



Cambridge International AS Level

CANDIDATE
NAME



CENTRE
NUMBER

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CANDIDATE
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SPORT & PHYSICAL EDUCATION

8386/12

Paper 1 Theory

October/November 2024

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.



- 1 The photograph shows positions during a long jump.



A **B**

- (a) (i) Complete the table to analyse the movement at the performer's right knee joint from position **A** to position **B**.

type of synovial joint	
articulating bones	and
type of movement	
main agonist	

[4]

- (ii) State the type of muscle contraction in the main agonist at the performer's right knee joint from position **A** to position **B**.

..... [1]

- (iii) Identify the antagonist muscle acting during the movement at the performer's right knee joint from position **A** to position **B**.

..... [1]

- (iv) Describe the function of antagonist muscles.

.....

..... [1]





[6]



- (c) Use specific examples from the long jump to justify the following skill classifications of the long jump:

gross

.....

.....

closed

.....

.....

low organisation

.....

.....

discrete.

.....

.....

[4]

- (d) Describe **three** different examples of the use of technology to improve performance in a track-and-field athletics event, such as the long jump.

1

.....

.....

.....

2

.....

.....

.....

3

.....

.....

.....

[6]





(e) (i) Describe each of the following:

displacement

.....

.....

distance

.....

.....

velocity

.....

.....

momentum.

.....

.....

[4]

(ii) From a stationary start it takes a long jumper 3 seconds to reach their final velocity of 9.6 metres per second.

Calculate their acceleration.

Show your working and include appropriate units.

acceleration = [3]



..... [5]

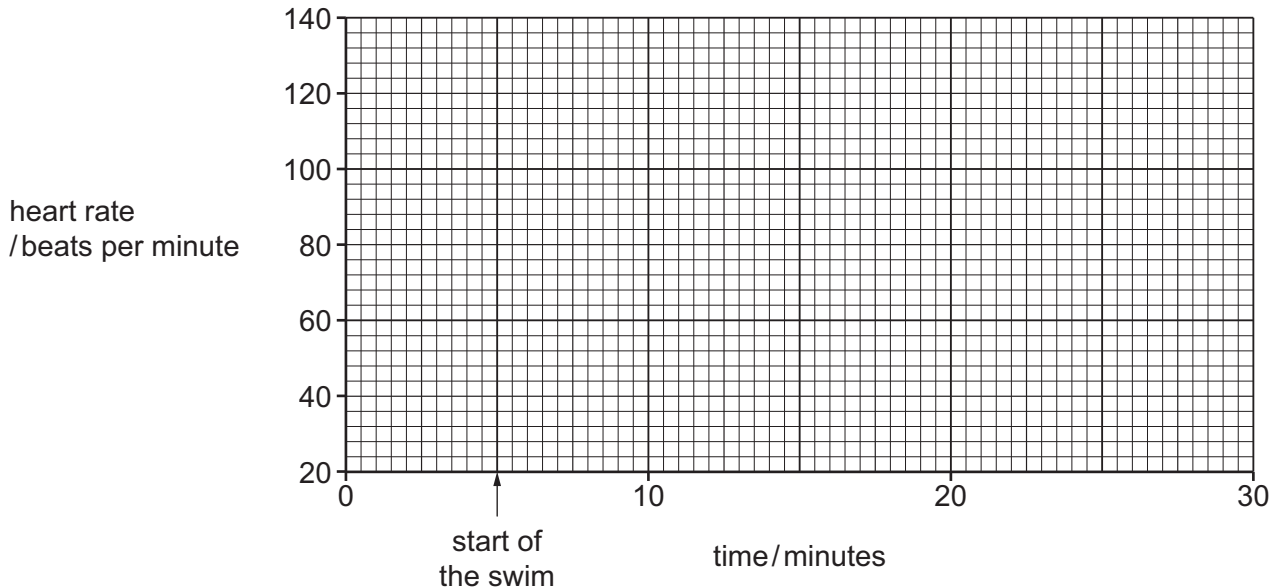


[8]



- 3** A trained swimmer performs a 15-minute swim at a constant, sub-maximal intensity.
- (a)** Use the axes to sketch a line graph showing the swimmer's heart rate during the swim and during a 10-minute recovery period. By the end of the recovery period the swimmer's heart rate has returned to a resting value.

Your graph should show typical heart-rate values for a trained performer.



- (b)** Explain the role of the autonomic nervous system in the regulation of heart rate during the swim.

..... [5]





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- 4 (a) A discus thrower rotates when throwing. The speed of rotation of the discus thrower is affected by their moment of inertia.

State the **two** factors that affect the moment of inertia of the discus thrower.

1

2

[2]

- (b) Explain how **three** named factors affect the horizontal displacement of a discus when thrown.

factor 1

explanation

.....

.....

factor 2

explanation

.....

.....

factor 3

explanation

.....

.....

[6]

- 5 Explain the role of the diaphragm muscle in the mechanics of breathing at rest.

.....

.....

.....

.....

.....

..... [3]



Evaluate the use of intrinsic feedback and extrinsic feedback at each of these **three** stages of learning.

[6]

[6]



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