

**GENERAL CERTIFICATE OF SECONDARY EDUCATION  
MANUFACTURING**

**B234**

Impact of Modern Technologies on Manufacturing

Candidates answer on the question paper.

**OCR supplied materials:**  
None

**Other materials required:**  
None

**Monday 31 January 2011  
Morning**

**Duration: 1 hour**



Candidate forename		Candidate surname	
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Centre number						Candidate number				
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**INSTRUCTIONS TO CANDIDATES**

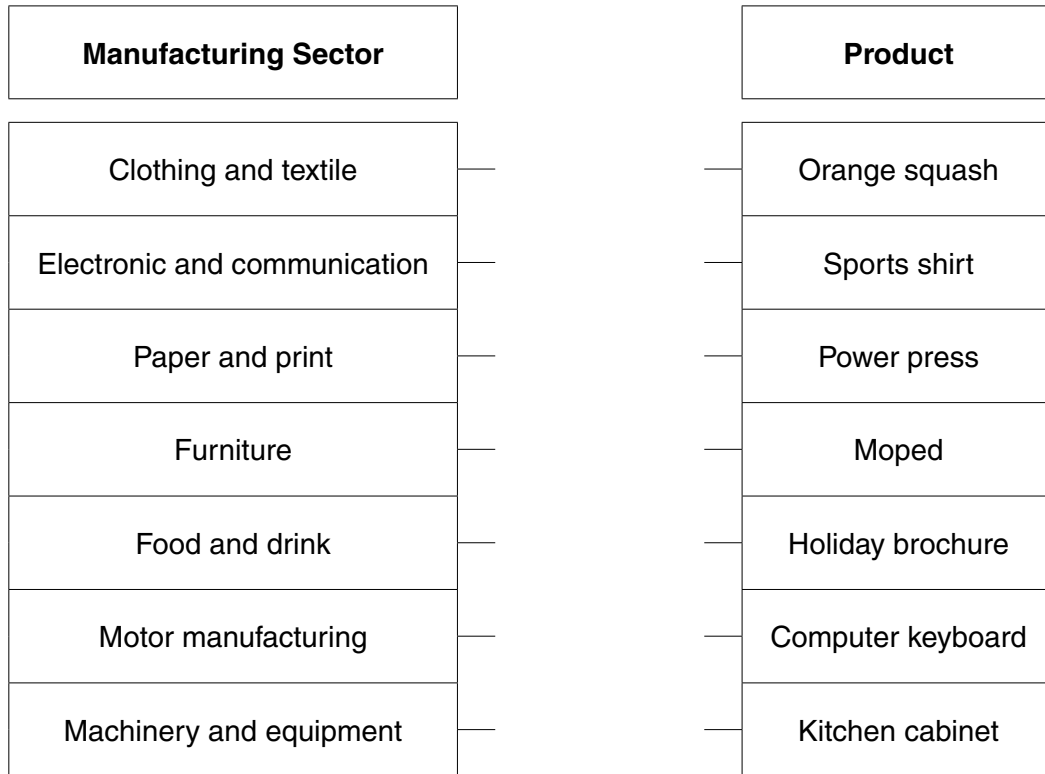
- Write your name, centre number and candidate number in the boxes above. Please write clearly and in capital letters.
- Use black ink. Pencil may be used for graphs and diagrams only.
- Read each question carefully. Make sure you know what you have to do before starting your answer.
- Write your answer to each question in the space provided. Additional paper may be used if necessary but you must clearly show your candidate number, centre number and question number(s).
- Answer **all** the questions.
- Do **not** write in the bar codes.

**INFORMATION FOR CANDIDATES**

- The number of marks is given in brackets [ ] at the end of each question or part question.
- The total number of marks for this paper is **60**.
- Your Quality of Written Communication is assessed in questions marked with an asterisk (\*).
- This document consists of **12** pages. Any blank pages are indicated.

1 Manufacturing sectors produce different products.

(a) Complete the links below to identify which manufacturing sector makes the products listed.



