

**Please check the examination details below before entering your candidate information**

<b>Candidate surname</b>
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<b>Other names</b>
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<b>Centre Number</b>					
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**Pearson Edexcel  
Level 1/Level 2 GCSE (9-1)**

**Friday 24 May 2019**

**Afternoon (Time: 1 hour 45 minutes  
plus your additional time allowance)**

**Paper Reference 1DT0/1E**

**Design and Technology  
Component 1: Textiles**

**Y59666A**

<b>YOU MUST HAVE:</b> <b>Calculator, ruler, HB pencil,</b> <b>protractor, compass</b> <b>A diagram booklet</b>	<b>Total Marks</b>
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## **INSTRUCTIONS**

- **Use BLACK ink, ball-point pen or your usual method.**
- **FILL IN THE BOXES** at the top of the previous page with your name, centre number and candidate number.
- **Answer ALL questions.**
- **Answer the questions in the spaces provided**  
**– there may be more space than you need.**
- **Calculators may be used.**
- **Any diagrams may NOT be accurately drawn, unless otherwise indicated.**

- You must **SHOW ALL YOUR WORKING OUT** with **YOUR ANSWER CLEARLY IDENTIFIED** at the **END OF YOUR SOLUTION**.

## **INFORMATION**

- The total mark for this paper is 100.
- The marks for **EACH** question are shown in brackets  
– use this as a guide as to how much time to spend on each question.

## **ADVICE**

- **Read each question carefully before you start to answer it.**
- **Try to answer every question.**
- **Check your answers if you have time at the end.**

**SECTION A – CORE**

**ANSWER ALL QUESTIONS.**

**WRITE YOUR ANSWERS IN THE SPACES PROVIDED.**

- 1 (a) The materials that products are made from are chosen because of their properties.**

**Figure 1 in the diagram booklet shows a table of products.**

**For each of the products shown, give a property of the material it is made from that makes the material suitable for the product.**

**The first one has been done for you.**

- 1 (b) Figure 2 in the diagram booklet shows a table with the number of plastic bags given away in England.**

**Calculate the percentage reduction in the number of plastic bags given away between 2014 and 2015.**

**Give your answer to the nearest whole number. (2)**

**Percentage reduction \_\_\_\_\_**

**1 (c) In 2015 charging for carrier bags was introduced resulting in a reduction in the number of bags being manufactured.**

**Explain ONE negative effect of this reduction for the manufacturer. (2)**

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**(TOTAL FOR QUESTION 1 = 8 MARKS)**



- 2 Figure 3 in the diagram booklet shows a drawing of a fabric play cube for young children.**

**The fabric play cube has a side length of 60 mm.**

- (a) Name the communication technique that has been used to produce the drawing shown in Figure 3. (1)**

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**2 (b) A prototype play cube was made from calico.**

**Explain ONE reason for using calico for the prototype play cube.**

**(2)**

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- 1 (c) The pattern for the prototype play cube was made from a single net.**

**Draw a net for the play cube on the grid provided in the diagram booklet.**

**Do not include any seam allowance.**

**Use a thick dashed line \_ \_ \_ \_ to show where the net would be folded. (4)**

**1 (d) Tracing paper was used to design the prototype play cube.**

**Explain ONE reason why designers use tracing paper. (2)**

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**(TOTAL FOR QUESTION 2 = 9 MARKS)**

- 3 Figure 4 in the diagram booklet shows part of a solar powered garden light.**

**The outer case is made from acrylic.**

- (a) Give ONE property of acrylic that makes it an appropriate material from which to make the outer case. (1)**
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- 3 (b) The solar powered garden light is held off the ground by a stainless steel support.**

**Explain ONE reason for using stainless steel for the support. (2)**

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- 3 (c) The manufacturer of the solar powered garden light wants to reduce its carbon footprint.**

**Explain ONE way new and emerging technologies could be used to reduce the manufacturer's carbon footprint. (2)**

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- 3 (d) The solar cell used in the solar powered garden light costs  $\frac{1}{12}$ th of the total cost of the product.**

**Calculate the cost of the solar cell if each light costs £4.97 to make.**

**Give your answer to two significant figures. (2)**

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- 3 (e) The manufacturer of the solar powered garden light employs different groups of people including apprentices.**

**Explain TWO ways that the use of new and emerging technologies could affect the apprentices. (4)**

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**(TOTAL FOR QUESTION 3 = 11 MARKS)**

- 4 Figure 5 in the diagram booklet shows a drawing of a jewellery box made from mahogany.**

**The electronic component shown in Figure 6 in the diagram booklet is used in the jewellery box.**

- (a)(i) Name the electronic component shown in Figure 6. (1)**
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**4 (a)(ii)**

