



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS International General Certificate of Secondary Education

Se.com

DESIGN AND TECHNOLOGY

0445/11

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.

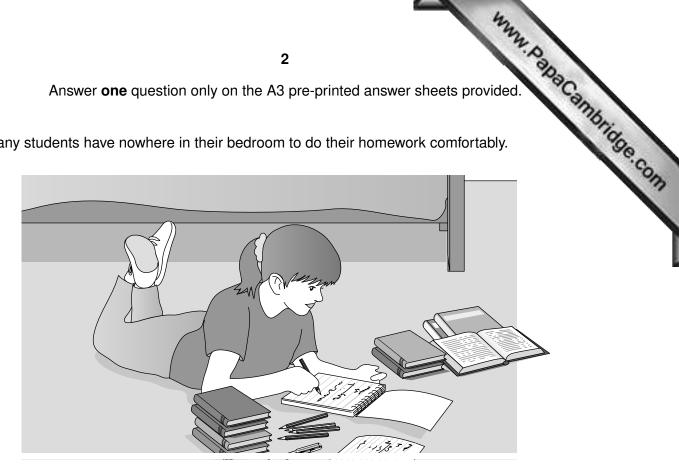
You may use a calculator.

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.



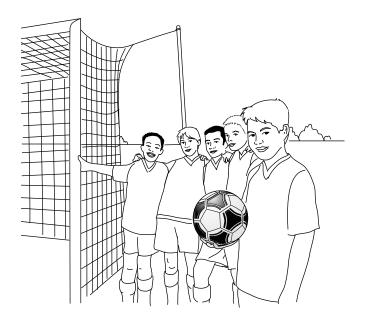
Many students have nowhere in their bedroom to do their homework comfortably. 1



Design a folding unit that could be used by a student when doing homework in a bedroom.

- (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 ways by which furniture could be made to fold. [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]
- 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]

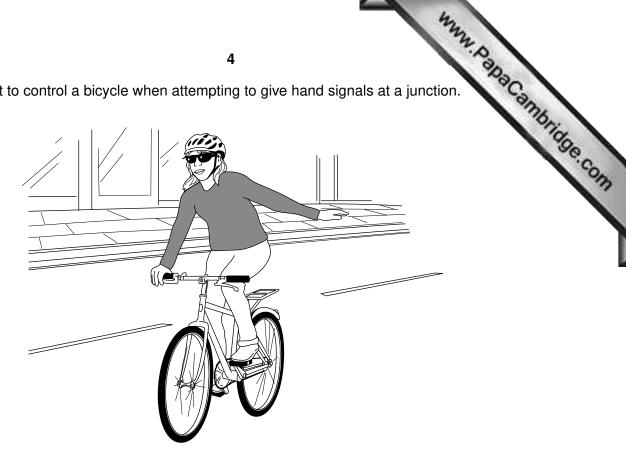
www.papaCambridge.com 2 Your school football (soccer) team is going on tour and needs souvenirs to be 3 opposing team members.



Design a lightweight folding souvenir that would act as a desk tidy and include the name of your school.

- (a) List four additional points about the function of such a souvenir that you consider to be important. [4]
- (b) Use sketches and notes to show two methods by which joints can be made in card and other lightweight materials. [4]
- (c) Develop and sketch three ideas for the souvenir. [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]
- 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 It is difficult to control a bicycle when attempting to give hand signals at a junction.



Design a direction-indicating system that could be attached to a bicycle.

- (a) List four additional points about the function of such an indicating system that you consider to be important. [4]
- (b) Use sketches and notes to show one mechanical device and one electronic system that could be used to indicate direction. [4]
- (c) Develop and sketch three ideas for the indicating system. [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]
- 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]