

**GENERAL CERTIFICATE OF SECONDARY EDUCATION
MANUFACTURING**

B234

Impact of Modern Technologies on Manufacturing

**Thursday 23 June 2011
Morning**

Duration: 1 hour

Candidates answer on the question paper.

OCR supplied materials:

None

Other materials required:

None



Candidate forename		Candidate surname	
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Centre number						Candidate number				
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INSTRUCTIONS TO CANDIDATES

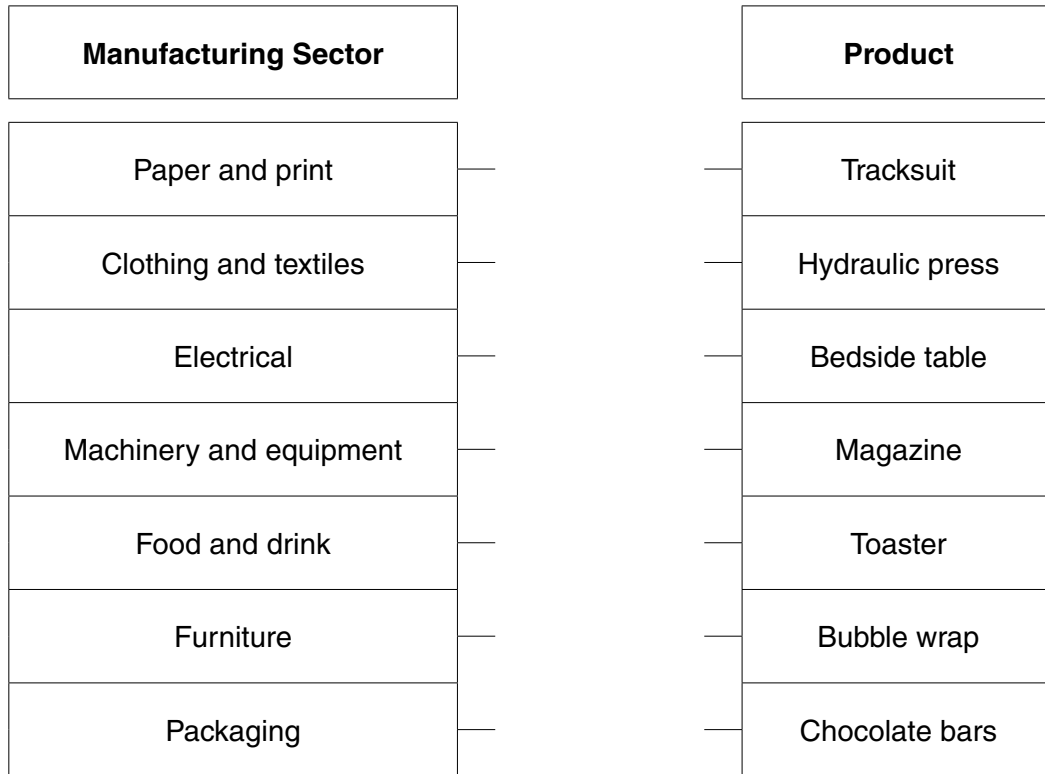
- Write your name, centre number and candidate number in the boxes above. Please write clearly and in capital letters.
- Use black ink. Pencil may be used for graphs and diagrams only.
- Read each question carefully. Make sure you know what you have to do before starting your answer.
- Write your answer 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 **one** manufacturing sector from the list above.

Manufacturing Sector

(i) State **one** modern material, component or ingredient used in products made in that sector.

..... [1]

(ii) Describe how the modern material, component or ingredient is used in the manufacture of the products.

.....

 [2]

2 (a) Name **two** different manufacturing processes carried out in a sector of your choice.

Manufacturing sector

Process 1 [1]

Process 2 [1]

(b) Describe how modern technology is used in each of the manufacturing processes identified in part (a).

Process 1

.....

..... [2]

Process 2

.....

..... [2]

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

(i) Health and safety at work
.....
..... [2]

(ii) Product quality
.....
..... [2]

(iii) Materials
.....
..... [2]

4 Computer Aided Design (CAD) is used by designers of manufactured products.

(a) Give **three** benefits to the designer of using CAD.

1
..... [1]

2
..... [1]

3
..... [1]

(b) Prototypes of new products can be made using Computer Aided Manufacturing (CAM).

Explain how a prototype for a product of your choice could be made using CAM.

Product

Use of CAM
.....
.....
..... [3]

(c) Give **two** benefits to manufacturers of using CAM in the manufacture of their products.

1
..... [1]

2
..... [1]

5 Part of a flow process chart is shown below.

Flow Process Chart			
<input type="checkbox"/> Present method <input type="checkbox"/> Proposed method Subject: Assembly and packing Chart begins: Assemble product Chart ends: Conveyor to packing area Subject: Assembly and packaging			
Symbols	Description	Distance (m)	Time (s)
○⇒□D▽	Assemble product		25
○⇒□D▽	Place in tray		5
○⇒□D▽	Wait		360
○⇒□D▽	Full tray to conveyor	5	30
○⇒□D▽	Conveyor to quality control	30	90
○⇒□D▽	Final inspection		10
○⇒□D▽	Conveyor to packing area	50	120

(a) State the meaning of each of the following symbols.

- Symbol 1 ○ [1]
- Symbol 2 ⇒ [1]
- Symbol 3 ▽ [1]

(b) Explain how a flow process chart could be used to improve manufacturing output.

.....

.....

.....

..... [3]

(c) Explain **one** benefit to the manufacturer of carrying out quality control during the manufacture of a product.

.....

.....

.....

..... [3]

6 (a) Explain **one** benefit of 'global trading'.

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

(b) Describe **two** possible disadvantages of 'global trading'.

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

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

7 (a) Explain how the following can help towards reducing manufacturing waste.

(i) Recycling
.....
.....
..... [3]

(ii) End-of-life disposal of products
.....
.....
..... [3]

(iii) Material choice
.....
.....
..... [3]

8* Discuss the impact of modern manufacturing on local environments.

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..... [6]

10
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