



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

DESIGN AND TECHNOLOGY

0445/12

Paper 1 Design

May/June 2010

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.

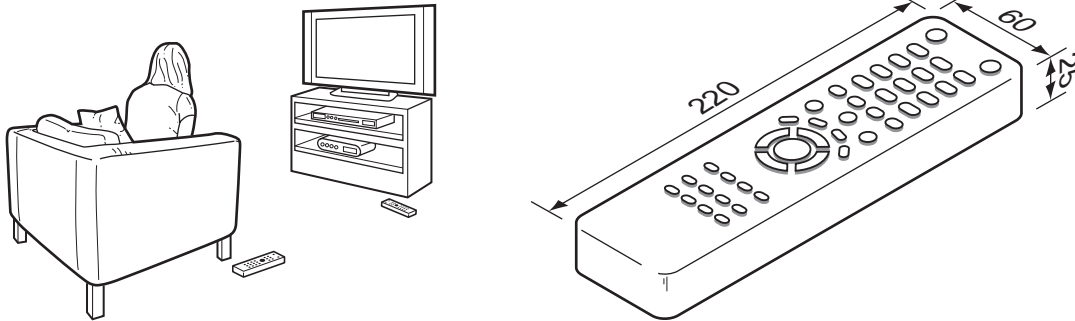
* 6 4 5 0 3 9 6 5 7 0 *

This document consists of 4 printed A4 pages and an Insert.



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

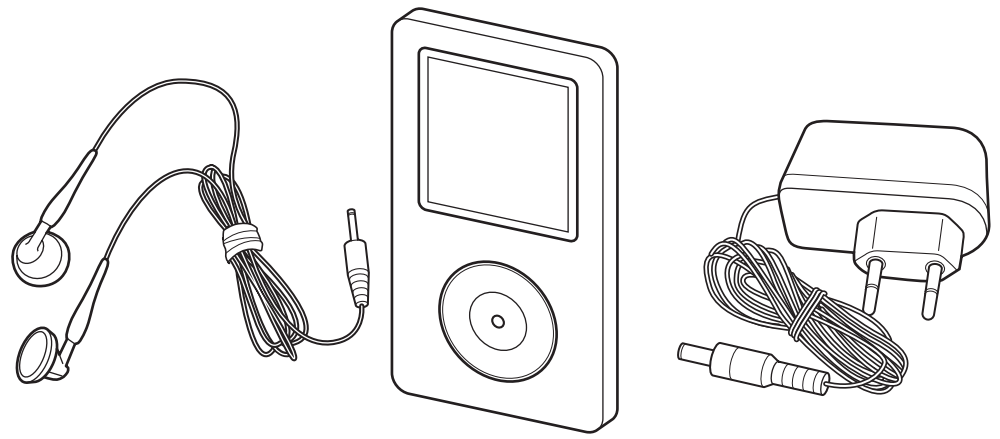
- 1 Television and DVD player remote controllers are often misplaced and not at hand when required for use.



Design a device that would store two remote controllers and enable easy access to the user.

- (a) List **four** additional points about the function of such a device that you consider to be important. [4]
- (b) Use sketches and notes to show **two** methods by which items such as remote controllers could be protected from damage when being stored. [4]
- (c) Develop and sketch 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 used to manufacture **one** part of your solution in the school workshop. [6]

2 The packaging of items for display in shops can have significant effects on the number of items sold.



Design a lightweight package for the MP3 player and accessories shown. It should be possible to view only the MP3 player when the items are in the package.

- (a) List **four** additional points about the function of such a package that you consider to be important. [4]
- (b) Use sketches and notes to show **two** methods used, so that contents can be placed into and removed easily from a package. [4]
- (c) Develop and sketch ideas for the package. [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 the package in the school graphics studio. [6]

- 3 Some young children are afraid of the dark and will go to bed only if a light is left on.



Design a battery powered light that would fit into the bedroom environment of a small child and turn off automatically after a preset time.

- (a) List **four** additional points about the function of such a light that you consider to be important. [4]
- (b) Draw any **two** types of battery that could be used to power such a light. [4]
- (c) Develop and sketch ideas for the light. [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]