



General Certificate of Secondary Education
2014

Centre Number

--	--	--	--	--

Candidate Number

--	--	--	--

Technology and Design

Unit 3: Product Design

[GTD31]

ML

TUESDAY 3 JUNE, AFTERNOON

TIME

1 hour, plus your additional time allowance.

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.

Questions which require drawing or sketching should be completed using an HB pencil. All other questions must be completed in blue or black ink.

Do not write with a gel pen.

Answer **all eight** questions.

INFORMATION FOR CANDIDATES

The total mark for this paper is 80.

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

Answer **all** questions

- 1 (a) Blow moulding and injection moulding are two common industrial manufacturing processes used to produce plastic components.

(i) Which process is a **reforming** process?

_____ [1]

(ii) Which process is a **deforming** process?

_____ [1]

- (b) (i) Outline **three** key features or stages of the **blow moulding** process.

1. _____

2. _____

3. _____

_____ [3]

- (ii) Outline **three** key features or stages of the **injection moulding** process.

1. _____

2. _____

3. _____

_____ [3]

Examiner Only

Marks Remark

Total Question 1

2 Manufacturing practices involve the use of machines and power tools.

State **two** applications/uses of each of the following machines.

Circular Saw

1. _____ [1]

2. _____ [1]

Milling Machine

1. _____ [1]

2. _____ [1]

Planer

1. _____ [1]

2. _____ [1]

Lathe

1. _____ [1]

2. _____ [1]

Examiner Only

Marks Remark

Total Question 2

[Turn over

Examiner Only	
Marks	Remark



(a) State why metals are alloyed.

[1]

(b) State **three** properties of aluminium alloy which make it a suitable material for the ladder.

1. _____

2. _____

3. _____ [3]

(c) State the advantage of buying a ladder with the Kitemark or CE markings.

_____ [2]

(d) Outline **two** design features of the ladder which are based on anthropometric data.

1. _____

2. _____ [2]

Examiner Only

Marks Remark

Total Question 3

[Turn over

4 Intellectual Property falls into a number of areas which include copyright, trademarks and patents.

(a) What is meant by Intellectual Property?

 _____ [2]

(b) Individuals or companies often apply for copyright, trademarks or patents. Give a brief explanation of each of the following:

- Copyright
- Trademarks
- Patents

Copyright _____

 _____ [2]

Trademarks _____

 _____ [2]

Patents _____

 _____ [2]

Examiner Only

Marks Remark

Total Question 4

BLANK PAGE
DO NOT WRITE ON THIS PAGE
(Questions continue overleaf)

Examiner Only	
Marks	Remark

1. _____
2. _____

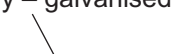
[2]

Give **two** features of this industrial practice.

1. _____

2. _____ [2]

body – galvanised steel



A diagram of a wheelbarrow. A label 'body – galvanised steel' with a line pointing to the main container of the wheelbarrow.

[1]

- (ii) What shape/form of material should the company order for manufacturing the body?

_____ [1]

- (iii) Name a manufacturing process which would be used to shape the body.

_____ [2]

Examiner Only

Marks Remark

Total Question 5

[Turn over

Examiner Only	
Marks	Remark



-
-
- [2]

- (ii) The quality control department demanded that this percentage should be reduced.

Give **one** reason why the quality control department would want this percentage reduced.

_____ [1]

- (iii) Give **one** method the company could use to reduce this percentage.

_____ [1]

- (c) Give **two** characteristics of quality assurance.

1. _____ [1]

2. _____ [1]

Examiner Only

Marks Remark

Total Question 6

[Turn over

Examiner Only	
Marks	Remark

-
-
- [1]

- What is the purpose of adding annotation to freehand sketches?
-
-
- [1]

1. _____

 2. _____

- [2]

(b) The design process also makes use of modelling techniques which include mock-ups, prototypes and computer modelling.

(i) State a benefit of using computer modelling.

_____ [1]

(ii) Explain the difference between mock-ups and prototypes. Your explanation should include how, when and why each would be used by a designer in the design process.

 _____ [3]

Examiner Only

Marks Remark

Total Question 7

[Turn over

Examiner Only	
Marks	Remark
Total Question 8	

- Use the next page for your answer. If you need more space there is an additional page overleaf.**

8700.02 ML



[Turn over

8700.02 ML

8700.02 ML

THIS IS THE END OF THE QUESTION PAPER

8700.02 ML

DO NOT WRITE ON THIS PAGE

DO NOT WRITE ON THIS PAGE

8700.02 ML

DO NOT WRITE ON THIS PAGE

For Examiner's use only	
Question Number	Marks
1	
2	
3	
4	
5	
6	
7	
8	

Total Marks	
-------------	--

Examiner Number

Permission to reproduce all copyright material has been applied for.
In some cases, efforts to contact copyright holders may have been unsuccessful and CCEA
will be happy to rectify any omissions of acknowledgement in future if notified.