

Surname _____

Other Names _____

Centre Number _____

Candidate Number _____

Candidate Signature _____

I declare this is my own work.

A-level

PHYSICAL EDUCATION

**Paper 2 Factors affecting optimal performance in
physical activity and sport**

7582/2

Time allowed: 2 hours

**At the top of the page, write your surname and other
names, your centre number, your candidate number
and add your signature.**

[Turn over]



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For this paper you may use:

- a calculator.

INSTRUCTIONS

- Use black ink or black ball-point pen. Pencil should only be used for drawing.
- 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.

DO NOT TURN OVER UNTIL TOLD TO DO SO



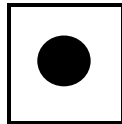
SECTION A**EXERCISE PHYSIOLOGY AND BIOMECHANICS**

Answer ALL questions in this section.

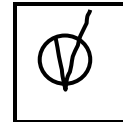
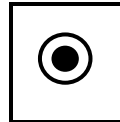
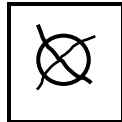
Only ONE answer per question is allowed.

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

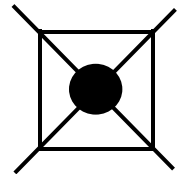
CORRECT METHOD



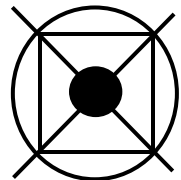
WRONG METHODS



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
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Which ONE of the following is classed as a CHRONIC injury? [1 mark]

☐

A Achilles tendonitis

☐

B Ankle sprain

☐

C Hamstring strain

☐

D Shoulder dislocation

[Turn over]



0	2
---	---

Which ONE of the following will INCREASE the drag experienced by a cyclist? [1 mark]

<input type="radio"/>

A Following another cyclist closely

<input type="radio"/>

B Travelling at a higher velocity

<input type="radio"/>

C Wearing tight-fitting clothes

0	3
---	---

Sodium bicarbonate can be taken as a dietary supplement by a 400-metre runner.

0	3	.	1
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Describe how sodium bicarbonate works to delay fatigue. [2 marks]



03.2

**State ONE negative effect of taking sodium bicarbonate.
[1 mark]**

[Turn over]



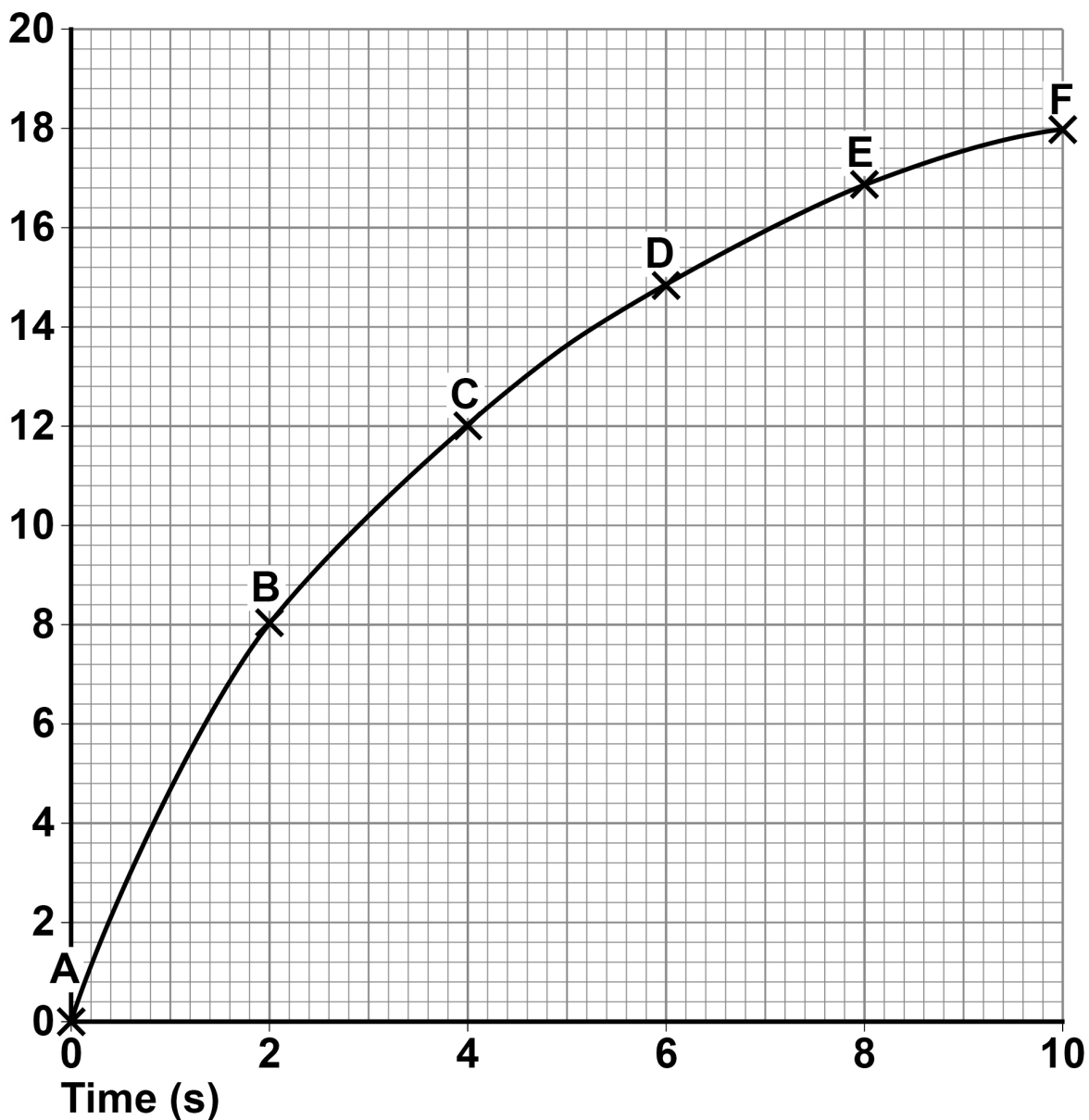
0	4
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Cyclists need to be able to accelerate at the start of a race.

