

Tuesday 29 May 2012 – Afternoon

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	
Centre number		Candidate number	

MODIFIED LANGUAGE

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 One type of recycling is to:

- (a) Store renewable materials
- (b) Not use toxic materials
- (c) Throw materials away
- (d) Break down and reuse materials

[1]

2 Tidal power generates energy from the:

- (a) Sea
- (b) Clouds
- (c) Earth
- (d) Sun

[1]

3 In the list below, the most difficult material to recycle is:

- (a) Corrugated cardboard
- (b) Shredded paper
- (c) Bubble wrap
- (d) Wood shavings

[1]

4 To reuse a product means:

- (a) To throw it away
- (b) To use it again
- (c) Not use it again
- (d) Mend it when it is broken

[1]

5 Look at this symbol:



The symbol means that Aluminium can be:

- (a) Thrown away
- (b) Returned
- (c) Repaired
- (d) Recycled

[1]

6 What does the Green Dot symbol mean?

..... [1]

7 Which of the 6Rs describes when we fix or mend a product?

..... [1]

8 What is the internationalisation of products also known as?

..... [1]

9 What does biodegradable mean?

..... [1]

10 What is nanotechnology the science of?

..... [1]

4

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

	True	False	
11 All plastics are easy to recycle	<input type="checkbox"/>	<input type="checkbox"/>	[1]
12 Vegetable based printing inks do less harm to the environment than solvent based inks	<input type="checkbox"/>	<input type="checkbox"/>	[1]
13 Ethical trade initiatives support workers	<input type="checkbox"/>	<input type="checkbox"/>	[1]
14 Refilling a water bottle has a negative impact on the environment	<input type="checkbox"/>	<input type="checkbox"/>	[1]
15 Built in obsolescence means that a product is designed to last a fixed period of time	<input type="checkbox"/>	<input type="checkbox"/>	[1]
			Total [15]

Section B

Answer **all** questions.

You are advised to spend 45 minutes on this section.

16 Fig. 1 shows a pencil crayon box.

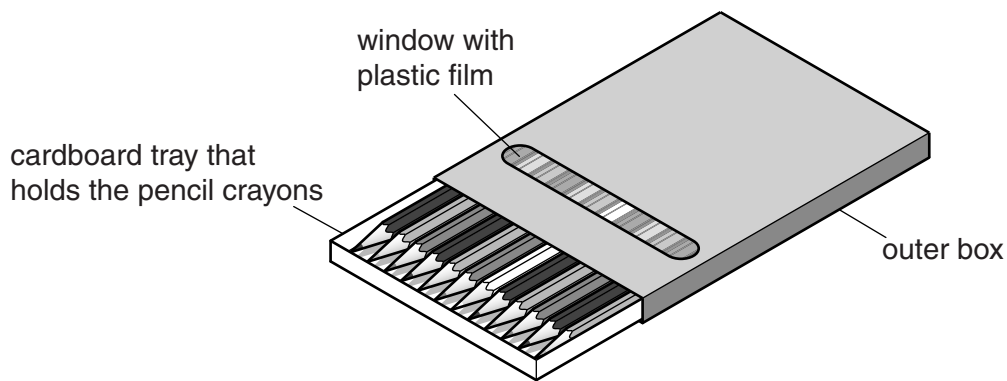


Fig. 1

(a) The manufacturer of the pencil crayon box wants to reduce the amount of material used.

(i) Give **four** reasons why this would be good for the environment.

- 1
- 2
- 3
- 4 [4]

(ii) State **one** reason why this would be good for the manufacturer.

-
-
- [2]

- (b) How can the design of the pencil crayon box be modified to reduce the amount of material(s) used?

The design should include **two** or more modifications.

In your answer, use sketches and notes.

- (c) Fig. 2. shows a symbol on the window of the pencil crayon box.



Fig. 2

Name the symbol shown in Fig. 2

..... [1]

- (d) Use examples from the pencil crayon box to explain the following terms:

Primary Recycling

.....

.....

.....

Tertiary Recycling

.....

.....

..... [4]

Total [15]

17 Fig. 3 shows a daily newspaper.



Fig. 3

(a) The newspaper is printed using low VOC inks.

(i) What do the initials VOC stand for?

..... [1]

(ii) Give **two** reasons why low VOC inks are used.

1

.....

.....

.....

2

.....

.....

..... [4]

(b) The manufacturer of the newspaper must comply with COSHH regulations.
Use examples to explain the purpose of COSHH regulations.

.....

.....

.....

.....

.....

..... [4]

- (c) Complete the table below to show a Risk Assessment that the manufacturer of the newspaper might carry out.

The first one has been done for you.

Potential Hazard	Solution
Poisoning from spilt toxic solutions and chemicals	No eating or drinking in the workshop to prevent contamination

[6]

Total [15]

18 Fig. 4 shows a music CD and case.

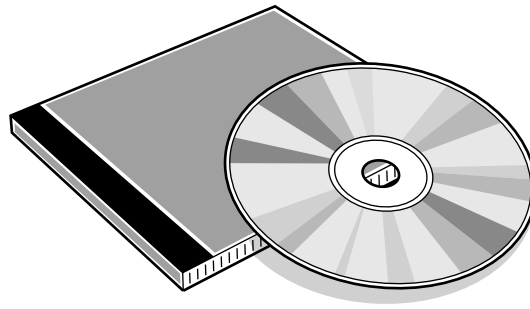


Fig. 4

(a) Give **one** reason why a CD is difficult to recycle.

..... [1]

(b) Give **three** ways a consumer can reduce the need for using a CD.

1

2

3 [3]

(c) State **two** suitable reuses for an unplayable CD.

1

2 [2]

(d) Graphic products can be manufactured in developing countries.

Describe the social benefits of manufacturing in a developing country.

.....

.....

.....

.....

.....

..... [3]

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