**The jewellery box uses a programmable component to turn on a musical tune when the lid is opened, that stays on until the lid is closed.**

**Figure 7 in the diagram booklet shows a partly completed flowchart for the programmable component.**

**Correctly label the DECISION OUTPUTS and add the remaining LINES and ARROWS on the flowchart to show how the programmable component:**

- turns on the musical tune when the lid is opened**
- turns off the musical tune when the lid is closed. (3)**

- 4 (b) Analyse the information in Figure 8 about the sources of mahogany.**

**Figure 8**

<b>SOURCES OF MAHOGANY</b>	<b>PERCENTAGE GROWN IN EACH AREA (%)</b>
<b>Native forests</b>	<b>7</b>
<b>National parks</b>	<b>30</b>
<b>Other</b>	<b>63</b>

**Complete the bar chart in the diagram booklet to show the percentage grown in each area.**

**The first one has been done for you.**

**(2)**

- 4 (c) A film company is considering launching a range of musical jewellery boxes based on its animated characters.**

**Discuss the different design strategies the company could use to generate initial ideas and to avoid design fixation. (6)**

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**(TOTAL FOR QUESTION 4 = 12 MARKS)**

**TOTAL FOR SECTION A = 40 MARKS**

**SECTION B – TEXTILES**

**ANSWER ALL QUESTIONS.**

**WRITE YOUR ANSWERS IN THE SPACES PROVIDED.**

- 5 Figure 9 in the diagram booklet shows a design solution for an armchair organiser together with some additional information.**

**continued on the following page**

- 5 (a) The armchair organiser needs to be improved to include the following specification points.**

**The armchair organiser must:**

- be able to be securely fitted to chair arms that are 200 mm to 240 mm wide**
- provide a method to hold a coffee cup without the risk of it being tipped over**
- store two remote controls so they are both separate and cannot fall out of the organiser.**

**Use notes and sketches, on the outline in the diagram booklet, to show how the armchair organiser could be modified to include these specification points.**

**30**

**You will be marked on how you apply your understanding of design and technology, not your graphical skills.**

**(6)**

**5 (b) Figure 10 in the diagram booklet shows a felt covered retail display unit for a pair of glasses.**

**Explain TWO ways that the retail display unit meets, or fails to meet, the criteria of providing a secure way to display the glasses. (4)**

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**(TOTAL FOR QUESTION 5 = 10 MARKS)**



**6 Figure 11 in the diagram booklet shows a book made from upcycled fabrics.**

**(a) Explain TWO advantages of manufacturing the book from upcycled fabrics. (4)**

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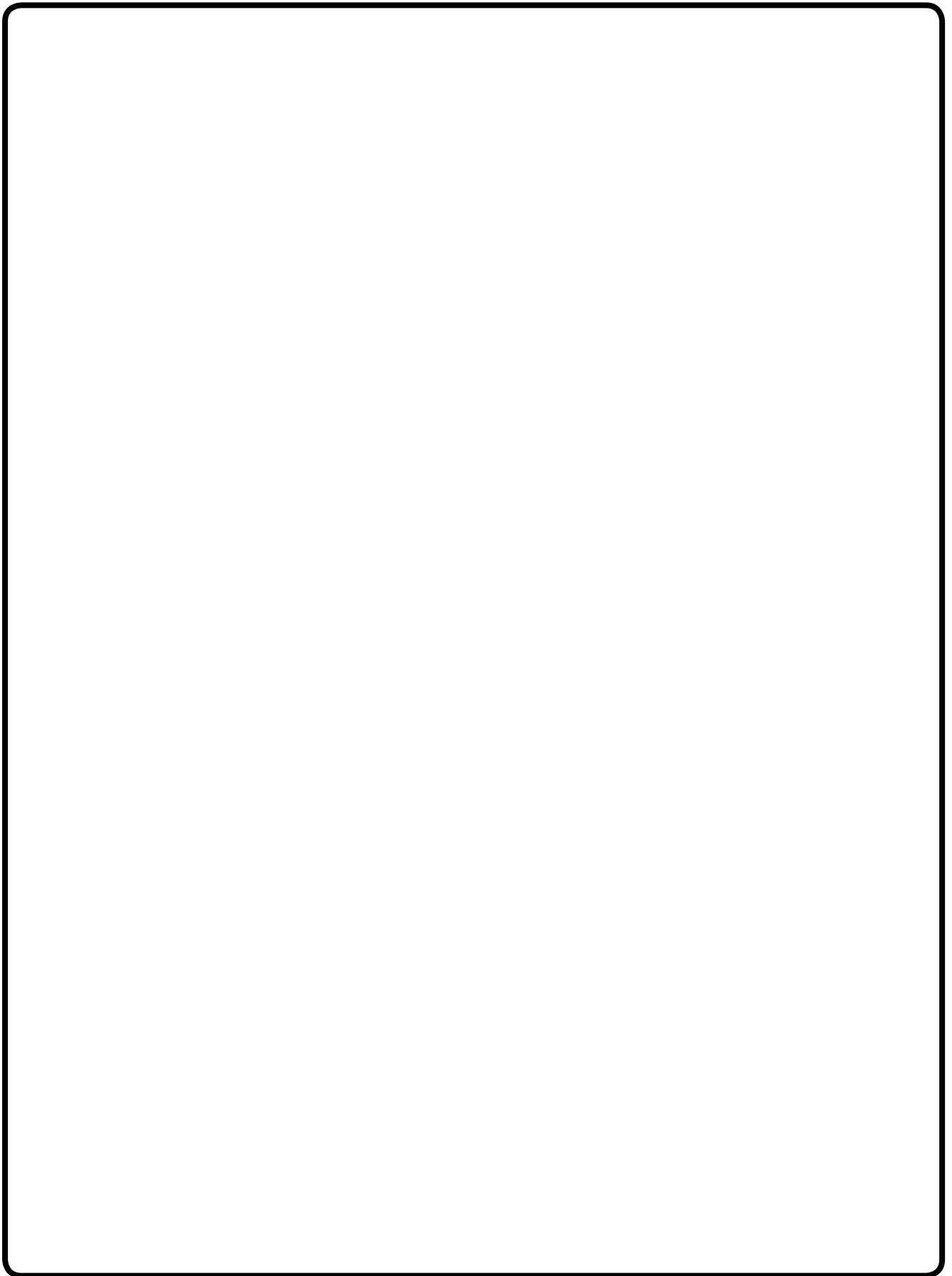
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- 6 (b) Figure 12 in the diagram booklet shows two layers of fabric that will be used to construct a page for the book.**

