



GENERAL CERTIFICATE OF SECONDARY EDUCATION
DESIGN AND TECHNOLOGY
Resistant Materials
 Sustainable Design

A562

Candidates answer on the Question Paper

OCR Supplied Materials:
None

Other Materials Required:
None

Wednesday 26 May 2010
Afternoon

Duration: 1 hour



Candidate Forename		Candidate Surname	
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Centre Number						Candidate Number				
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MODIFIED LANGUAGE

INSTRUCTIONS TO CANDIDATES

- Write your name clearly in capital letters, your Centre Number and Candidate Number in the boxes above.
- Use black ink. Pencil may be used for graphs and diagrams only.
- Read each question carefully and make sure that you know what you have to do before starting your answer.
- Answer **all** the questions in Section A **and** Section B.
- Do **not** write in the bar codes.
- 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).

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.

Section A

Answer **all** questions.

You are advised to spend 15 minutes on this section.

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

- 1 Which of the following is **not** a renewable resource?
- (a) Wood
 - (b) Wool
 - (c) Metal
 - (d) Paper
- [1]
- 2 Taking a product apart to analyse the parts, is called:
- (a) Product disassembly
 - (b) Product assembly
 - (c) Repair analysis
 - (d) Commercial analysis
- [1]
- 3 Adding design features to deliberately make a product outdated after a certain length of time is called:
- (a) Planned obsolescence
 - (b) Safety obsolescence
 - (c) Expired warranty
 - (d) Technological obsolescence
- [1]
- 4 The symbol shown indicates:
- (a) Environmentally friendly
 - (b) Environmentally recyclable
 - (c) European eco label
 - (d) European standards label
- 
- The image shows the European eco label symbol, which consists of a stylized leaf with three leaves and a stem, positioned below a circle of twelve five-pointed stars. In the center of the circle of stars is a Euro symbol (€).

- 5 The role of a designer of sustainable products is to:
- (a) Modify existing designs
 - (b) Use traditional designs
 - (c) Design products that can be bought cheaply
 - (d) Create innovative environmentally friendly designs [1]

6 Give the term used to describe waste materials that rot easily within the environment.
..... [1]

7 State the meaning of eco design.
..... [1]

8 What does ETI stand for in the context of a company's moral issues?
..... [1]

9 Fig. 1 shows a symbol found on products made from one type of material



Fig. 1

On which material would you find this symbol?
..... [1]

10 Give **one** reason why numbers from 1 – 7 are used on the symbol shown in **Fig. 1**.
..... [1]

Decide whether each of the following is **True** or **False**.
Tick (✓) the box to show your answer.

	True	False	
11 Manufactures do not have to follow government guidelines when disposing of waste materials.	<input type="checkbox"/>	<input type="checkbox"/>	[1]
12 Energy from the sun is an example of a fossil fuel.	<input type="checkbox"/>	<input type="checkbox"/>	[1]
13 Disposal is the final stage in a life-cycle analysis of a product.	<input type="checkbox"/>	<input type="checkbox"/>	[1]
14 Wood is biodegradable.	<input type="checkbox"/>	<input type="checkbox"/>	[1]
15 Carbon offsetting allows companies to compensate for unavoidable emissions.	<input type="checkbox"/>	<input type="checkbox"/>	[1]
			[Total: 15]

5
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(ii) Recyclable

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

(iii) Biodegradable

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

(b) Give **one** environmental advantage of using water based sealer rather than synthetic paint to finish the wooden plant container.

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

(c) The label on a tin of wood finishes includes the term '**low volatile organic compounds**'.

Explain why a manufacturer would include this information on their products.

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

(d) Explain the term 'globalisation of products'.

.....

.....

.....

..... [2]

[Total: 15]

17 Fig. 3 shows two possible designs for the seat of a child's swing. One is made from wood the other from an old car tyre.



Fig. 3

(a) Give **three** advantages of the seat made from an old car tyre.

Advantage 1
..... [1]

Advantage 2
..... [1]

Advantage 3
..... [1]

(b) Use sketches and notes to show how the design of the wooden seat could be developed to make it **safer** for the user of the swing.

[3]

(c) With reference to the seat of a child's swing.

Explain what is meant by 'Anthropometrics' and 'Ergonomics'.

(i) Anthropometrics

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

(ii) Ergonomics

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

(d) At the end of their useful life, products can be recycled and disposed of by incineration.

Give **one** other way of disposing of waste products.

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

(e) State **two** harmful effects on the environment of incinerating waste products.

Effects 1
..... [1]

Effects 2
..... [1]

[Total: 15]

- (b) Name **two** wood based materials that could be used for the top of a coffee table that would be considered to be more environmentally friendly than solid Mahogany and give a reason for your choice.

Material 1 [1]

Reason

..... [1]

Material 2 [1]

Reason

..... [1]

- (c) (i) Explain why companies are relocating the manufacturing of products to countries such as China and India.

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

- (ii) Explain the benefits, to local people, of companies relocating the manufacture of products to developing countries.

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

[Total: 15]



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