

OXFORD CAMBRIDGE AND RSA EXAMINATIONS
GCSE
A554/01
DESIGN AND TECHNOLOGY
Product Design
Designing Influences
MONDAY 26 JUNE 2017: Morning
DURATION: 1 hour 30 minutes
plus your additional time allowance
MODIFIED ENLARGED 24pt

Candidate forename						Candidate surname				
Centre number						Candidate number				

Candidates answer on the Question Paper.

OCR SUPPLIED MATERIALS:

None

OTHER MATERIALS REQUIRED:

None

READ INSTRUCTIONS OVERLEAF



INSTRUCTIONS TO CANDIDATES

Write your name, centre number and candidate number in the boxes on the front page. Please write clearly and in capital letters.

Use black ink. HB pencil may be used for graphs and diagrams only.

Answer ALL the questions in Section A AND B.

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. If additional space is required, you should use the lined page(s) at the end of this booklet. The question number(s) must be clearly shown.

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.

SECTION A is worth 30 MARKS. You are advised to spend no more than 45 minutes on it.

SECTION B is worth 30 MARKS. You are advised to spend no more than 45 minutes on it.

You will need to select from the tables in SECTION B when answering Question 4 and Question 5 of this paper. ‘Trend setter’ and ‘Iconic product’ must be linked to the ‘Era or Movement’.

Your quality of written communication will be assessed in questions marked with an asterisk (*).

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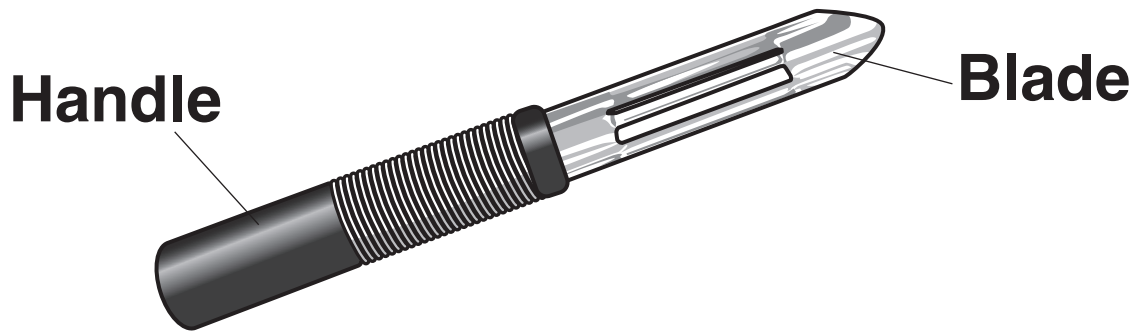
Answer ALL the questions.

SECTION A

You are advised to spend 45 minutes on this section.

1 Fig. 1 shows a vegetable peeler.

FIG. 1



(a) Give THREE design requirements of a vegetable peeler.

- 1 _____
- 2 _____
- 3 _____

[3]

(b) The handle of the vegetable peeler is made of wood and string.

Explain why string is added to the wooden handle.

[2]

(c) Kitchen utensils like the vegetable peeler are often marketed with a product label.

Give TWO examples of how labelling is used to protect the consumer.

