Cambridge Assessment International Education

Cambridge IGCSE™

DESIGN & TECHNOLOGY **0445/12**

Paper 1 Product Design **May/June 2025**

1 hour 15 minutes

1581660107

You must answer on the two pre-printed A3 answer sheets

You will need: Two A3 pre-printed answer sheets (enclosed)
Standard drawing equipment
Coloured pencils

INSTRUCTIONS

- Answer **one** question.
- Use an HB pencil for any drawings and a black or dark blue pen for any writing.
- Write your name, centre number and candidate number in the space on **both** pre-printed answer sheets.
- Answer in the space provided on the answer sheets.
- Do **not** use an erasable pen, staples, paper clips, glue or correction fluid.
- Do **not** write on any bar codes.
- You may use a calculator.
- You may use standard drawing equipment, including coloured pencils.
- At the end of the examination, hand in your named A3 answer sheets. Do **not** fasten them together and do **not** punch holes in the sheets or tie with string.

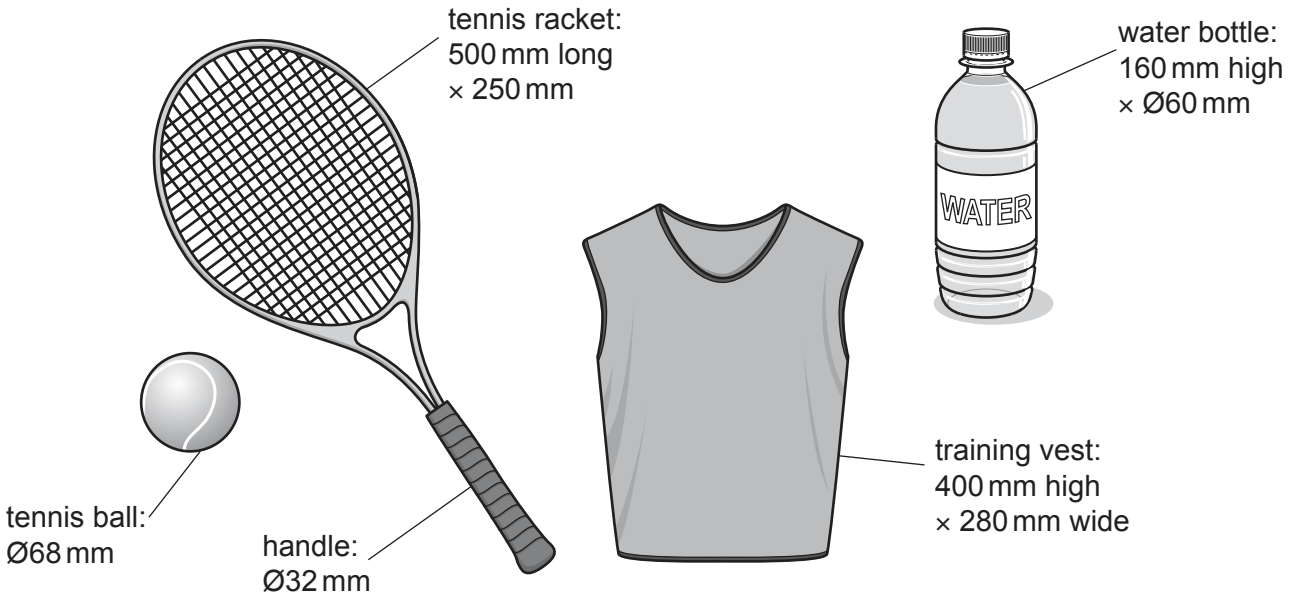
INFORMATION

- The total mark for this paper is 50.
- The number of marks for each question or part question is shown in brackets [ ].
- All dimensions are in millimetres unless otherwise stated.

This document has **4** pages.

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

1 Sports coaches use equipment when they are coaching young players.



Design a unit for moving **twelve** sets of the tennis training equipment shown from a storeroom to a tennis court. The unit must be able to be moved by **one** person and allow all equipment to be easily accessed.

(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** methods of making a product moveable. [4]

(c) Develop and sketch **three** separate ideas for the unit for moving tennis training equipment. [12]