**Use notes and sketches, in the space on the following page, to show how the layers would be joined to make a page with no raw edges.**

**You will be marked on how you apply your understanding of design and technology, not your graphical skills. (4)**



**6 (c) Figure 13 in the diagram booklet shows the inside of the book.**

**It has been decorated with different features.**

**Explain ONE reason for using different fabrics for the tree and the pond. (2)**

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**6 (d) Figure 14 in the diagram booklet shows the tree for the book.**

**The trees are to be manufactured from fleece fabric in a batch of 1000.**

**Name TWO different techniques that could be used to batch produce the tree.**

**Explain ONE advantage of using each technique. (6)**

**Technique 1**

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## Explanation

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**Technique 2**

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**Explanation**

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**(TOTAL FOR QUESTION 6 = 16 MARKS)**



**7 Figure 15 in the diagram booklet shows some outdoor bunting that is made from a woven nylon fabric.**

**(a) Name ONE surface finish or surface treatment that could be used to apply the detail to each face. (1)**

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**7 (b) The figures are attached to stock-sized 25 mm wide bias binding.**

**Explain TWO reasons for using stock-sized bias binding. (4)**

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- 7 (c) Figure 16 in the diagram booklet shows the dimensions for the body of the bunting figures.**

**Calculate the maximum number of whole bunting figure bodies that could be cut from a length of fabric measuring 1810 cm long by 40 cm wide.**

**Ignore the width of any cuts. (5)**

**Answer \_\_\_\_\_ whole bodies**

**7 (d) Explain TWO properties of woven nylon fabric that make it an appropriate choice of material for the figures on the outdoor bunting. (6)**

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**(TOTAL FOR QUESTION 7 = 16 MARKS)**

**8 Figure 17 in the diagram booklet shows a kitchen apron made from a woven twill cotton fabric.**

**(a)(i) Explain ONE reason for applying a fireproofing treatment to the kitchen apron. (2)**

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**8 (a)(ii)**

**Explain ONE working property of a woven twill fabric that makes it suitable for the kitchen apron. (3)**

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**8 (b) The apron is also dyed.**

**Explain TWO negative effects on the environment of dyeing cotton. (4)**

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- 8 (c) The kitchen aprons are manufactured in Europe and transported worldwide.**

**Figure 18 in the diagram booklet shows a table with information about the kitchen aprons.**

**Analyse the information in Figure 18.**

**Evaluate the kitchen aprons with reference to their social footprint including:**

- **trend forecasting**
- **impact of farming on communities**
- **ease and difficulty of recycling and disposal. (9)**

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**(TOTAL FOR QUESTION 8 = 18 MARKS)**

**TOTAL FOR SECTION B = 60 MARKS**

**TOTAL FOR PAPER = 100 MARKS**