



General Certificate of Secondary Education  
2012

## Engineering

### Paper 2

### Assessment Unit 3

*assessing*

### Engineering Technology

[GEE32]

FRIDAY 18 MAY, MORNING

StudentBounty.com

|                      |  |
|----------------------|--|
| 71                   |  |
| Candidate Number     |  |
| <input type="text"/> |  |



#### TIME

1 hour.

#### INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.

Write your answers in the spaces provided in this question paper.

Answer **all** parts of the one question in this paper.

The paper should be answered in relation to the Pre-Release Material.

You will be provided with a new copy of the Pre-Release Material.

You should **not** bring any of the material previously issued, or any notes made into this examination.

#### INFORMATION FOR CANDIDATES

The total mark for this paper is 40.

Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each part question.

Quality of written communication is assessed in **(i)** and **(j)**.

| For Examiner's use only |       |
|-------------------------|-------|
| Question Number         | Marks |
| (a)                     |       |
| (b)                     |       |
| (c)                     |       |
| (d)                     |       |
| (e)                     |       |
| (f)                     |       |
| (g)                     |       |
| (h)                     |       |
| (i)                     |       |
| (j)                     |       |
| <b>Total Marks</b>      |       |



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Answer **all** parts of the question.

| Examiner Only |        |
|---------------|--------|
| Marks         | Remark |
|               |        |

1 (a) Give **one** example of how CAD drawings have helped shorten “Lead Times” in the manufacture of an ironing board.  
 \_\_\_\_\_  
 \_\_\_\_\_ [2]

(b) A product specification is a document which is drawn up before a product is manufactured. It details areas such as materials, storage, size, function, colour etc.  
 List **two** specification points which would have been drawn up before the manufacture of an ironing board.

**Specification point 1**  
 \_\_\_\_\_  
 \_\_\_\_\_ [1]

**Specification point 2**  
 \_\_\_\_\_  
 \_\_\_\_\_ [1]

(c) Outline the engineering process which is used to manufacture the metal tubing for the legs of the ironing board.  
 \_\_\_\_\_  
 \_\_\_\_\_ [1]

(d) Outline an appropriate surface finish which could be applied to an ironing board.  
 \_\_\_\_\_  
 \_\_\_\_\_ [1]

- (e) (i) Modern technology is used throughout the manufacture of an ironing board.

Outline **two** advantages of using such technology for the manufacturer.

**Advantage 1**

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[2]

**Advantage 2**

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[2]

- (ii) Outline **one** area in the manufacture of an ironing board where robotics is used. (Your answer must be different to that stated in part 1(c)).

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[2]

- (f) The top of the ironing board consists of a series of holes to allow the steam to disappear when ironing. These are manufactured by processes called pressing and punching.

Give **one** reason why this is an appropriate way of manufacturing this part of an ironing board.

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[2]

- (g) Give **two** reasons why it is important to carry out quality control checks when manufacturing ironing boards.

**Reason 1**

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[2]

**Reason 2**

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[2]

| Examiner Only |        |
|---------------|--------|
| Marks         | Remark |
|               |        |

(h) Explain why injection moulding is a suitable process for the production of the feet of an ironing board.

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[2]