1 _____

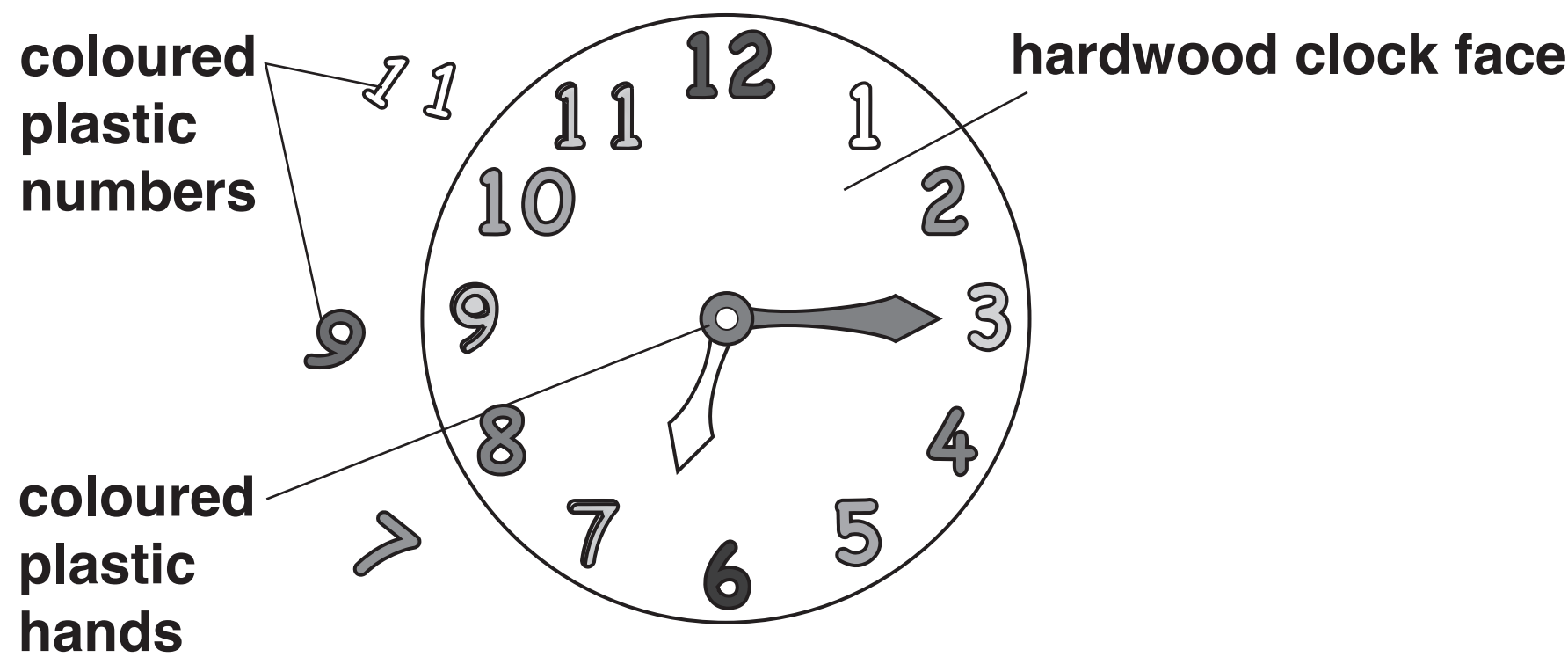
2 _____
_____ **[2]**

(d) Explain how the British Standards Institute helps designers create products that are safe and fit for purpose.

_____ **[3]**

2 Fig. 2 shows the parts of an educational toy clock.

FIG. 2



(a) Aesthetics can influence the appeal of a product.

Give **THREE** aesthetic requirements for the toy clock to ensure it appeals to young children.

1 _____

2 _____

3 _____

[3]

(b) The six colours on a simple colour wheel are:

Blue Green Orange Red Purple Yellow

Using the colours listed above:

(i) Give ONE colour that would contrast with red.

_____ **[1]**

(ii) Give ONE colour that would be complementary to red.

_____ **[1]**

(c) Explain how the educational toy clock could be modified to allow the numbers to be removed and replaced more easily.

_____ **[2]**

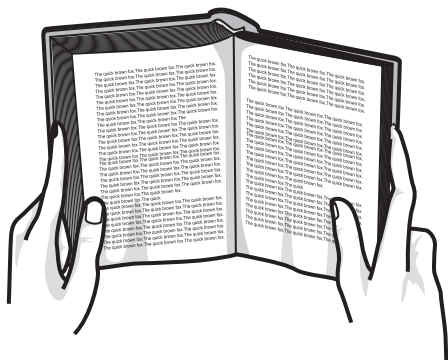
(d) Explain why consumers want new products to be made from biodegradable materials rather than non-biodegradable materials.

_____ **[3]**

3 Fig. 3 shows two ways of reading a book.

FIG. 3

Reading a paper copy of a book.



Reading an eBook on a tablet.



(a) The way that many people read books has changed over the past ten years.

Give THREE benefits for the user of reading a book on a tablet.

1 _____

2 _____

3 _____

[3]

(b) Mobile devices such as a tablet usually use a rechargeable battery as an energy source.

Give TWO reasons why the size and weight of the battery have to be considered when designing mobile digital devices.

1 _____

2 _____

[2]

(c) Most digital devices are available in different colours.

Give TWO reasons why manufacturers make products in a range of colours.

1 _____

2 _____

[2]

(d) The development of digital technology can be seen to impact on many aspects of modern life.

Explain how digital technologies have changed the way products are marketed and advertised. Use ONE specific example of a digital technology in your answer.

[3]

SECTION B

You are advised to spend 45 minutes on this section.

This question draws upon the research you carried out as part of your examination preparation.

4 The table below shows the eras and trend setters for this examination.

Era or movement	Trend setter
1920s to present	Folding tubular steel products
1960s to present	Programmable components
1920s to present	Trouser suit
1950s to present	Laminated packaging materials
1800s to present	Mediterranean diet

(a)*Select ONE trend setter from the table above.

Trend setter chosen _____

Explain why this trend setter has been so influential. [6]

(b) The table below shows the iconic products for this examination.

Era or movement	Iconic product
1920s to present	Maclaren B-01 buggy
1960s to present	PIC microcontroller
1920s to present	Ossie Clark trouser suits
1950s to present	Tetra Pak
1800s to present	Pizza

Select ONE iconic product from the table above.

Iconic product chosen _____

Give TWO reasons why the product you have chosen has been so influential.

You must justify each answer.

1 _____

2 _____

[4]

5 This question draws upon the research you carried out as part of your examination preparation.

You will need to:

write a specification

produce a range of initial ideas

develop ONE idea

evaluate your final proposal.

Five different design needs are given below.

Indicate using a tick (✓) ONE design need you are going to consider.

Design need	✓
A camping picnic table which is compact and easily transported.	
An automatic cat feeding device for when owners are away on holiday.	
A trouser suit for a young child to be worn at a 60s themed party.	
An easy carry disposable drinks device used at a summer event.	
A healthy Mediterranean menu for a school lunch time.	

(a) Identify FOUR important design specification points for the design need you have chosen to consider.

These must specify key design requirements other than those detailed in the design need above.

1 _____

2 _____

3 _____

4 _____

[4]

(b) Use sketches and notes to produce a range of initial ideas that meet your specification. [6]

(c) Use sketches and notes to develop ONE of your initial ideas to meet the original design need.

Give details of materials and construction. [6]

[illegible]

END OF QUESTION PAPER

ADDITIONAL ANSWER SPACE

If additional space is required, you should use the following lined page(s). The question number(s) must be clearly shown in the margin(s).

[illegible]

