

**OXFORD CAMBRIDGE AND RSA EXAMINATIONS
GCSE**

A554/01

DESIGN AND TECHNOLOGY

Product Design

Designing Influences

MONDAY 27 JUNE 2016: Morning

**DURATION: 1 hour 30 minutes
plus your additional time allowance**

MODIFIED ENLARGED

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 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. 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 (*).

Any blank pages are indicated.

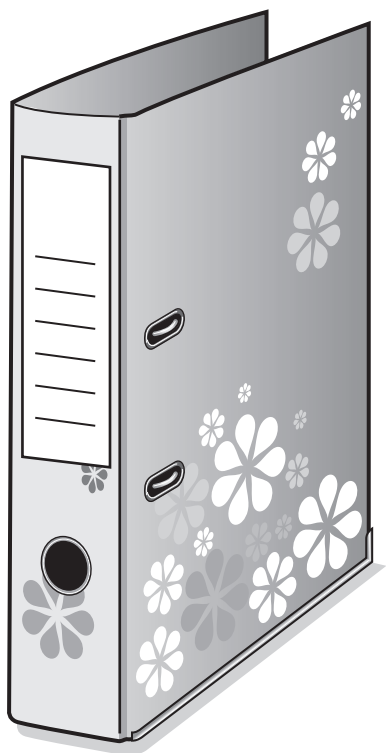
Answer ALL the questions.

SECTION A

You are advised to spend 45 minutes on this section.

1 Fig. 1 shows a stationery folder.

Fig. 1



(a) Give three design requirements of a stationery folder.

1 _____

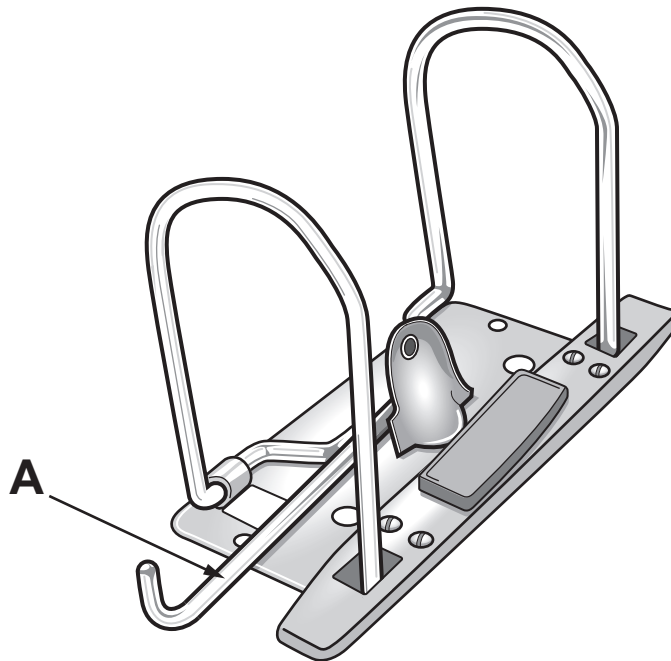
2 _____

3 _____

[3]

(b) Fig. 2 shows the mechanism inside the stationery folder.

Fig. 2



(i) State the type of mechanism labelled A.

_____ [1]

(ii) State how the mechanism can be 'modified' to make it easier for a user to operate.

_____ [1]

(c) Explain why the designer of the stationery folder carries out a life cycle assessment as part of the design process.

[2]

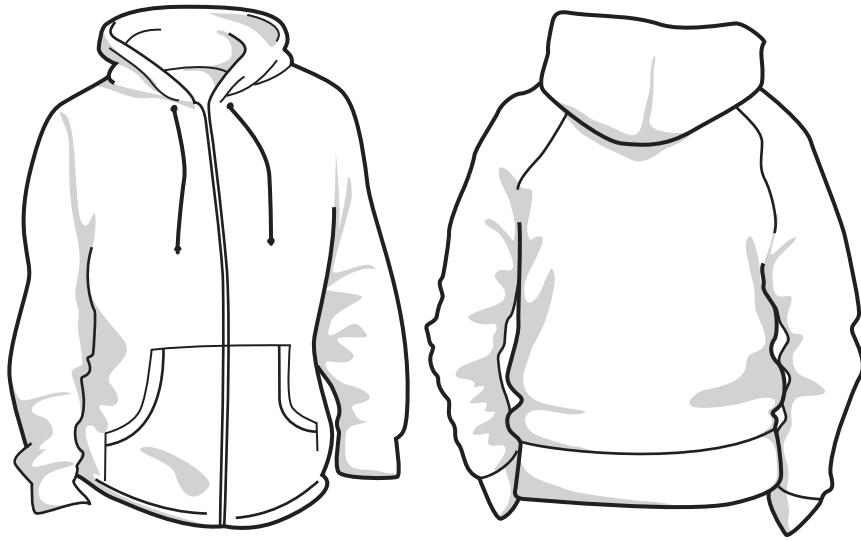
(d) Explain how the use of 3D printers can help designers develop products such as the mechanism inside the stationery folder.

[3]

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2 Fig. 3 shows an item of casual sportswear.

Fig.3



(a) Give TWO reasons why companies produce sportswear in a range of colours.

1 _____

2 _____

[2]

(b) Clothing companies often have their products manufactured in countries such as India.

Give THREE advantages to the MANUFACTURER of manufacturing products in overseas countries.

1 _____

2 _____

3 _____

[3]

(c) Explain ONE reason why companies brand sportswear products with a logo.

[2]

(d) Explain why sports brands use professional sports people to promote their products globally.

[3]

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3 Fig. 4 shows two ways of opening cans.

Fig. 4



can with modern opening method



can with traditional opening method

(a) The opening of cans has changed over time.

Give THREE advantages of the modern can-opening method that benefit the USER.

1 _____

2 _____

3 _____

[3]

(b) Explain TWO implications for the MANUFACTURER of producing a can with the modern opening method.

1 _____

2 _____

[4]

(c) Cans are a sustainable method of food packaging.

Explain how other types of food packaging could be developed to be more sustainable.

[3]

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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
1850s to present	Michael Thonet
1950s to present	IBM
1980s to present	Pineapple – Debbie Moore
1970s to present	Milton Glaser
1980s to present	Meat analogue

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

Trend setter chosen _____

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

The table below shows the iconic products for this examination.

ERA OR MOVEMENT	ICONIC PRODUCT
1850s to present	Chair no. 14
1950s to present	IBM 350 disk storage unit
1980s to present	Lycra dance wear
1970s to present	I ♥ NY logo
1980s to present	Quorn

(b) Select an 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.

Please indicate, using a tick (✓), ONE design need you are going to consider.

DESIGN NEED	✓
An item of public seating in the style of Michael Thonet.	
A wearable activity tracking device that records and stores data.	
A garment to wear on holiday in the style of ‘Pineapple – Debbie Moore’.	
A 3D promotional display for the ‘UK City of Culture 2017’ in the style of Milton Glaser.	
A lunch time snack that incorporates a meat analogue.	

(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 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]

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