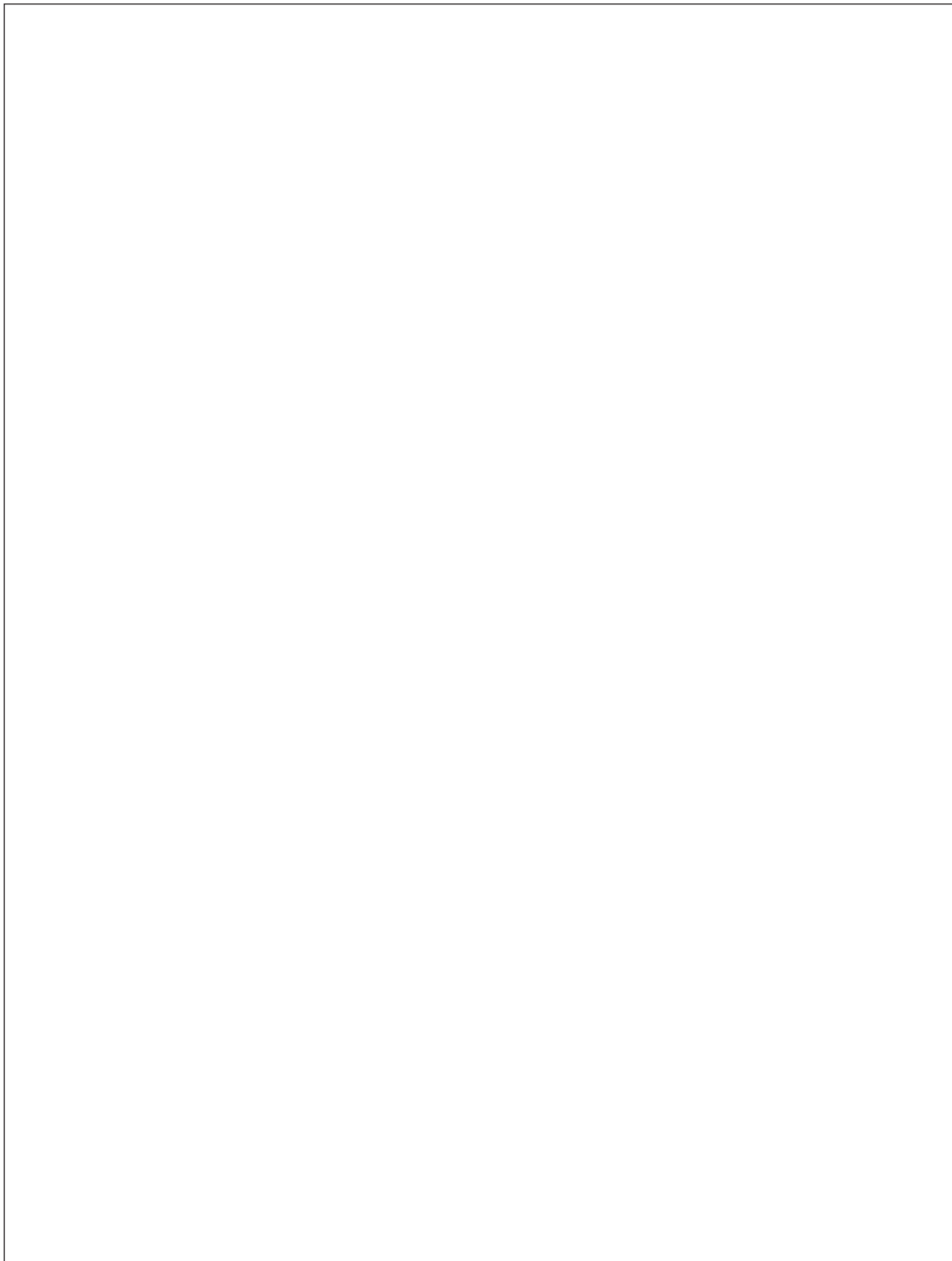
| Examiner Only |        |
|---------------|--------|
| Marks         | Remark |
|               |        |

- (i) The top flat part of the ironing board is manufactured by processes known as pressing and punching.

In the box below using annotated sketches and the correct terminology explain these processes.

Marks will be awarded for

- Detail contained in sketches [4]
- Quality of sketches [3]
- Detailed notes [3]



[10]

| Examiner Only |        |
|---------------|--------|
| Marks         | Remark |
|               |        |

(j) In the box below using notes and sketches explain how the legs pivot in the centre. Your answer should include the mechanical fixing which allows both legs to remain together.

Marks will be awarded for

- Suitability of chosen method [4]
- Quality of sketches [3]
- Detailed notes [3]

[10]

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**THIS IS THE END OF THE QUESTION PAPER**

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| Examiner Only |        |
|---------------|--------|
| Marks         | Remark |
|               |        |

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## Engineering

PRE-RELEASE MATERIAL

Paper 2

Assessment Unit 3

*assessing*

Engineering Technology

[GEE32]

FRIDAY 18 MAY, MORNING

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You must use **this** clean copy of the pre-release material in the examination and **not** your own annotated copy.



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## Engineering Technology Pre-Release Material

The image below shows an ironing board.



© Getty Images / Zedcor Wholly Owned / PhotoObjects.net / Thinkstock

### Description

An ironing board such as the one shown above is generally a large, flat piece of metal that is covered with a heat safe padding on which clothing may be ironed safely. The standard board has two primary parts which include:

- a bed for ironing
- collapsible legs that are hinged or slip into the board for easy storage

The legs are generally tubular with padded feet so that they do not damage floors. No matter what the configuration, every ironing board made of metal must have a pad and cover so that the metal bed of the ironing board does not become too hot from the iron. Most ironing boards are sold with a foam pad and decorative cover.

Features include:

- Adjustable height
- Folds away
- 4 anti slip PVC feet
- 122 × 43 cm ironing surface
- Frame material – steel

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