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|-------------|---------------|------------------|
| Surname     | Centre Number | Candidate Number |
| Other Names |               | 0                |

**GCSE**

4131/01

**DESIGN & TECHNOLOGY****UNIT 1****FOCUS AREA: Textile Technology**

P.M. FRIDAY, 23 May 2014

2 hours

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

4131  
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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 book, 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 floral printed toiletry bag.



Product information:

- The outer material is PVC coated cotton.
- The lining is 100% proofed nylon.
- The dimensions are: length 30 cms × height 18 cms × width 10 cms.
- It has two inside pockets and a zipped outside pocket.
- It has a zip fastener to close the bag.
- It has a piped edge inserted into the outside seams.

- (a) Place a **tick (✓)** in the table below to identify the most suitable scale of production for the bag. [1]

| <i>Batch production</i> | <i>One-off production</i> |
|-------------------------|---------------------------|
|                         |                           |

- (b) (i) Give **one** reason why double stitched seams have been used on the toiletry bag. [1]

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- (ii) The seams on the inside of the toiletry bag have a binding finish, as shown in the picture below.



Give **one** reason for using this type of seam finish. [1]

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- (iii) Give **two** reasons for using a piped edge on the toiletry bag. [2]

Reason 1: .....

Reason 2: .....

- (c) (i) The main function of the toiletry bag is to hold a wide range of toiletries in a compact way. Explain how this specification point has been met. [2]

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- (ii) The toiletry bag must be aesthetically pleasing to a wide range of females. Explain how this specification point has been met. [2]

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- (d) The materials used to make the toiletry bag have specific properties that make them suitable for this product. Describe the advantages of the materials used for this product. [3]

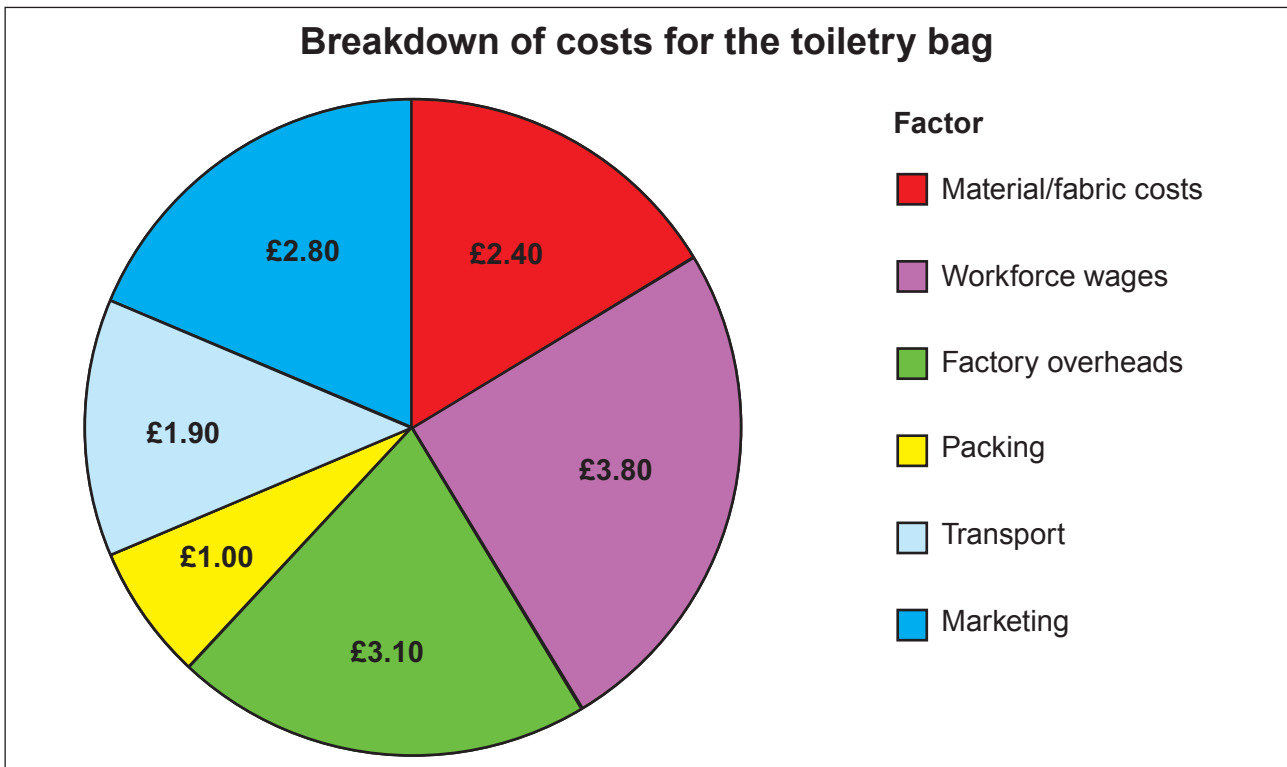
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- (e) Study the diagram below which shows the breakdown of costs for the manufacturer of the toiletry bag.



