Please write clearly in block capitals.

Centre number | | | | | | Candidate number | | | | |

Surname _____

Forename(s) _____

Candidate signature _____
I declare this is my own work.

A-level
PHYSICAL EDUCATION

Paper 2 Factors affecting optimal performance in physical activity and sport

Wednesday 5 June 2024 Morning Time allowed: 2 hours

Materials

For this paper you may use:
- a calculator.

Instructions
- Use black ink or black ball-point pen. Pencil should only be used for drawing.
- Fill in the boxes at the top of this page.
- Answer **all** questions. You must answer the questions in the spaces provided. Do **not** write on blank pages.
- If you need extra space for your answer(s), use the lined pages at the end of this book. Write the question number against your answer(s).
- Do all rough work in this book. Cross through any work you do not want to be marked.

Information
- The marks for questions are shown in brackets.
- The maximum mark for this paper is 105.
- Questions should be answered in continuous prose. You will be assessed on your ability to:
  - use good English
  - organise information clearly
  - use specialist vocabulary where appropriate.

For Examiner's Use	
Section	Mark
A	
B	
C	
TOTAL	

Do not write outside the box

Section A

Exercise physiology and biomechanics

Answer **all** questions in this section.

Only **one** answer per question is allowed.

For each question completely fill in the circle alongside the appropriate answer.

CORRECT METHOD ⬬ WRONG METHODS

If you want to change your answer you must cross out your original answer as shown.

If you wish to return to an answer previously crossed out, ring the answer you now wish to select as shown.

0 1 Which **one** of the following is an acute injury?

[1 mark]

A Achilles tendonitis

B Dislocated shoulder

C Tibial stress fracture

0 2 Which **one** of the following is a correct unit of measurement for acceleration?

[1 mark]

A Metres (m)

B Metres per second (m/s)

C Metres per second squared (m/s^2)

D Seconds (s)

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0 3 State **three** factors which affect stability.

[3 marks]

1 _____

2 _____

3 _____

0 4 . 1 Height of release and speed of release are two factors affecting the horizontal displacement of a projectile.

Name **one other** factor which affects the horizontal displacement of a projectile.

[1 mark]

_____

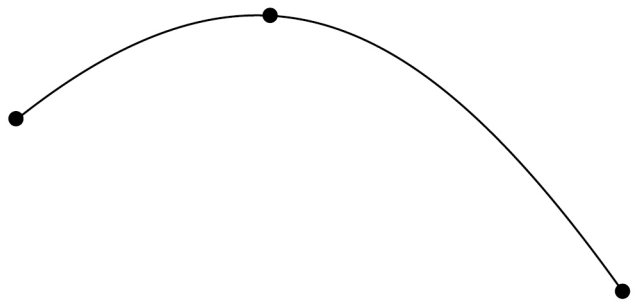
0 4 . 2 **Figure 1** shows the flight path of a shot put.

Sketch the vector components at the three points shown on **Figure 1**, which represent:

- the point of release
- the highest point of flight
- the point immediately before landing.

[3 marks]

Figure 1



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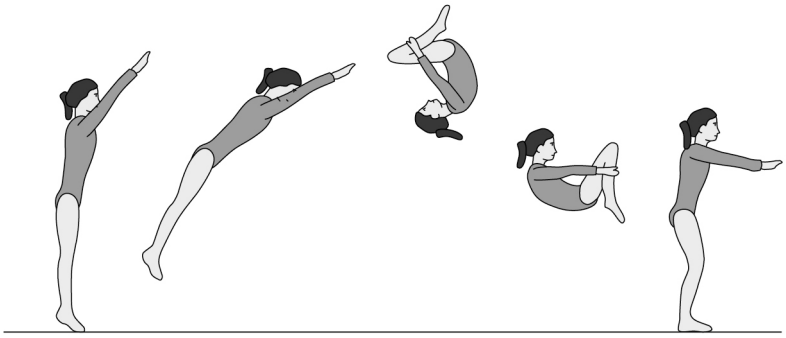
0 5 **Figure 2** shows a gymnast performing a front tuck somersault.

Figure 2



Analyse how the gymnast makes use of the principle of conservation of angular momentum when performing this front tuck somersault.