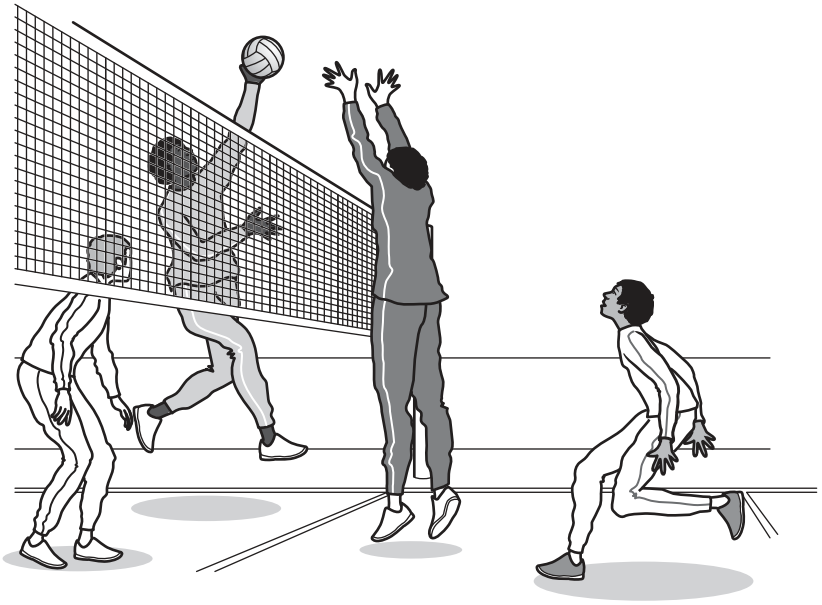
(d) Evaluate your three ideas. Choose **one** idea to develop further and justify your choice. [8]

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

(f) Suggest **two** suitable specific materials for the solution you have drawn in part **(e)** and give reasons for your choice. [4]

(g) Outline a method that could be used to manufacture **one** part of your solution drawn in part **(e)**. Include the names of the tools used. [6]

2 New sporting products are often promoted by being placed on a point-of-sale display.



Apex volleyball:
Ø210 mm

Design a flat-packed point-of-sale display for the new Apex volleyball. The point-of-sale display must be floor standing, made from lightweight graphic materials and display **one** volleyball so that it can be clearly seen.

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

(b) Use sketches and notes to show **two** methods of displaying a spherical object so that it can be clearly seen. [4]

(c) Develop and sketch **three** separate ideas for the point-of-sale display for the Apex volleyball. [12]

(d) Evaluate your three ideas. Choose **one** idea to develop further and justify your choice. [8]

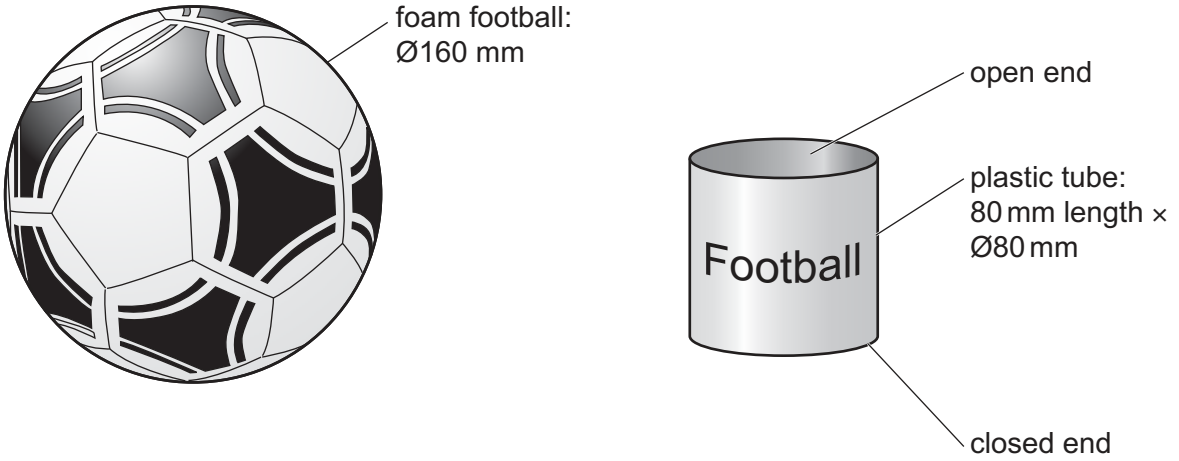
(e) Draw, using a method of your own choice, a full solution to the design problem. Include construction details and important dimensions. [12]

(f) Suggest **two** suitable specific materials for the solution you have drawn in part **(e)** and give reasons for your choice. [4]

(g) Outline a method that could be used to manufacture **one** part of your solution drawn in part **(e)**. Include the names of the tools used. [6]

[Turn over

3 Lightweight foam footballs are used by children when playing indoor sports.



Design a device that will compress and insert the foam football into the plastic tube so that it takes up less space when on sale in a shop. The device must close the open end of the tube once the football is inserted.

(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 of closing the open end of a tube. [4]

(c) Develop and sketch **three** separate ideas for the device that will compress and insert the foam football into the tube. [12]

(d) Evaluate your three ideas. Choose **one** idea to develop further and justify your choice. [8]

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

(f) Suggest **two** suitable specific materials for the solution you have drawn in part **(e)** and give reasons for your choice. [4]

(g) Outline a method that could be used to manufacture **one** part of your solution drawn in part **(e)**. Include the names of the tools used. [6]