- (i) State which is the highest cost factor for making the toiletry bag. [1]

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- (ii) Calculate the marketing costs as a percentage (%) of the total cost. (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) **Underline** the name of the product where you are most likely to find the following labels. [3]

|  |   |  |
|--|---|--|
| <p>(i)</p>  | <p>(ii)</p>  | <p>(iii)</p>  |
| <p>sewing machine / cushion</p>  | <p>electric iron / child's toy</p>  | <p>armchairs / ladies' dresses</p>   |

(b) Before making a new product designers think about the 6 Rs. Describe how you could apply Rethink and Recycle when making a textile product.

(i) Rethink: .....  
 ..... [2]

(ii) Recycle: .....  
 ..... [2]

(c) Energy is required to manufacture textile products. Explain the impact this has on the environment. [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 table below by matching the correct words provided to the statements that describe two stages of the design process. [2]

**Manufacturing specification      Design brief      Flowchart      Design specification**

|            |  |
|------------|--|
| (i) .....  | A list of stages needed to make a product    |
| (ii) ..... | A statement outlining a problem to be solved |

(b) (i) Describe the importance of carrying out detailed research before designing and making a new product. [2]

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(ii) Describe the advantages of on-going evaluation when designing and making a textile product. [3]

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- (c) Study the mood board below and use it as inspiration to design an adaptable three piece summer outfit for teenagers which could be easily packed into a suitcase for a summer holiday.



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

Specification

**The design must:**

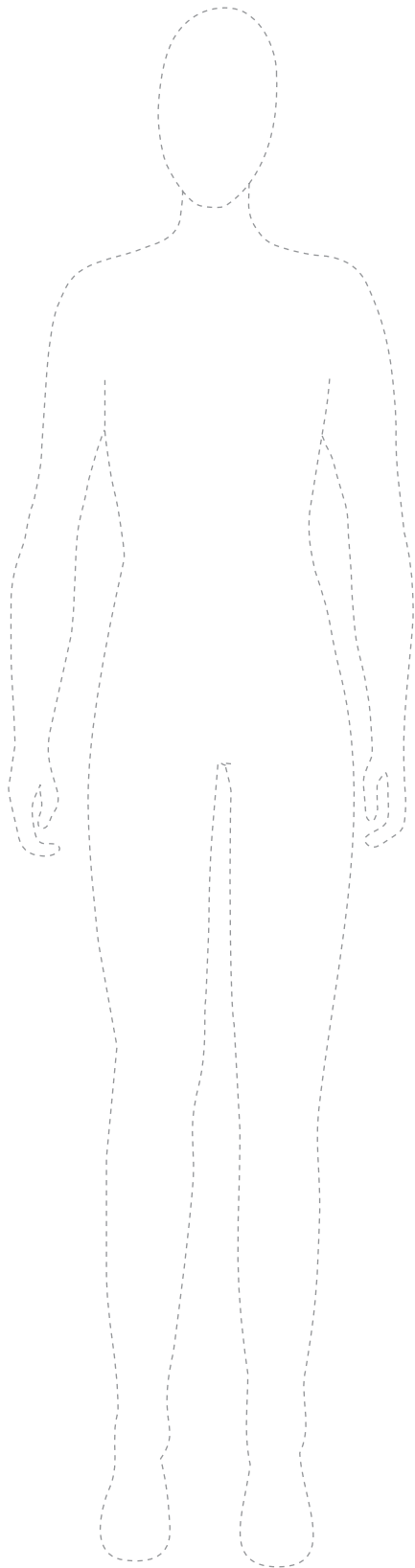
- be an adaptable three piece summer outfit that would appeal to teenagers;
- be suitable for summer travel;
- be inspired by the images and colours of the mood board;
- include specific named materials;
- include named style details.

