



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

DESIGN AND TECHNOLOGY

0445/13

Paper 1 Design

October/November 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.

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.

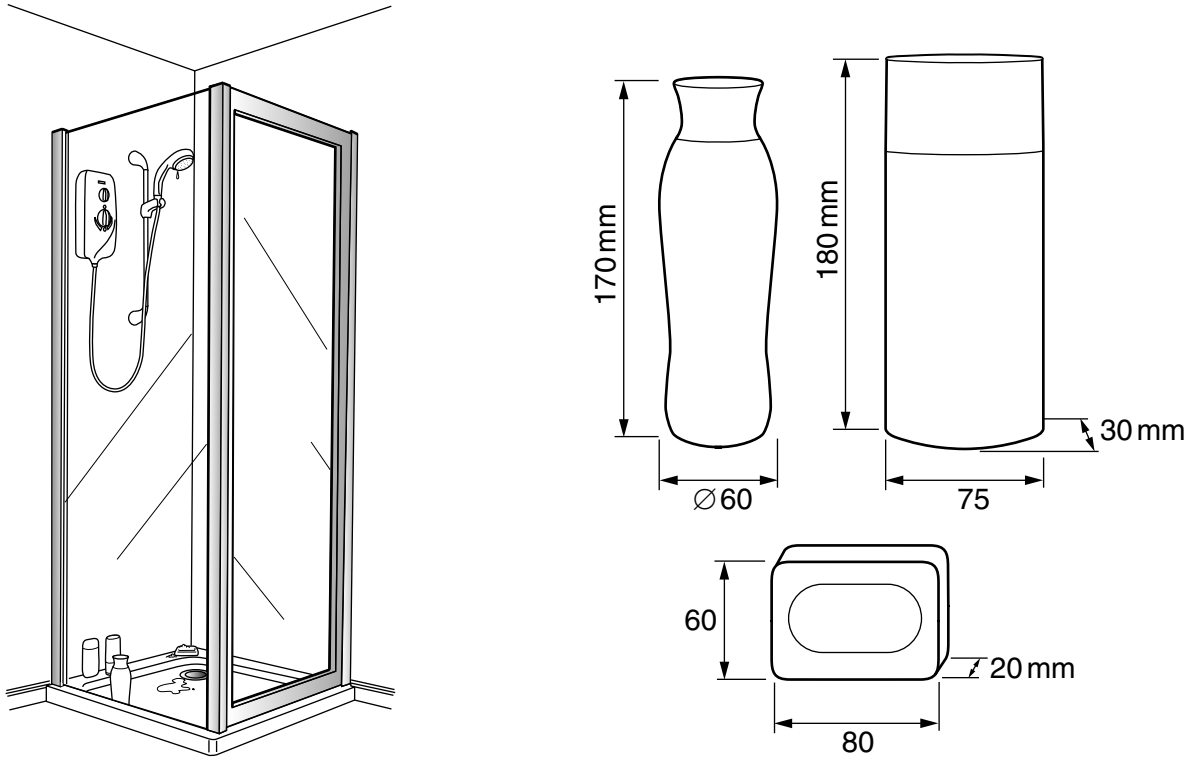
The number of marks is given in brackets [] at the end of each question or part question.

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



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

- 1 When taking a shower, it is convenient to have essential toiletries, such as shampoo and soap close to hand.



Design a storage device for inside a shower cubicle that will hold at least two bottles of shampoo and a bar of soap.

- (a) List **four** additional points about the function of such a storage device that you consider to be important. [4]
- (b) Use sketches and notes to show **two** methods which would allow easy access to storage systems. [4]
- (c) Develop and sketch **three** ideas for the storage 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 specific materials for your solution and give reasons for your choice. [4]
- (g) Outline a method of producing **one** part of your solution in the school workshop. [6]

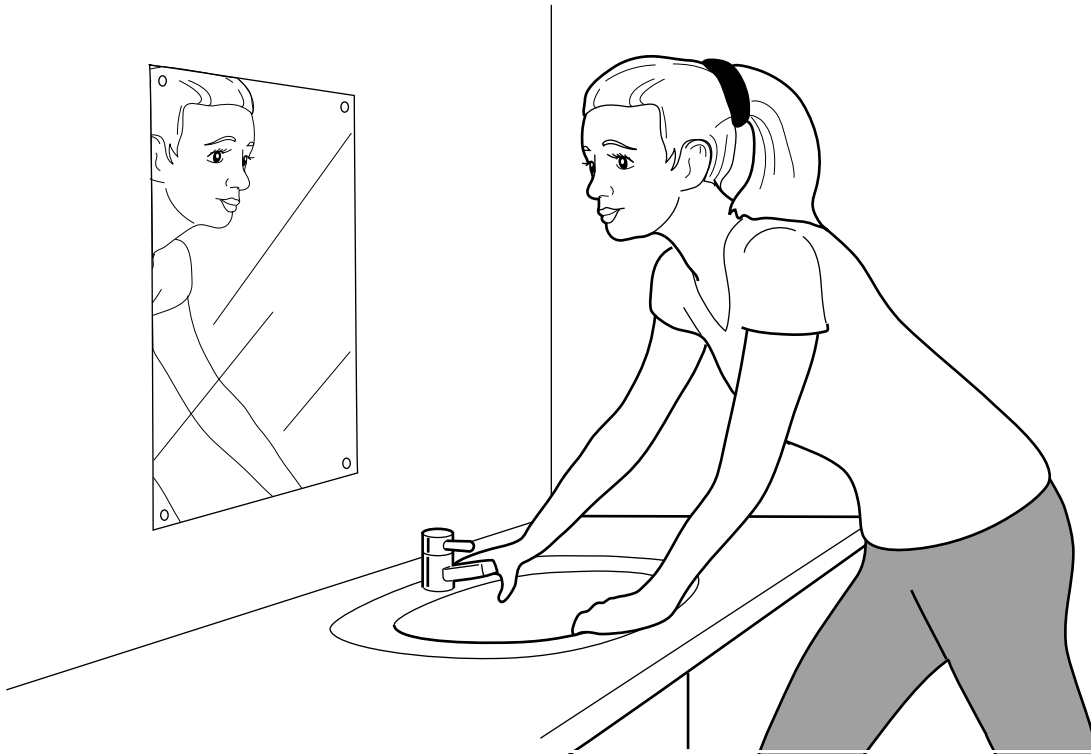
- 2 A shop selling sun protection products requires a point-of-sale display stand which explains the different sun protection factors. Sun Protection Factors (SPF) 15, 30 and 50 are available; SPF 15 gives the least protection and SPF 50 gives the most protection.



Design a point-of-sale display stand to promote the use of sun protection products, emphasising the increasing protection offered by the products.

- (a) List **four** additional points about the function of such a display unit that you consider to be important. [4]
- (b) Use sketches and notes to show **two** methods by which items can be displayed. [4]
- (c) Develop and sketch **three** ideas for the display 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 of producing a prototype of your solution in the school graphics studio. [6]

3 Fixed wall-mounted mirrors can often be difficult to use.



Design a wall-mounted mirror which can be adjusted to the needs of the person using it. Your design should incorporate a mechanism to allow the mirror to be adjusted for both height and distance from the person.

- (a) List **four** additional points about the function of such a wall-mounted mirror that you consider to be important. [4]
- (b) Use sketches and notes to show **two** methods by which wall-mounted items can be adjusted. [4]
- (c) Develop and sketch **three** ideas for the adjustable wall-mounted mirror. [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 **one** part of your solution in the school workshop. [6]

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