UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

DESIGN AND TECHNOLOGY **0445/12**

Paper 1 Design **May/June 2012**

1 hour 15 minutes

Candidates answer on the pre-printed A3 Answer Sheets.

Additional Materials: Standard drawing equipment

To be taken together with the optional paper for which you have been entered in one session of 2 hours and 15 minutes.

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READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name in the spaces on **both** printed Answer Sheets.
Write in dark blue or black pen.
You may use a soft pencil for any diagrams, graphs or rough working.
Do not use staples, paper clips, highlighters, glue or correction fluid.

Answer **one** question.
Write/draw your answers in the spaces provided on the Answer Sheets.
You may use a calculator.

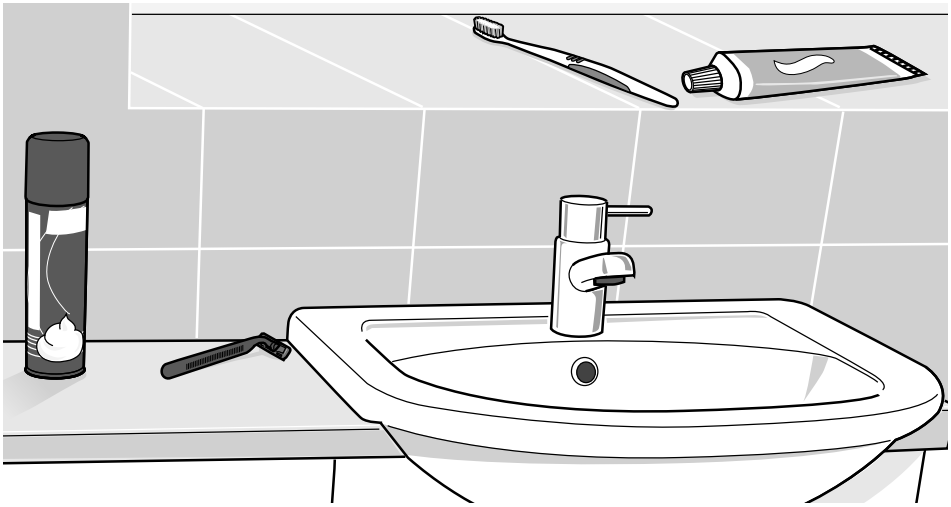
At the end of the examination, fasten all your work securely together.
The number of marks is given in brackets [ ] at the end of each question or part question.

This document consists of **4** printed A4 pages and **2** A3 Inserts.

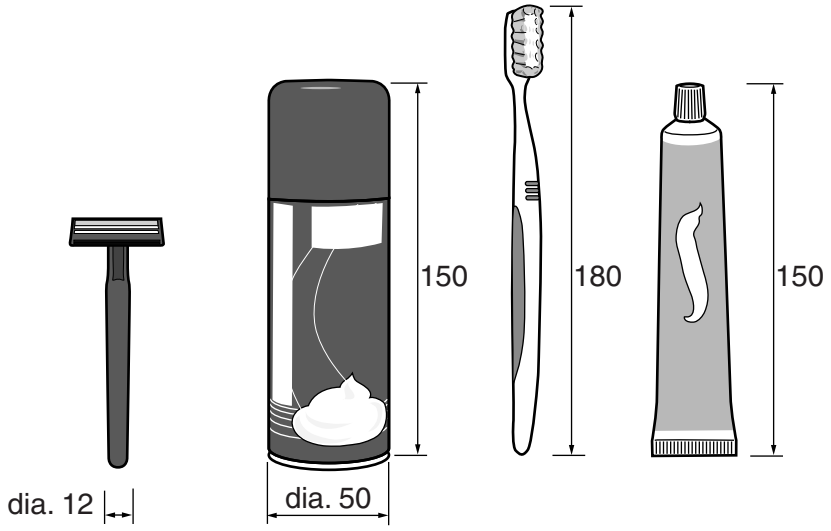
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Answer **one** question only on the A3 pre-printed answer sheets provided.

1 Cleaning can be difficult when items are left lying around in a bathroom.



The following items need to be stored ready for daily use.



Design a unit that would hold all of the items shown above.

(a) List **four** additional points about the function of such a unit that you consider to be important. [4]

(b) Use sketches and notes to show **two** places in a bathroom where such a unit might be positioned. [4]

(c) Develop and sketch **three** ideas for the unit. [12]

(d) Evaluate your ideas and justify why you have chosen **one** idea to develop more fully. [8]

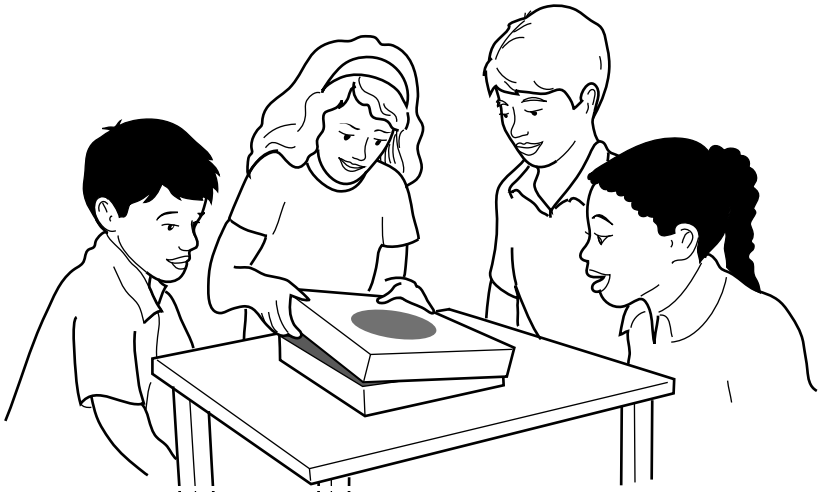
(e) Draw, using a method of your own choice, a full solution to the problem. Include construction details and major dimensions. [12]

(f) Suggest suitable specific materials for your solution and give reasons for your choice. [4]

(g) Outline a method used to manufacture **one** part of your solution in the school workshop. [6]

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2 Games are a good way of encouraging children to think about environmental issues.



Design a game called SAVE OUR PLANET that could be played by up to four children, 8 to 10 years old. The design should be made in lightweight materials and include the packaging.

(a) List **four** additional points about the function of such a game that you consider to be important. [4]

(b) List **four** environmental issues on which games could be based. [4]

(c) Develop and sketch **three** ideas for a game. [12]

(d) Evaluate your ideas and justify why you have chosen **one** idea to develop more fully. [8]

(e) Draw, using a method of your own choice, a full solution to the problem. Include construction details and major dimensions. [12]

(f) Suggest suitable specific materials for your solution and give reasons for your choice. [4]

(g) Outline a method of producing a prototype of your game in the school graphics studio. [6]

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[Turn over

3 Cooking outdoors on an open fire is very popular but it is often difficult to hold food so that it is cooked properly.



Design a cooking device that would hold a piece of meat or fish over an open fire so that all sides of the food are cooked.

(a) List **four** additional points about the function of such a cooking device that you consider to be important. [4]

(b) Use sketches and notes to show **two** mechanisms that would allow food to be turned while over the fire. [4]

(c) Develop and sketch **three** ideas for the cooking device. [12]

(d) Evaluate your ideas and justify why you have chosen **one** idea to develop more fully. [8]

(e) Draw, using a method of your own choice, a full solution to the problem. Include construction details and major dimensions. [12]

(f) Suggest suitable materials for your solution and give reasons for your choice. [4]

(g) Outline a method used to manufacture **one** part of your solution in the school workshop. [6]

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