

**Friday 25 January 2013 – Morning**

**GCSE DESIGN AND TECHNOLOGY Graphics**

**A532/01 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 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 **circle** your answer.

- 1** The term finite means:
- (a) Depletion of the solar system
  - (b) Can only last a limited period of time
  - (c) Depletion of the ozone layer
  - (d) Can last forever [1]
- 2** The use of non-renewable materials should be:
- (a) Discouraged
  - (b) Unlimited
  - (c) Encouraged
  - (d) Cheap [1]
- 3** The Forest Stewardship Council supports:
- (a) Recycling paper
  - (b) The cutting down of forests
  - (c) The council of tree stewards
  - (d) Managed renewable forests [1]
- 4** Which of the following is not a sustainable energy source:
- (a) Tidal
  - (b) Wind
  - (c) Coal
  - (d) Hydro [1]

5 Secondary recycling means to:

- (a) Give a product to a charity shop
- (b) Recycle a product twice
- (c) Fix or mend a product
- (d) Recycle a product into a different product

[1]

6 Name the symbol shown below.



..... [1]

7 State the term used to describe when a product is designed with consideration for the environment.

..... [1]

8 Which of the 6Rs describes how a product can be mended?

..... [1]

9 State what is meant by deforestation.

..... [1]

10 When a product is designed to fit the human form it is

.....designed. [1]

4

Decide whether each of the following statements is **true** or **false**.  
Tick (✓) the box to show your answer.

**True**

**False**

- |           |   |                          |                          |            |
|-----------|---|--------------------------|--------------------------|------------|
| <b>11</b> | Photochromic inks change colour in varying temperatures.                                      | <input type="checkbox"/> | <input type="checkbox"/> | <b>[1]</b> |
| <b>12</b> | To approach a design problem in a different way is to rethink.                                | <input type="checkbox"/> | <input type="checkbox"/> | <b>[1]</b> |
| <b>13</b> | High Density Polyethylene can be recycled.  | <input type="checkbox"/> | <input type="checkbox"/> | <b>[1]</b> |
| <b>14</b> | The European eco-label is placed on products that cause a high level of environmental damage. | <input type="checkbox"/> | <input type="checkbox"/> | <b>[1]</b> |
| <b>15</b> | A biodegradeable material will rot naturally in the ground.                                   | <input type="checkbox"/> | <input type="checkbox"/> | <b>[1]</b> |

**Total [15]**

5  
SECTION B

Answer **all** questions.

You are advised to spend 45 minutes on this section.

16 Fig. 1 shows three types of toy packaging.

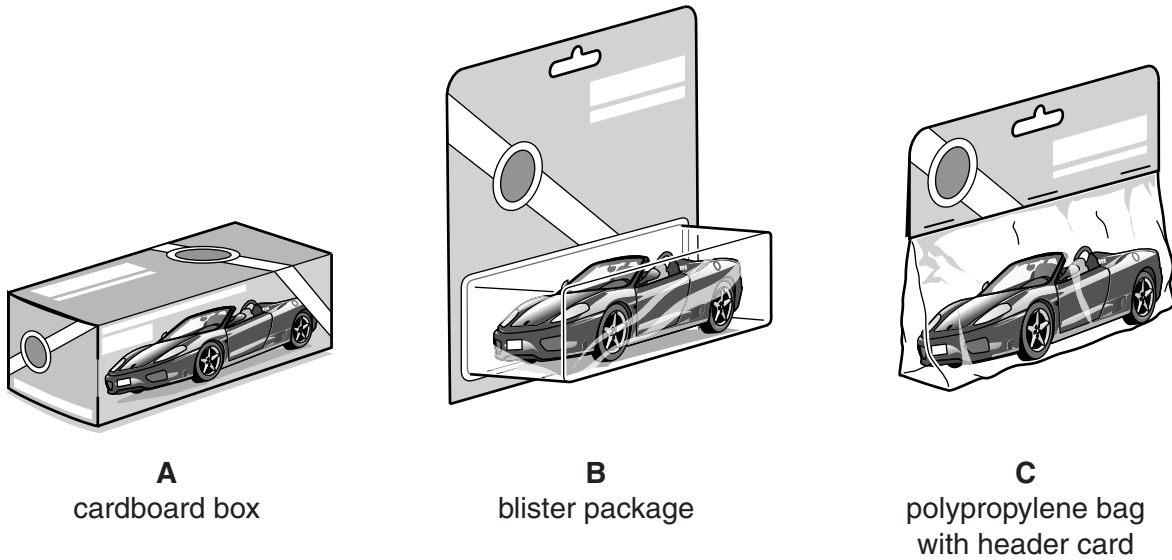


Fig. 1

(a) **A** is made from post-consumer cardboard.

Explain the meaning of the term post-consumer.

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

(b) State **one** reason why cardboard has been used for **A**.

..... [1]

(c) Explain **one** problem with recycling **B**.

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

(d) Give **one** reason why a consumer may prefer the packaging of **B** rather than **A**.

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

(e) Explain **one** reason why the packaging of **C** is more economically viable to manufacturers.

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

(f) Manufacturers must ensure that packaging is safe for the user.

Give **two** safety concerns that would need to be considered.

1 .....

.....

2 .....

..... [2]

(g) Manufacturers need to ensure that factory workers are aware of the dangers of using machinery.

(i) State **one** colour that could be used to show danger.

..... [1]

(ii) In the space below, design a symbol to show that long hair must be tied back when operating machinery.

[3]

**Total [15]**

17 Fig. 2 shows a vase made in Indonesia. The vase is made from recycled magazines.



Fig. 2

(a) Give **four** advantages of making products from recycled materials.

- 1 .....
- 2 .....
- 3 .....
- 4 .....

[4]

(b) The vase in Fig. 2 is handmade in Indonesia. The workers are supported by the Ethical Trading Initiative (ETI).

State **three** benefits to workers supported by ETI.

- 1 .....
- 2 .....
- 3 .....

[3]





18 Fig. 3 shows a book with pop-up mechanisms.

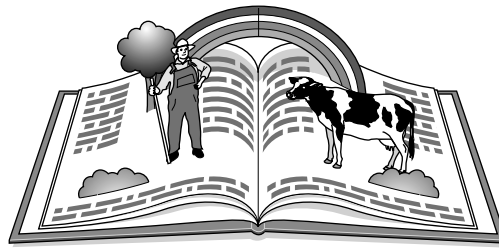


Fig. 3

(a) Complete the table below by giving an environmental disadvantage of the materials used for the book in Fig. 3. Give a different answer for each.

Component	Material	Environmental Disadvantage
Front & Back Cover	Bleached white card	
Text/Images	Oil based Inks	
Pop-up Mechanisms	Card made from virgin pulp	

[3]

(b) The pop-up mechanisms need to be attached to the pages of the book in Fig. 3.

(i) Name **one** adhesive that could be used.

..... [1]

(ii) State **one** reason why pop-up mechanisms are used in the book.

..... [1]

(c) (i) Give the meaning of the term aesthetic.

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

(ii) State **three** ways that the book in Fig. 3 could be made more aesthetically pleasing.

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

(d) Explain why, in today's society, there has been a decrease in the sale of printed books.

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

(e) The book in Fig. 3 is to be recycled.

Identify **three** examples of primary recycling for the book.

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

**Total [15]**

**PLEASE DO NOT WRITE ON THIS PAGE**



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