[7]

(b) Select **two** products from the list above and, for each one, state **one** modern technology used in the product.

Product 1 .....

Modern technology used ..... [1]

Product 2 .....

Modern technology used ..... [1]

2 (a) Give **two** examples of products that have improved because of developments in materials or ingredients. Describe the changes to each product.

(i) Product 1 .....

Material/Ingredient development .....

..... [1]

Changes to product .....

.....

..... [2]

(ii) Product 2 .....

Material/Ingredient development .....

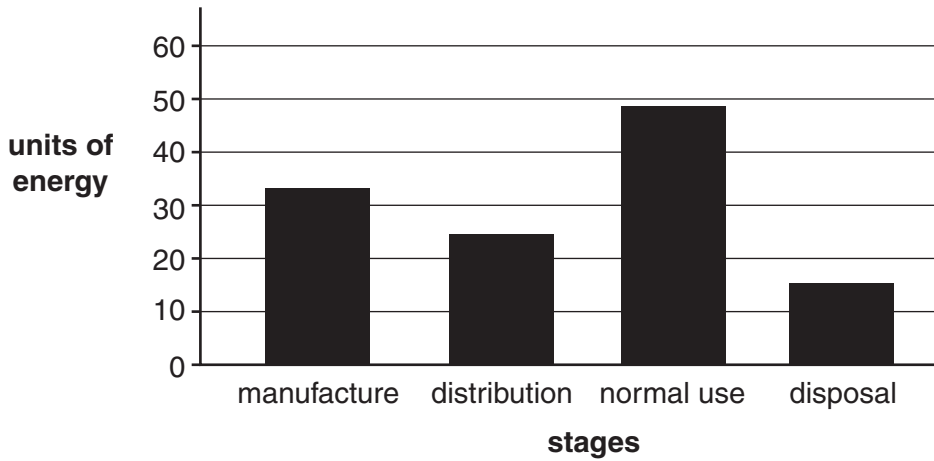
..... [1]

Changes to product .....

.....

..... [2]

3 The bar chart below shows the energy used at different stages in the life of a product.



(a) State which stage in the life of the product uses the most energy.

..... [1]

(b) Explain how the amount of energy used for distribution could be reduced.

.....  
.....  
..... [3]

(c) Name **three** types of 'green' energy supply.

- 1 ..... [1]
- 2 ..... [1]
- 3 ..... [1]

4 (a) Describe, using examples, **two** benefits that modern technologies have brought to:

- designers of manufactured products
- manufacturers
- the workforce

(i) Designers of manufactured products

Benefit 1 .....  
.....  
..... [2]

Benefit 2 .....  
.....  
..... [2]

(ii) Manufacturers

Benefit 1 .....  
.....  
..... [2]

Benefit 2 .....  
.....  
..... [2]

(iii) The workforce

Benefit 1 .....  
.....  
..... [2]

Benefit 2 .....  
.....  
..... [2]

5 'Lean manufacture' aims to reduce waste in manufacturing.

(a) Describe how waste can be reduced in the following stages of the manufacture of a new product.

(i) Designing .....  
.....  
..... [2]

(ii) Production .....  
.....  
..... [2]

(iii) Packaging .....  
.....  
..... [2]

6 When designing new manufactured products, designers have to consider 'Design for Manufacturing Assembly' (DFMA).

(a) Describe how DFMA can help in the 'end of life disposal' of used products.

.....  
.....  
..... [2]

(b) Describe the use of 'standardised components' in manufacturing assembly.

.....  
.....  
.....  
..... [3]

(c) Explain what is meant by the term 'common fixing strategy'.

.....  
.....  
.....  
..... [3]

7 (a) Describe the impact of modern technologies on the following:

- lifestyle
- product availability
- product cost

(i) Lifestyle

.....  
.....  
..... [2]

(ii) Product availability

.....  
.....  
..... [2]

(iii) Product cost

.....  
.....  
..... [2]





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