

Candidate forename		Candidate surname	
Centre number		Candidate number	

**OXFORD CAMBRIDGE AND RSA EXAMINATIONS
ADVANCED GCE**

F524/02

DESIGN AND TECHNOLOGY

Product Design: Component 2

THURSDAY 23 JUNE 2011: Afternoon

DURATION: 1 hour 30 minutes

SUITABLE FOR VISUALLY IMPAIRED CANDIDATES

Candidates answer on the question paper.

OCR SUPPLIED MATERIALS:

None

OTHER MATERIALS REQUIRED:

A calculator may be used

INSTRUCTIONS TO CANDIDATES

- Write your name clearly in capital letters, your Centre Number and Candidate Number in the boxes above.
- Use black ink. Pencil may be used for graphs and diagrams only.
- This paper is to be taken with F524/01 in the same examination session of **2 HOURS 30 MINUTES**. The times given on the front of each paper are advisory.
- Components 01 and 02 should be available to candidates for the full session.
- This paper (F524/02) contains **EIGHT** Design theme based questions.
- Answer **ONE** question only.
- Read each question carefully and make sure that you know what you have to do before starting your answer.

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 **54**.
- All dimensions are in mm.
- Where appropriate, calculations should be shown.
- Follow the instructions given on the four A3 answer sheets.
- **HAND IN THE FOUR A3 ANSWER SHEETS INSIDE THIS FOLDER AT THE END OF THE EXAMINATION.**
- This folder is for F524/02 only.

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1			
2			
3			
4			
5			
6			
7			
8			
Total			

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<p style="text-align: center;">Answer ONE question only.</p> <p>1 BUILT ENVIRONMENT AND CONSTRUCTION</p> <p>There is a need to provide a wider range of facilities in a Community Farm.</p> <p>A COVERED OUTDOOR AREA TO PROVIDE WASHING FACILITIES FOR CHILDREN AND ADULTS WHO HAVE COME INTO CONTACT WITH ANIMALS IS REQUIRED.</p> <p>The facility must:</p> <ul style="list-style-type: none"> • have open access: • accommodate up to six users at a time. <p>Follow the instructions given in the four A3 answer sheets to complete the question.</p>	<p>3 FOOD</p> <p>A school is proposing to install vending machines to dispense snack breakfast products.</p> <p>A SUITABLE SNACK PRODUCT FOR TEENAGERS IS REQUIRED.</p> <p>The product must:</p> <ul style="list-style-type: none"> • be ready to eat; • meet the nutritional needs of teenagers. <p>Follow the instructions given on the four A3 answer sheets to complete the question.</p>
<p>2 ENGINEERING</p> <p>Many decorating and maintenance jobs around the house require a person to work on step ladders, which can be difficult to manoeuvre and store.</p> <p>A LIGHTWEIGHT WORK PLATFORM IS REQUIRED FOR USE AROUND THE HOUSE.</p> <p>The work platform must:</p> <ul style="list-style-type: none"> • have a platform height of 500 mm; • be easy to store when not in use. <p>Follow the instructions given on the four A3 answer sheets to complete the question.</p>	<p>4 GRAPHIC PRODUCTS</p> <p>A company providing party accessories wishes to extend its range of products.</p> <p>A MATCHING FACEMASK AND HAT FOR CHILDREN TO WEAR AT PARTIES IS REQUIRED.</p> <p>The product must:</p> <ul style="list-style-type: none"> • include 3D features; • be produced as a batch of 10 000. <p>Follow the instructions given on the four A3 answer sheets to complete the question.</p>

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<p>5 MANUFACTURING</p> <p>The storage of batteries prior to disposal needs to be done in such a way that they are kept safely away from young children.</p> <p>A CHILD-PROOF CONTAINER FOR USED BATTERIES IS REQUIRED.</p> <p>The container must:</p> <ul style="list-style-type: none"> • allow different sizes of battery to be stored separately. • be suitable for production in batches of 10 000. <p>Follow the instructions given on the four A3 answer sheets to complete the question.</p>	<p>7 SYSTEMS AND CONTROL</p> <p>A kitchen appliance manufacturer has identified that there is a problem with saucepans boiling over.</p> <p>A PRODUCT THAT PREVENTS SAUCEPANS FROM BOILING OVER IS REQUIRED.</p> <p>The product must:</p> <ul style="list-style-type: none"> • work with a range of saucepans; • alert the cook before the saucepan boils over. <p>Follow the instructions given on the four A3 answer sheets to complete the question.</p>
<p>6 RESISTANT MATERIALS</p> <p>A pre-school group for 3–4 year old children wishes to provide facilities for painting and drawing.</p> <p>A UNIT TO ENABLE CHILDREN TO DRAW AND PAINT IS REQUIRED.</p> <p>The unit must:</p> <ul style="list-style-type: none"> • allow children to work in a standing or seated position; • fold away for ease of storage. <p>Follow the instructions given on the four A3 answer sheets to complete the question.</p>	<p>8 TEXTILES</p> <p>A toy manufacturer requires some new innovative designs for its educational toy range.</p> <p>A TEXTILE EDUCATIONAL TOY IS REQUIRED.</p> <p>The toy must:</p> <ul style="list-style-type: none"> • be suitable for children under 5 years of age; • help the child develop their skills of coordination. <p>Follow the instructions given on the four A3 answer sheets to complete the question.</p>

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CIRCLE THE QUESTION NUMBER YOU ARE ANSWERING

1 2 3 4 5 6 7 8

(a) Give THREE justified specification points.

1 _____

Instruction to candidates

ALLOCATION OF MARKS FOR PAPER F524/02

(a) specification points [6]

2 _____

(b) range of developed ideas [33]

(c) final developed outcome [9]

(d) communication [6]

[Total: 54]

3 _____

All dimensions are in millimetres

Where necessary, calculators may be used

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	S	R	D	E	F	C	Total

_____ [6]

F524/02 PRODUCT DESIGN

CANDIDATE NAME

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(b) Ideas with development

- **A range of ideas** [15]
- **Consider manufacturing/construction detail** [12]
- **Evaluate ideas with reference to specification and volume production** [6]

[Total: 33]

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R	
D	
E	

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(c) Final Developed Outcome

Sketch a final developed outcome. Justify key design features. [9]

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C	

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