



# Cambridge International AS & A Level

CANDIDATE  
NAME

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CENTRE  
NUMBER

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**DESIGN & TECHNOLOGY**

**9705/03**

Paper 3 A Level Written Paper

**For examination from 2025**

SPECIMEN PAPER

**2 hours 30 minutes**

You must answer on the question paper.

You will need: Standard drawing equipment  
Coloured pencils  
Calculator

## INSTRUCTIONS

- Answer **all** questions.
- Use a black or dark blue pen.
- Write your name, centre number and candidate number in the boxes at the top of the page.
- Write your answer to each question in the space provided.
- Do **not** use an erasable pen or correction fluid.
- Do **not** write on any bar codes.
- You may use a pencil or coloured pencils for any sketches, drawings or rough working.
- You may use 30°/60° and 45° set squares, a pencil compass and templates/guides if appropriate for any sketches or drawings.

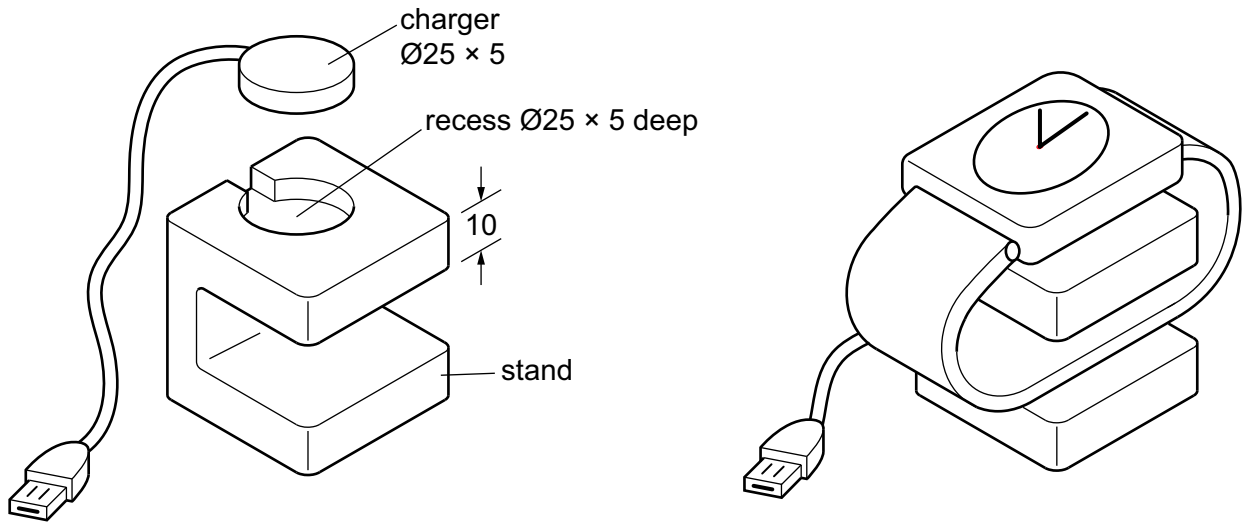
## INFORMATION

- The total mark for this paper is 100.
- 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 **16** pages. Any blank pages are indicated.

Answer **all** questions.

1 Fig. 1.1 shows a stand to hold a smart watch and charger.



**Fig. 1.1**

(a) State a suitable material for the stand shown in Fig. 1.1.

Give **two** reasons to justify your choice.

Material .....

Reason 1 .....

Reason 2 .....

[3]

- (b) Use sketches and notes to show how you would make one stand as shown in Fig. 1.1 in a school workshop.

In your response, you should give details of any tools and equipment you would use.

- (c) Use sketches and notes to describe the changes which may be necessary to the design, manufacturing method and the materials selected, to produce 5000 identical stands.

2 (a) Explain what is meant by the term quality assurance.

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..... [2]

(b) Explain **two** benefits of introducing Total Quality Management (TQM) procedures in a manufacturing company.

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2 .....

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..... [4]

(c) Use sketches and notes to show a method of testing the hardness of a material.

[4]

3 (a) A company is designing a product for a target group of customers.

Explain why information about the socio-economic background of target customers is important to have when designing a product.

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(b) Explain **one** factor that a company would consider when setting the price of a product.

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(c) Explain **two** disadvantages of a product extension strategy that adds more features to a product.

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4 (a) Explain the purpose of a prototype when manufacturing products.

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..... [2]

(b) Explain **one** feature of concurrent engineering.

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..... [2]

(c) Discuss the economic and social impact of the use of automated production systems in the manufacture of products.

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5 (a) Describe **one** service sector in the design and manufacturing industry.

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..... [2]

(b) Explain **one** type of software program that is used in the development of products.

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..... [2]

(c) Discuss the advantages of using digital communication methods in the design of products.

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- 6 A company wants to develop a product that could be used for exercise at home.

The design specification states that the product must:

- enable exercise of at least one muscle group: arms, legs or stomach
- be easily stored after use
- be manufactured as a batch of 100.

- (a) Use sketches and notes to produce **two** different innovative ideas for a product that would enable exercise at home.

- (i) Idea 1

(ii) Idea 2

[6]

(b) Evaluate your **two** ideas to select a final proposal for a product that could be used for exercise at home.

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- (c) Use sketches and notes to develop your chosen idea to show details of functions, materials, construction and finishes.

(d) Using a method of your own choice, draw the complete design solution.

Include key details and dimensions.



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