

**OXFORD CAMBRIDGE AND RSA EXAMINATIONS**  
**GCSE**  
**A554/01**  
**DESIGN AND TECHNOLOGY**  
**Product Design**  
**Designing Influences**  
**MONDAY 22 JUNE 2015: Morning**  
**DURATION: 1 hour 30 minutes**  
**plus your additional time allowance**  
**MODIFIED ENLARGED 24pt**

<b>Candidate forename</b>						<b>Candidate surname</b>				
<b>Centre number</b>						<b>Candidate number</b>				

**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 first 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. 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.**

**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 (\*).**

**Any blank pages are indicated.**

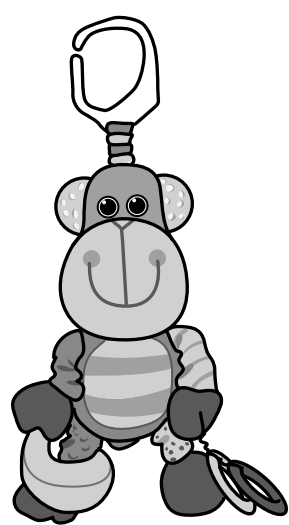
Answer ALL the questions.

SECTION A

You are advised to spend 45 minutes on this section.

1 Fig. 1 shows a child’s soft toy.

FIG. 1



(a) Give THREE design requirements of a child’s soft toy.

1 \_\_\_\_\_

2 \_\_\_\_\_

3 \_\_\_\_\_

[3]

**(b) Describe TWO ways in which anthropometric measurements could be used when designing toys for children.**

1

2

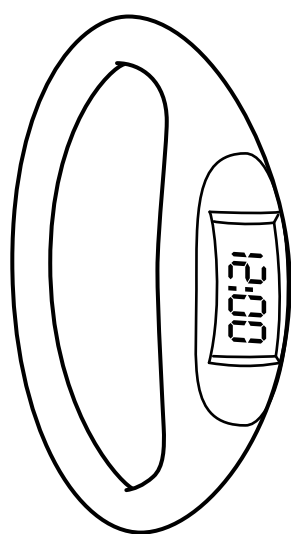
**[4]**

**(c) Explain the role of the British Standards Institution (BSI) in ensuring that toys are safe for use.**

**[3]**

2 Fig. 2 shows a digital sports watch that uses a smart material.

FIG. 2



(a) Give TWO reasons why digital sports watches are popular.  
You must justify each answer.

1 \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2 \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

[4]

- (b) (i) The strap of the digital sports watch shown in Fig. 2 contains a phosphorescent pigment.**

**State the effect this will have on the product.**

\_\_\_\_\_ [1]  
\_\_\_\_\_

- (ii) Identify ONE other smart material and give an example of its use.**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ [2]

- (c) The digital watch shown in Fig. 2 has non-replaceable parts.**

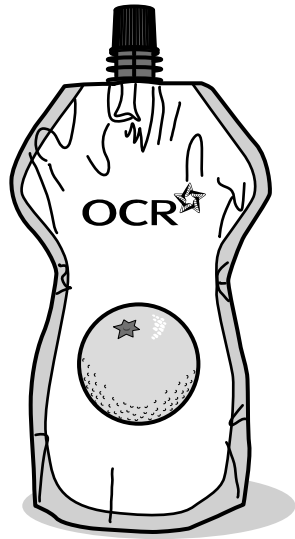
**Discuss the issues of products with parts that cannot be replaced.**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ [3]

- 3 Fig. 3 shows the packaging of a modern soft drink and the packaging of a soft drink from the 1950s.

**FIG. 3**

**modern soft  
drink packaging**



**soft drink packaging  
from the 1950s**



- (a) The design of soft drinks packaging has changed over time.

**Give THREE design features of modern soft drinks packaging that benefit the consumer.**

- 1 \_\_\_\_\_
- 2 \_\_\_\_\_
- 3 \_\_\_\_\_

**[3]**

**(b) Explain TWO ways in which design features of the modern packaging benefit soft drinks manufacturers.**

1

2

**[4]**

**(c) Explain why packaging is important in the marketing of new products.**

**[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.**

<b>ERA OR MOVEMENT</b>	<b>TREND SETTER</b>
<b>1940s to present</b>	<b>Robin Day</b>
<b>1960s to present</b>	<b>Otl Aicher</b>
<b>1970s to present</b>	<b>Microprocessors</b>
<b>1900s to present</b>	<b>Canned food products</b>
<b>1990s to present</b>	<b>Luella Bartley</b>

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

**Trend setter chosen** \_\_\_\_\_

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

[illegible]

The table below shows the iconic products for this examination.

ERA OR MOVEMENT	ICONIC PRODUCT
1940s to present	Polypropylene Stacking Chair
1960s to present	Pictograms – 1972 Olympics
1970s to present	Intel 4004 4-bit central processing unit
1900s to present	SPAM
1990s to present	Gisele Bag

(b) 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**

**give details of the final proposal.**

**Five different design needs are given below.**

**Please indicate using a tick [✓] ONE design need you are going to consider.**

<b>DESIGN NEED</b>	<b>✓</b>
<b>A piece of furniture in the style of Robin Day for a children’s nursery</b>	
<b>A sign in the style of Otl Aicher for a school design and technology department</b>	
<b>An automatic control system for a greenhouse</b>	
<b>A nutritionally balanced hot school meal using SPAM</b>	
<b>A school bag for 14 to 16 year olds in the style of Luella Bartley</b>	

**(a) Identify FOUR important design specification points for your chosen design need.**

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

**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]

**[4]**

**END OF QUESTION PAPER**



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