



General Certificate of Secondary Education
January 2014

Manufacturing

Paper 1
Assessment Unit 3

assessing

Manufacturing Technology

[GMA31]

THURSDAY 9 JANUARY, MORNING



Centre Number

71

Candidate Number

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 ten** 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.

For Examiner's
use only

Question Number	Marks
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

Total
Marks



Answer **all** questions

1 (a) All the products below belong to a manufacturing sector.

Circle **two** products shown below that belong to the printing and publishing sector.

You **must** only circle **two** products. If you make a mistake you must clearly show which two products you have chosen.



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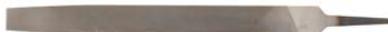
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[2]

Examiner Only	
Marks	Remark

(b) All the products below belong to a manufacturing sector.

Circle **two** products shown below that belong to the engineering fabrication sector.

You **must** only circle **two** products. If you make a mistake you must clearly show which two products you have chosen.



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[2]

Examiner Only	
Marks	Remark

2 Answer all parts of this question in the spaces provided.

Question	Answer
----------	--------

(a) Name the tool shown below and state a use for it.



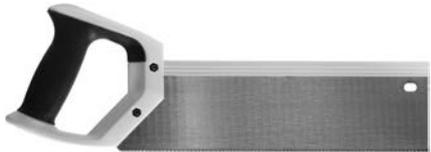
© iStockphoto / Thinkstock

Name _____

Use _____

[2]

(b) Name the tool shown below and state a use for it.



© iStockphoto / Thinkstock

Name _____

Use _____

[2]

(c) Name the tool shown below and state a use for it.



Name _____

Use _____

[2]

(d) Name the tool shown below and state a use for it.



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Name _____

Use _____

[2]

(e) Name the tool shown below and state a use for it.



© Draper Tools Limited

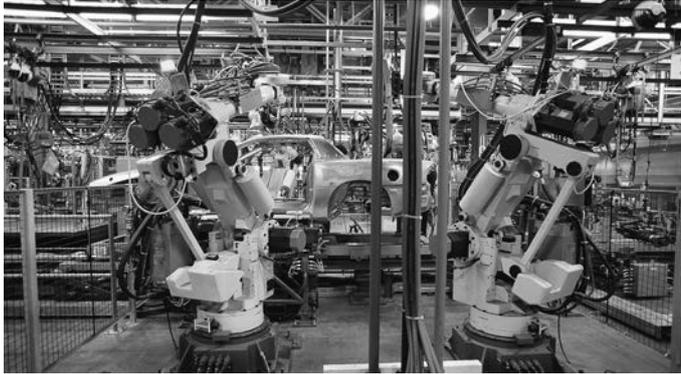
Name _____

Use _____

[2]

Examiner Only	
Marks	Remark

- 3 Automated processes such as CAM are widely used in the manufacture of products. The picture below shows a typical automated production line used to make products.



© Stockbyte / Thinkstock

- (a) Explain the term Automation.

[3]

- (b) What does the abbreviation CAM stand for?

[1]

- (c) Explain **one** advantage of using CAM techniques in the production of high volume products.

[2]

- (d) (i) How can CAM increase the profitability for a manufacturer?

[2]

- (ii) In most cases a manufacturer will make a prototype before the actual production run for a product.

Outline **one** reason why it is in the manufacturer's best interest to manufacture a prototype.

[2]

Examiner Only

Marks	Remark

4 New technology is used in and by manufacturing companies. The manufacturing sector therefore constantly needs to evaluate the need for new technology, materials and components.

(a) Outline **two** reasons why a company might decide not to implement a certain type of new technology.

1. _____
_____ [2]

2. _____
_____ [2]

(b) Outline **two** reasons why it is important for a manufacturing company to constantly evaluate the need for new technology.

1. _____
_____ [2]

2. _____
_____ [2]

Examiner Only

Marks Remark

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(Questions continue overleaf)

- 5 The picture below shows a project fabricated using perspex, also more commonly known as acrylic.



- (a) Give **one** other example of a polymer, apart from acrylic, and a typical situation where it can be used.

Polymer

_____ [1]

Where it can be used

_____ [2]

Examiner Only	
Marks	Remark

- (b) The picture below shows concrete being poured on a construction site. Concrete is a composite material.



© iStockphoto / Thinkstock

- (i) Explain what is meant by the term composite material.

_____ [2]

- (ii) Give **one** other example of a composite material and an example of a specific use which exploits its main properties.

Composite example

_____ [1]

Use

_____ [2]

Examiner Only	
Marks	Remark

- 6 Systems and control technology is used to organise, monitor and control production including quality control and automation.



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- (a) Explain the term Quality Control.

 [3]

- (b) Outline **two** examples of how ICT can be used to ensure that quality control is taking place when manufacturing a product.

1. _____ [2]

2. _____ [2]

- (c) Outline **one** reason why it is important for a manufacturer to ensure that quality control takes place when manufacturing a product.

 [2]

Examiner Only	
Marks	Remark

8 The picture below shows a baby's wooden cradle.



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Some baby cradles like the one shown above are manufactured using traditional woodworking joints. Others however are designed to incorporate standard components such as knock-down fittings to assist with the assembly.

(a) Outline **one** advantage for the manufacturer of using knock-down fittings in products like the cradle shown above.

_____ [2]

(b) Outline **two** advantages for the manufacturer of using computer numerical control (CNC) machinery when manufacturing a cradle like the one shown above. (Your answer must specifically relate to the manufacture of a cradle.)

1. _____ [2]

2. _____ [2]

Examiner Only	
Marks	Remark

9 Control technology is used throughout the manufacture of products across all industries.

- (a) Outline the impact using such technology has had on efficiency, with reference to:
- (i) materials supply and control;
 - (ii) time.

Impact – Materials supply and control

[2]

Impact – Time

[2]

- (b) Outline **two** examples of how the introduction of such technology has impacted on the workforce.

1. _____

[2]

2. _____

[2]

Examiner Only	
Marks	Remark

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