[3 marks]

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0 6 Following intense exercise elite athletes are required to maximise their recovery.

Analyse how nutrition can contribute to effective recovery from intense exercise, resulting in improved performance in the future.

[8 marks]

You may use this space to plan your answer.

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0 7 Hayley is training for a half marathon (21 km). Her target is to run the race in 1 hour and 45 minutes.

Table 1 shows her training programme in the 6 weeks leading up to the race.

Table 1

	Monday	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Saturday**	**Sunday**
Week 1	Rest	Rest	30-minute continuous run	Rest	Rest	5 km continuous run	Rest
Week 2	Rest	Rest	35-minute continuous run	Rest	Rest	6 km continuous run	Rest
Week 3	Rest	Rest	40-minute continuous run	Rest	Rest	7 km continuous run	Rest
Week 4	Rest	Rest	45-minute continuous run	Rest	Rest	8 km continuous run	Rest
Week 5	Rest	Rest	50-minute continuous run	Rest	Rest	9 km continuous run	Rest
Week 6	Rest	Rest	55-minute continuous run	Rest	Rest	**Race**	

Evaluate how well the principles of training have been applied to the training programme shown in **Table 1**.

Refer to ways that Hayley could improve her programme.

[15 marks]

You may use this space to plan your answer.

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Extra space

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Section B

Sport psychology

Answer **all** questions in this section.

0 8 Which **one** of the following terms is defined as 'individual productivity declining as group size increases'?

[1 mark]

A Co-ordinational loss

B Faulty group process

C Motivation loss

D Ringelmann effect

0 9 Which **one** of the following attributions would be categorised as unstable **and** external?

[1 mark]

A I tried hard

B I had a favourable refereeing decision

C I was the better player

D The opposition were poor

Turn over for the next question

Do not write outside the box

1 0 Bandura's model outlines four factors which will affect a performer's self-efficacy.

Describe **three** of these factors.

[3 marks]

1 _____

_____

2 _____

_____

3 _____

_____

1 1 . 1 Describe a 'performance-related goal'. Give an example from the event of javelin.

[2 marks]

Description _____

_____

Example _____

_____

1 1 . 2 Give examples of how a javelin thrower can make sure their performance-related goal is measurable and realistic.

[2 marks]

Measurable _____

_____

Realistic _____

_____

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1 2 Two dancers perform in front of a large crowd.

Analyse why the presence of an audience may impact the performances of each of the two dancers differently.

[3 marks]

Turn over for the next question

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1 3 A performer responds badly to losing and gives up easily when faced with challenging situations.

The performer's coach does **not** think that these personality traits can be changed.

Evaluate whether the coach's view is correct.

Refer to personality theories in your answer.

[8 marks]

You may use this space to plan your answer.

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1 4 One coach believes improving a runner's **motivation** is the easiest way to improve their 10 km time.

Another coach believes improving a runner's **VO_2 max** is the easiest way to improve their 10 km time.

Evaluate these statements.

Refer to how the coaches could improve a 10 km runner's motivation and VO_2 max in your answer.

[15 marks]

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Section C

Sport and society and technology in sport

Answer **all** questions in this section.

1 5 Taking performance-enhancing drugs can result in lasting damage to your health.

Which **one** of the following is most likely to occur as a result of taking erythropoietin (EPO)?

[1 mark]

A Blood clotting ⬭

B Kidney failure ⬭

C Liver damage ⬭

1 6 A sports scientist uses a metabolic cart to measure the volume of CO_2 expired by an athlete.

Which **one** of the following describes the type of data the scientist is collecting?

[1 mark]

A Qualitative and objective ⬭

B Qualitative and subjective ⬭

C Quantitative and objective ⬭

D Quantitative and subjective ⬭

Turn over for the next question

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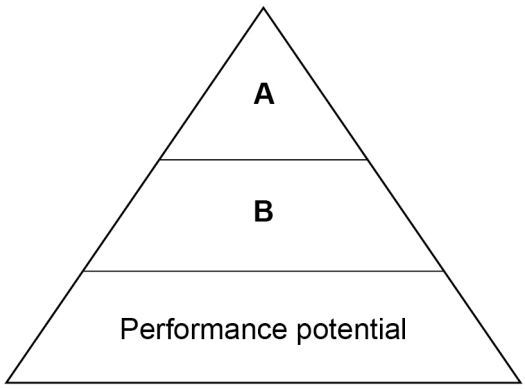
1 7 . 1 **Figure 3** represents UK Sport's World Class Performance Pathway.

