

**Tuesday 17 January 2012 – Afternoon**

**GCSE DESIGN AND TECHNOLOGY Industrial Technology**

**A542/01 Sustainable Design**

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.
- 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 **in Section A and Section B**.
- 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 **12** pages. Any blank pages are indicated.

**Section A**

Answer **all** questions.

You are advised to spend 15 minutes on this section.

On questions 1–5 **circle** your answer.

- 1** Recycling means that:
- (a) Products have a recycling logo
  - (b) Materials are reused when a product is no longer required
  - (c) Products are sent to a landfill site when finished with
  - (d) Materials can biodegrade [1]
- 2** End of life disposal of products is to do with:
- (a) Disposing products in incinerators
  - (b) Disposing products in landfill sites
  - (c) Disposing products in an environmentally friendly way
  - (d) Disposing products as fast as possible [1]
- 3** Sustainable products are:
- (a) Very profitable for manufacturers
  - (b) Good for the environment
  - (c) Unable to be recycled
  - (d) Made in countries with low wages [1]
- 4** The symbol shown means:
- The image shows the CE mark, which consists of a large 'C' and a large 'E' joined together.
- (a) Made in China
  - (b) British Series Innovation
  - (c) Product has met EU standards
  - (d) Made in Europe [1]

- 5 A sweatshop is a:
- (a) Factory which produces a lot of heat
  - (b) Business forging metal components
  - (c) Company that cares for all employees
  - (d) Business with poor working conditions [1]

6 Name **one** non-renewable form of energy.  
..... [1]

7 Name the term used to describe the restocking of forests.  
..... [1]

8 What information is contained in an anthropometric chart?  
..... [1]

9 Name **one** recyclable plastic.  
..... [1]

10 Where does geothermal energy come from?  
..... [1]

4

Decide whether each of the following statements is **true** or **false**.

Tick (✓) the box to show your answer.

	<b>True</b>	<b>False</b>	
<b>11</b> Recyclable products benefit the environment	<input type="checkbox"/>	<input type="checkbox"/>	<b>[1]</b>
<b>12</b> Eco design can minimise damage to the environment	<input type="checkbox"/>	<input type="checkbox"/>	<b>[1]</b>
<b>13</b> Fairtrade ensures that customers get a good deal on their products	<input type="checkbox"/>	<input type="checkbox"/>	<b>[1]</b>
<b>14</b> Polypropylene is a sustainable plastic	<input type="checkbox"/>	<input type="checkbox"/>	<b>[1]</b>
<b>15</b> Moral issues are always considered in the design of products	<input type="checkbox"/>	<input type="checkbox"/>	<b>[1]</b>
			<b>Total [15]</b>




**Section B**

Answer **all** questions.

You are advised to spend 45 minutes on this section.

**16** The table below shows health and safety symbols that are commonly found in factories.

**(a)** Complete the table below stating the meaning of each symbol and giving an example of a hazard or risk. One meaning has been done for you.

Symbol	Symbol Meaning	Hazard or risk
	<i>wear eye protection.</i>	
		
		

[5]

**(b)** State **two** reasons why symbols are used to give important information.

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

(c) Fig. 1 shows a label that can be awarded to certain products.



Fig. 1

(i) State the name of the label.

..... [1]

(ii) Explain what this label guarantees to the consumer.

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

(d) Fig. 2 shows a symbol found on many manufactured products.



**Fig. 2**

(i) State the name of the symbol shown in Fig. 2.

..... [1]

(ii) Give the name of the organisation which authorises the use of this symbol.

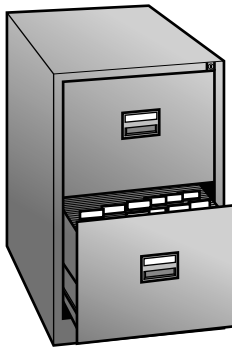
..... [1]

(iii) Explain the importance of this symbol to consumers.

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

**Total [15]**

17 Fig. 3 shows two manufactured products that can store data.



Metal filing cabinet for storing paper documents.



8 Gb USB flash drive.

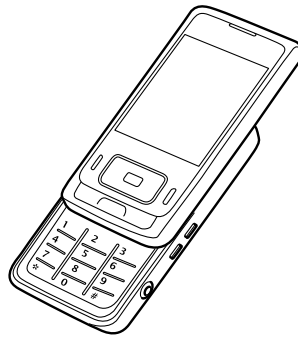
Fig. 3

- (a) Give **two** advances in technology that have enabled the development of the USB flash drive.
- 1 .....
- 2 ..... [2]
- (b) The flash drive is manufactured in Hong Kong by a company belonging to the ETI alliance.
- (i) State what ETI stands for.
- ..... [1]
- (ii) Describe the purpose of the ETI.
- .....
- .....
- ..... [2]
- (c) Give **two** advantages and **two** disadvantages to the user of the metal filing cabinet.
- Advantage 1 .....
- Advantage 2 .....
- Disadvantage 1 .....
- Disadvantage 2 ..... [4]





18 Fig. 4 shows a mobile phone which has built-in obsolescence.



Mobile Phone

Fig. 4

(a) Describe the term built-in obsolescence.

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

(b) State **three** ways in which mobile phone manufacturers can build in obsolescence.

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

(c) Describe **one** negative impact of planned obsolescence for a consumer and for the environment.

Consumer

.....  
.....  
.....  
.....

Environment

.....  
.....  
.....  
..... [4]

(d) Explain **three** key stages in the life cycle of a mobile phone.

1 .....  
.....  
.....

2 .....  
.....  
.....

3 .....  
.....  
..... [6]

**Total [15]**

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