



Rewarding Learning

General Certificate of Secondary Education  
2015

**Manufacturing**  
Paper 1  
Assessment Unit 3  
*assessing*  
Manufacturing Technology  
**[GMA31]**



GMA31

**MONDAY 12 JANUARY, AFTERNOON**

**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 part question.

Centre Number

71	
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Candidate Number

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For Examiner's use only	
Question Number	Marks
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
<b>Total Marks</b>	

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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[2]

Examiner Only	
Marks	Remark

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

Circle **two** products shown below that belong to the biological and chemical 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.

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



© Thinkstock

Name \_\_\_\_\_

Use \_\_\_\_\_

[2]

**(b)** Name the components shown below and state a use for them.



© Thinkstock

Name \_\_\_\_\_

Use \_\_\_\_\_

[2]

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



© Thinkstock

Name \_\_\_\_\_

Use \_\_\_\_\_

[2]

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



© Thinkstock

Name \_\_\_\_\_

Use \_\_\_\_\_

[2]

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



© Thinkstock

Name \_\_\_\_\_

Use \_\_\_\_\_

[2]

Examiner Only	
Marks	Remark





4 CAD and CAM have become increasingly important in manufacturing industries.

(i) Describe the difference between CAD and CAM.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ [2]

(ii) State **two** advantages of using CAD in the manufacturing industry.

1. \_\_\_\_\_

\_\_\_\_\_ [1]

2. \_\_\_\_\_

\_\_\_\_\_ [1]

(iii) Give **one** advantage and **one** disadvantage of CAM.

Advantage

\_\_\_\_\_

\_\_\_\_\_ [1]

Disadvantage

\_\_\_\_\_

\_\_\_\_\_ [1]

Examiner Only	
Marks	Remark



(b) The image below is a dog bowl made from rigid polystyrene.



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(i) Name **one** industrial manufacturing process that could be used to produce the dog bowl.

Process

\_\_\_\_\_ [1]

(ii) Identify **one advantage** and **one disadvantage** associated with this type of industrial process.

Advantage

\_\_\_\_\_  
\_\_\_\_\_ [1]

Disadvantage

\_\_\_\_\_  
\_\_\_\_\_ [1]

(c) Name **one** other example of a polymer and identify a typical application for this material.

Polymer

\_\_\_\_\_ [1]

Application

\_\_\_\_\_  
\_\_\_\_\_ [1]

Examiner Only	
Marks	Remark

- 6 (a) The tool shown below can be used to hold two pieces of material together to help with nailing or gluing.



© Thinkstock

- (i) Name this tool

\_\_\_\_\_ [1]

- (ii) Identify one **other specific task** that this tool could be used for other than the job mentioned above.

Task

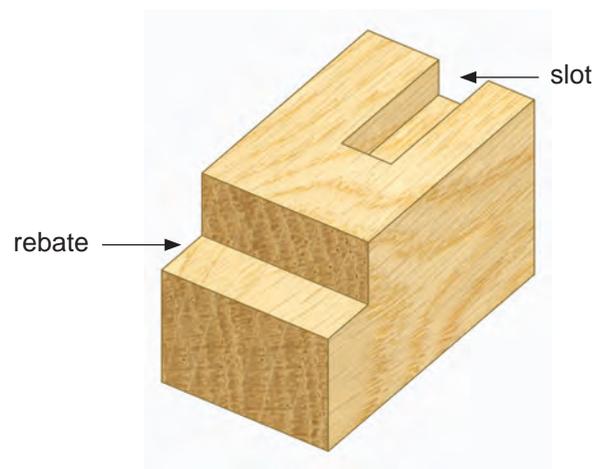
\_\_\_\_\_ [1]

- (iii) When using this tool to hold two pieces of wood together, it is often necessary to use some scrap wood. Explain why this scrap wood might be required.

\_\_\_\_\_  
 \_\_\_\_\_ [2]

Examiner Only	
Marks	Remark

(b) The image below shows a slot and rebate cut in a piece of wood.



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(i) Identify **one** hand tool that could be used to remove the slot after it has been marked out.

Hand tool

\_\_\_\_\_ [1]

(ii) Identify **one** tool that could be used for marking out a rebate.

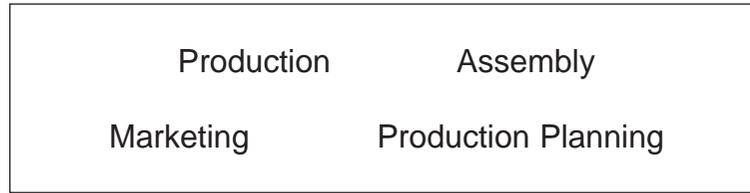
Tool

\_\_\_\_\_ [1]

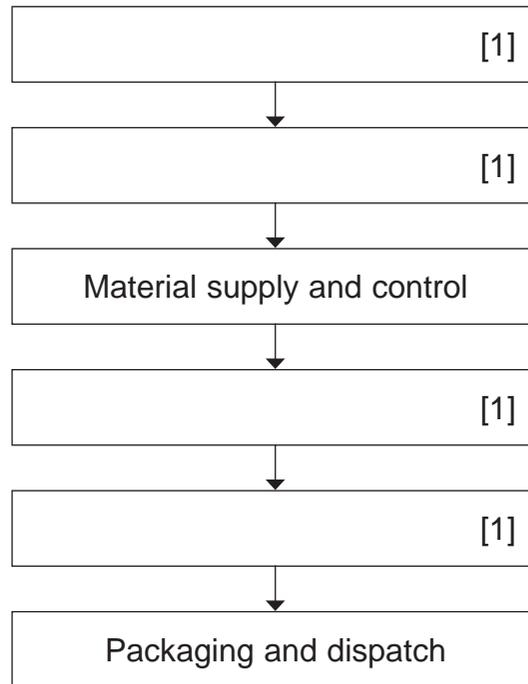
Examiner Only	
Marks	Remark

7 (a) The following tasks related to the design process are **not** in the correct order.

Using the spaces provided, insert the following four tasks in the correct order.



Complete the correct sequence below.



Examiner Only	
Marks	Remark

(b) School workbenches, similar to those found in your workshops, are manufactured using a number of various stages.



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Describe the following stages in the manufacture of a workbench.

(i) Production of steel frame.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ [2]

(ii) Material supply and control.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ [2]

(iii) Assembly and completion of the workbench.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ [2]

Examiner Only	
Marks	Remark



9 Quality control is crucial in the manufacture of products. It is inspected at various stages of production. Stages of inspection include:

- Raw materials and parts brought into the factory
- Preparation of materials, processing and assembly
- Finished product and packaging.

(i) Name a product and explain how two quality control checks could be carried out.

Product

\_\_\_\_\_ [1]

Quality control check 1

\_\_\_\_\_  
 \_\_\_\_\_ [2]

Quality control check 2

\_\_\_\_\_  
 \_\_\_\_\_ [2]

(ii) Identify why it is important for a manufacturer to ensure that quality control takes place when manufacturing a product.

\_\_\_\_\_  
 \_\_\_\_\_ [2]

Examiner Only	
Marks	Remark



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

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