



# Cambridge International AS Level

CANDIDATE NAME

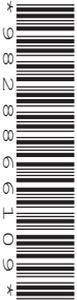


CENTRE NUMBER

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**SPORT & PHYSICAL EDUCATION**

**8386/11**

Paper 1 Theory

**May/June 2025**

**1 hour 45 minutes**

You must answer on the question paper.

No additional materials are needed.

## INSTRUCTIONS

- Answer **all** questions.
- Use a black or dark blue pen. You may use an HB pencil for any diagrams or graphs.
- 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 calculator.
- You should show all your working and use appropriate units.

## INFORMATION

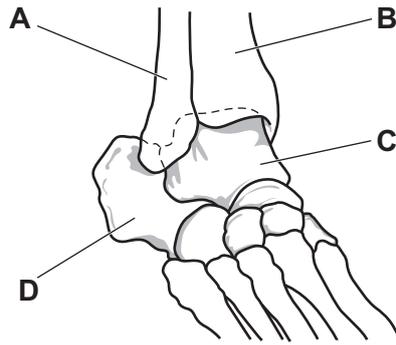
- The total mark for this paper is 70.
- The number of marks for each question or part question is shown in brackets [ ].

This document has **12** pages. Any blank pages are indicated.





2 The diagram shows a right ankle joint.



(a) Use the diagram to identify the letter labelling each of the following bones:

fibula .....

talus. ....

[2]

(b) Identify the type of synovial joint at the ankle.

..... [1]

(c) State the main agonist causing dorsiflexion of the ankle.

..... [1]



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3 (a) The photograph shows a server and a receiver during a tennis match.



The ball takes 0.20 seconds to reach the receiver once it has left the server's racket.

It takes the receiver 0.15 seconds to detect the stimulus and to decide on and start the return action.

Having decided on an action, the time taken for the receiver to perform the return action is 0.25 seconds.

Use the information provided to determine each of the following:

(i) the receiver's reaction time

reaction time = ..... seconds [1]

(ii) the receiver's response time

response time = ..... seconds [1]

(iii) the receiver's movement time.

movement time = ..... seconds [1]







4 (a) At the Tokyo Olympic Games in 2021, the men's 100-metre sprint final in track-and-field athletics was won in a time of 9.80 seconds.

(i) Calculate the winner's average speed.

Give your answer to two decimal places and include appropriate units.

average speed = ..... [2]

(ii) Speed is a scalar quantity.

Describe how velocity differs from speed.

..... [2]

(iii) Describe displacement.

..... [1]

(b) Sprinting 100 metres causes an increase in breathing rate.

Explain the role of the respiratory control centre in increasing breathing rate.

..... [5]







5 (a) The table shows some heart measurements of a trained athlete at rest.

	at rest
heart rate / beats per minute	50
stroke volume / millilitres	100

(i) Calculate the resting cardiac output of the trained athlete.

Show your working and include appropriate units.

cardiac output = ..... [3]

(ii) State a typical value for each of the following for a trained athlete during sub-maximal intensity exercise:

heart rate ..... beats per minute

stroke volume. .... millilitres [2]

(b) Identify the following:

the blood vessel carrying blood into the left atrium

.....

the blood vessel carrying blood away from the left ventricle.

..... [2]







6 (a) Describe **two** characteristics of an elite performer.

1 .....

.....

2 .....

.....

[2]

(b) State the provision needed to become an elite performer.

.....

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.....

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[4]

(c) Outline the negative consequences of using prohibited performance-enhancing drugs (PEDs) for an elite performer.

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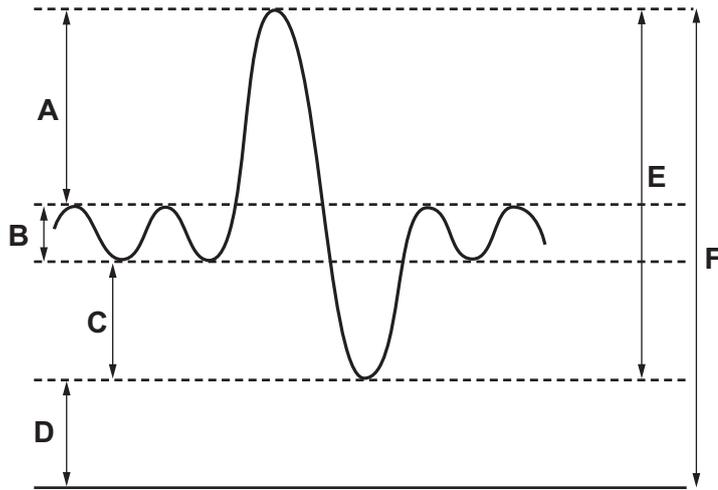
[4]

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7 The diagram represents a spirometer trace of some lung volumes.



(not to scale)

(a) Use the diagram to identify the letter that represents each of the following lung volumes:

vital capacity .....

residual volume .....

expiratory reserve volume. ....

[3]

(b) Describe the changes to lung volumes **A** and **B** as exercise starts.

**A** .....

**B** .....

[2]



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