**Marks will be awarded for:**

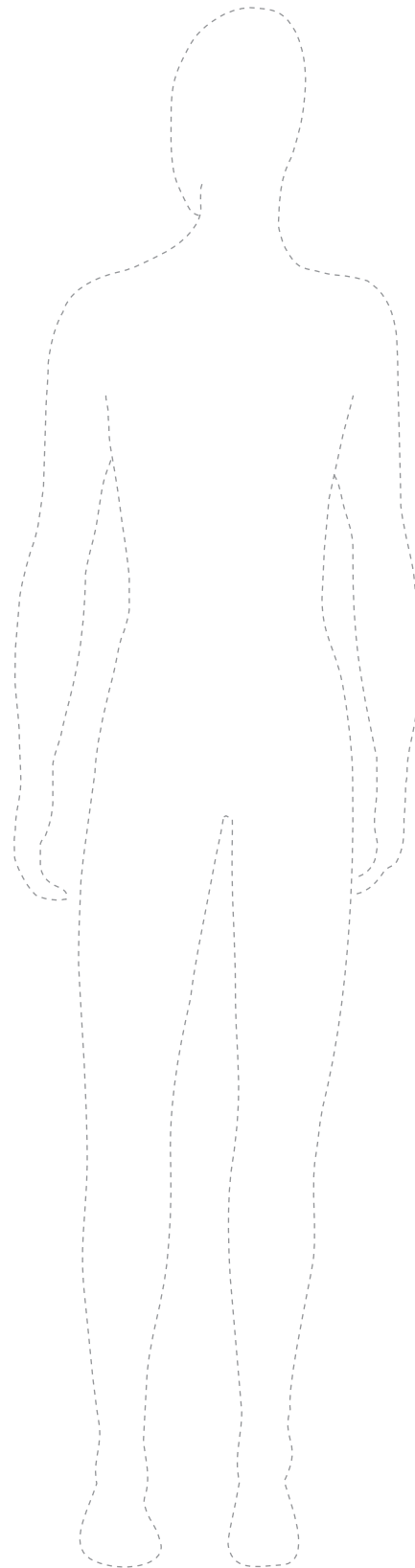
- |  |     |
|--|-----|
| (i) a design that would appeal to teenagers;   | [1] |
| (ii) an adaptable three piece outfit suitable for summer travel;                         | [4] |
| (iii) an inspirational design that makes creative and imaginative use of the mood board; | [4] |
| (iv) labelling <b>two</b> specific and suitable materials;                               | [2] |
| (v) labelling <b>three</b> specific named style details;                                 | [3] |
| (vi) quality of communication.   | [4] |



Front View



Back View



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4131  
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**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) The picture below shows a length of material being made on an industrial machine. **Underline** the correct name for the machine. [1]



Knitting machine / Industrial loom

(b) (i) Complete the table below by adding a description of **each** of the production methods used in the textile industry.

| <b><i>Production method</i></b> | <b><i>Description</i></b>            |
|---------------------------------|--------------------------------------|
| Mass production                 | .....<br>.....<br>.....<br>..... [2] |
| Batch production                | .....<br>.....<br>.....<br>..... [2] |

(ii) Describe **one** advantage of one-off production for the customer. [2]

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(c) A manufacturing specification contains all the technical details needed to manufacture a product.