Figure 3



Name the stages labelled **A** and **B** in **Figure 3**.

[2 marks]

A _____

B _____

1 7 . 2 State how many years away from winning a medal at a major championship an athlete at stages **A** and **B** would be.

[2 marks]

A _____

B _____

1 8 GPS technology can be used to measure the speed of movement and distance covered by players during a team sport.

Explain how a coach can use this GPS information to make effective decisions before **and** during a game.

[3 marks]

_____

_____

_____

_____

_____

_____

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1 9 Evaluate the impact of technological developments in sport on the audience.

[3 marks]

Turn over for the next question

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2 0 **Figure 4** shows an elite golfer putting. The golfer is struggling with their putting because of cognitive and somatic anxiety.

Figure 4

Evaluate the use of thought stopping **and** beta blockers to reduce the effects of anxiety and improve the golfer's performance in their next competition.

[8 marks]

You may use this space to plan your answer.

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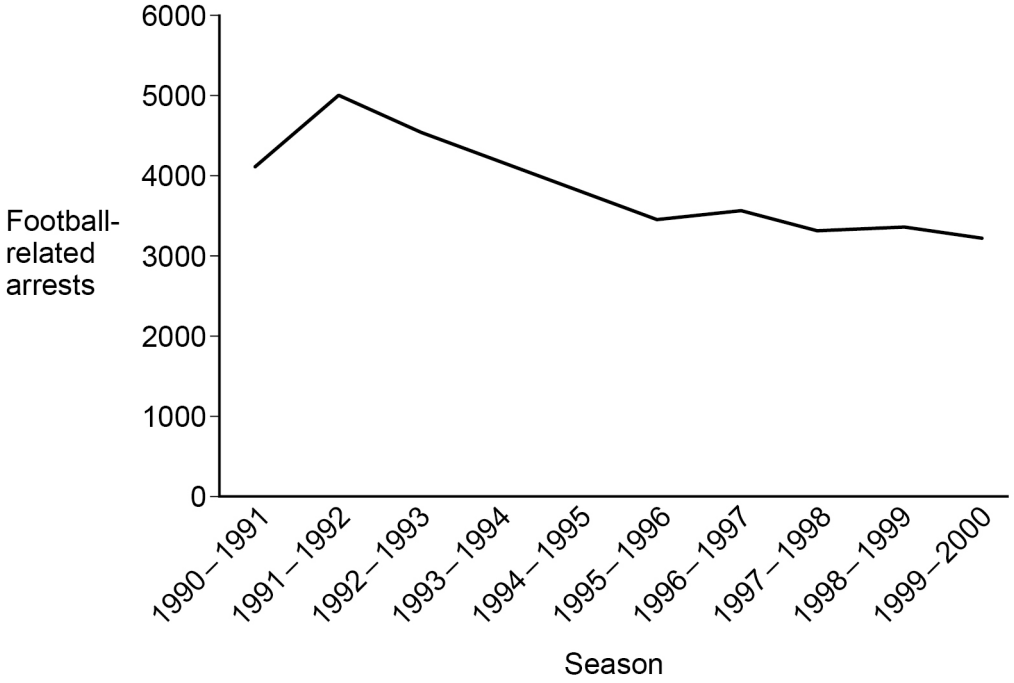
2 1 **Figure 5** shows the total number of football-related arrests in England and Wales for 10 seasons between 1990 and 2000.

Figure 5



Evaluate whether strategies used to prevent spectator violence were successful in reducing the number of football-related arrests between 1990 and 2000.

Refer to **Figure 5** in your answer.

[15 marks]

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END OF QUESTIONS

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ANSWER IN THE SPACES PROVIDED

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Question number	**Additional page, if required.** **Write the question numbers in the left-hand margin.**

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