in place like the one shown in the picture below.

[6]



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

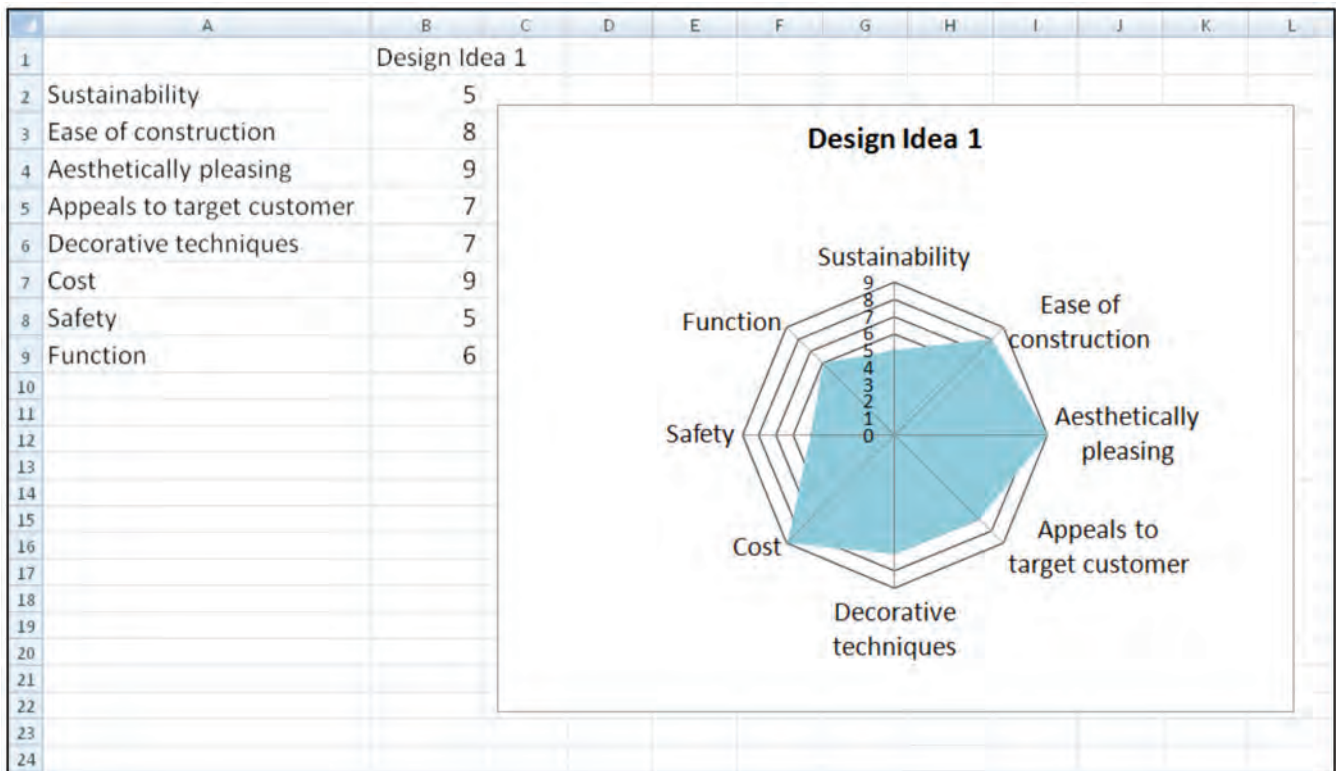
(a) (i) State the full meaning of CAD. [1]

Computer A D

(ii) Name **one** piece of CAM equipment which you could use in school. [1]

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(iii) The picture below shows how ICT has been used to evaluate a new idea. Explain the advantages of using ICT in this way. [2]



Explanation:

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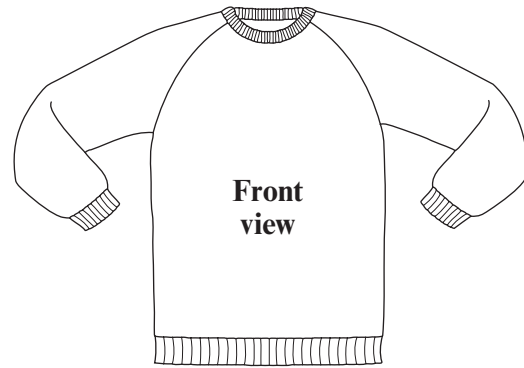
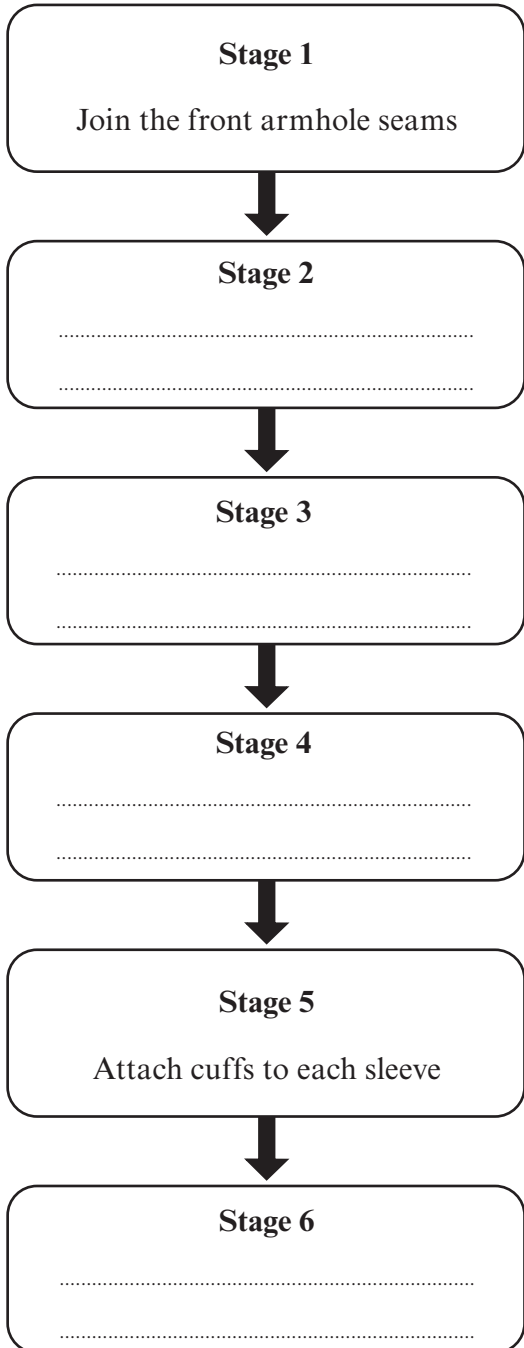
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(b) (i) Production flowcharts show the stages needed to manufacture textile products.

Complete the flowchart shown below by placing **each** manufacturing stage for the sweatshirt in the correct sequence. [4]

Two stages have been completed for you.



Manufacturing Stages

- Attach the lower band to front and back
- Attach the neckband
- Join the back armhole seams
- Join the underarm and side seams

(ii) Explain the importance of quality control in the manufacture of textile products. [3]

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(c) Computer Integrated Manufacture (CIM) is an essential part of the textile manufacturing industry.

Describe the benefits of CIM in the textile manufacturing industry. [4]

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