



Oxford Cambridge and RSA

Monday 27 June 2016 – Afternoon

GCSE MANUFACTURING

B234/02 Impact of Modern Technologies on Manufacturing



Candidates answer on the Question Paper.

OCR supplied materials:
None

Other materials required:
None

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. HB pencil may be used for graphs and diagrams only.
- Answer **all** the questions.
- 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).
- 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 will be assessed in questions marked with an asterisk (*)
- This document consists of **8** pages. Any blank pages are indicated.

1 A list of manufacturing sectors is given below.

- Food and drink
- Electrical
- Furniture
- Machinery and Equipment
- Paper and Print

(a) Name **two** different manufacturing sectors other than those shown above.

1

2 [2]

(b) Choose **three** sectors from the list and, for each sector:

- name **one** product produced in that sector
- give **one** example of a modern technology used in the product.

Sector 1

Product

Modern technology used [2]

Sector 2

Product

Modern technology used [2]

Sector 3

Product

Modern technology used [2]

2 Many products have changed because of developments in modern materials.

(a) Explain the meaning of the term 'modern material.'

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

(b) Explain, using **two** examples, how products have been improved through the use of modern materials.

Example 1
.....
.....
..... [3]

Example 2
.....
.....
..... [3]

3 Describe the impact of modern technologies on the following:

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

(ii) Materials
.....
..... [2]

(iii) The environment
.....
..... [2]

(iv) Product disposal
.....
..... [2]

4 'Lean manufacturing' aims to reduce waste.

(a) Describe in detail **two** ways in which waste can be reduced in the manufacturing process.

1
.....
.....
..... [3]

2
.....
.....
..... [3]

(b) Explain **one** possible impact on the environment of waste material disposal.

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

5 Part of a flow process chart is shown below.

Flow Process Chart			
Subject: Process and production			
Chart begins: Source material			
Chart ends: Move finished product to dispatch			
Symbols	Description	Distance (m)	Time (s)
○	Source material	20	40
○	Place material in milling machine		10
○	Process component		300
⇒	Move machined component to assembly	10	20
○	Assemble component		100
⇒	Move assembled product to quality control	20	80
▽	Check final product		25
⇒	Move finished product to dispatch	50	100

(a) State the meaning of each of the following flow process symbols:

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

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

.....

.....

.....

..... [3]

(c) Describe how introducing a quality control check after processing the component could reduce:

Manufacturing waste
.....
..... [2]

Manufacturing time
.....
..... [2]

6 (a) Describe **two** ways in which energy consumption in the workplace can be reduced.

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

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

(b) Give **three** examples of 'green energy' sources.

1
2
3 [3]

7 Describe **two** ways in which the use of modern technology has improved the workplace environment.

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

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

8* Discuss the effects of modern technologies on 'Global Trading'.

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..... [6]

END OF QUESTION PAPER



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