Describe **one** piece of information that would be found on a manufacturing specification and explain its importance to the manufacturer. [3]

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



- (a) (i) Textile fibres are natural, synthetic or regenerated.  
Place a **tick (✓)** in the table below to show the correct fibre source for **each** of the materials listed. [4]

|           | <i>Natural</i> | <i>Synthetic</i> | <i>Regenerated</i> |
|-----------|----------------|------------------|--------------------|
| Acetate   |                |                  |                    |
| Polyester |                |                  |                    |
| Jute      |                |                  |                    |
| Elastane  |                |                  |                    |

- (ii) Give **one** reason why fibres are blended when making yarns. [1]
- .....

- (iii) Name **one** fibre blend that uses both natural and synthetic fibres and is commonly used throughout textiles. [1]
- .....

- (b) The table below shows **two** textile products and the name of the material **each** is made from.  
State a property of **each** material and give a reason why this property makes the material suitable for that product.

| <i>Product</i>  | <i>Explanation of named property</i>  |
|---|---|
| (i)<br>  | Material: Nylon<br>Property: ..... [1]<br>Reason: ..... [1]<br>..... [1]    |
| (ii)<br> | Material: Neoprene<br>Property: ..... [1]<br>Reason: ..... [1]<br>..... [1] |

(c) (i) Explain what is meant by the term 'geotextiles'.

[2]

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(ii) Describe the benefits of micro-encapsulation when used in medical textiles.

[3]

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

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

| <i>Statement</i>   | <i>True</i> | <i>False</i> |
|--|-------------|--------------|
| Pinking shears can be used to finish seams.              |             |              |
| Top stitching is used on the inside of textile products. |             |              |
| A French seam can only be used on straight seams.        |             |              |

- (ii) Give **one** reason for changing the presser foot on the sewing machine when making textile products. [1]

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- (iii) Explain why the machine needle might need to be changed when using different types of materials. [2]

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- (b) Draw the symbols found on commercial patterns for the following terms. [3]

| <i>Description</i>               | <i>Symbol</i> |
|----------------------------------|---------------|
| Dart                             |               |
| Place to folded edge of material |               |
| Multi-size cutting lines         |               |

- (c) A young fashion student is looking at ways of customising a plain white T-shirt like the one shown below.



- (i) Describe a process or technique that the student could use to change the overall colour of the T-shirt. [2]

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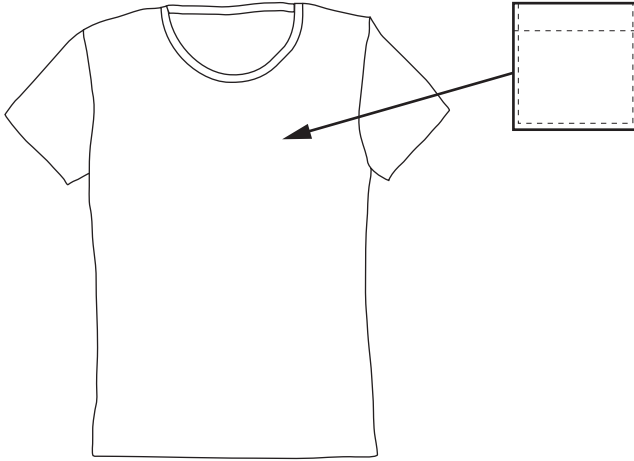
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- (ii) Suggest **one** method of adding decoration to the neckline. [1]

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- (iii) The student wants to add a patch pocket to the T-shirt like the one shown below. Using notes and sketches, explain how you would make and attach the pocket to the T-shirt. [4]

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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 the following abbreviated terms. [2]

**CAM:** Computer A ..... M .....

**CIM:** Computer I ..... M .....

(ii) Information Communication Technology (ICT) can be used throughout the development of new ideas.

List **three** ways ICT can be used to model new ideas. [3]

I .....

II .....

III .....

(iii) Explain how the internet has made it easier for designers to research themes for new collections. [2]

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- (b) Study the pictures below which have been produced using a specialist CAD package. Describe the advantages to designers of using specialist CAD software when presenting new ideas to clients. [3]



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- (c) (i) Explain in detail the impact laser cutters have had when designing and making textile products. [3]

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- (ii) Describe the limitations associated with the use of a laser cutter when making textile products. [2]

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**END OF PAPER**