FIGURE 1 shows a velocity–time graph of a cyclist at the start of a road race.

FIGURE 1

Velocity
(m/s)



04.1

Calculate the cyclist's acceleration between points B AND C in FIGURE 1.

Give the correct units in your answer. [2 marks]

Cyclist's acceleration _____

Units _____

04.2

Identify the TWO points in FIGURE 1 between which the cyclist was accelerating at the greatest rate. [1 mark]

Between point _____ and point

[Turn over]



0	5
---	---

**State ONE exercise-related function of carbohydrates.
[1 mark]**

0	6
---	---

Katarina Johnson-Thompson is a heptathlete competing in multiple events over two days.

**Analyse why a lack of sleep between the two days of competition may impair her recovery AND performance.
[3 marks]**



[Turn over]



0	7
---	---

A runner has followed a continuous training programme three times per week for the last six weeks to prepare for a 5 km race.

The race is scheduled to take place in four weeks' time.

Analyse how applying the FITT principles to the runner's training could improve their performance during the race. [8 marks]

You may use this space to plan your answer.













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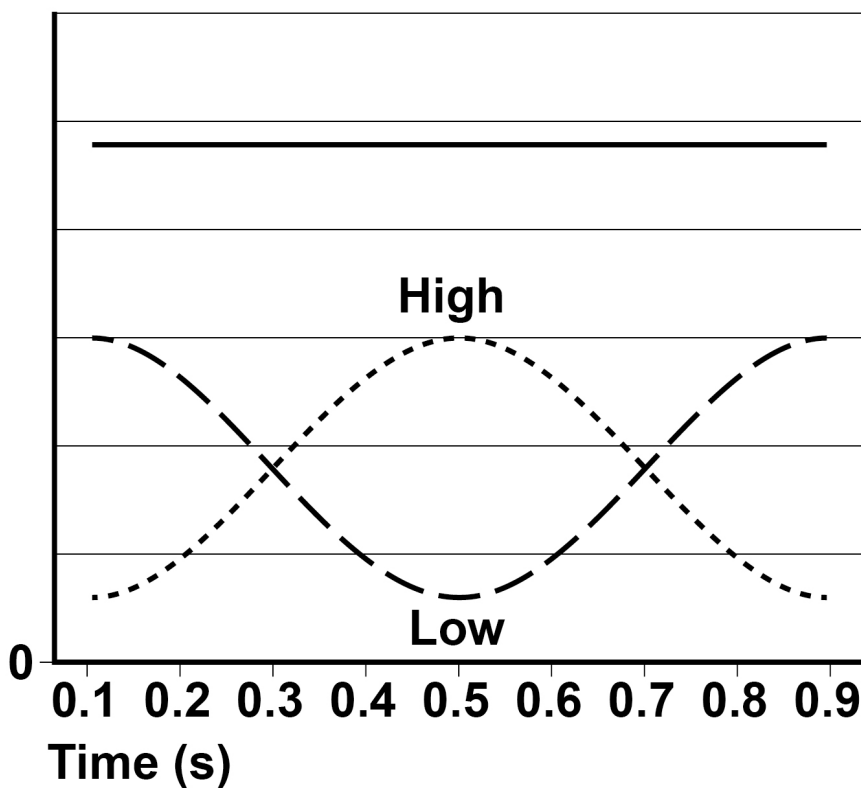


08

FIGURE 2 represents the principle of conservation of angular momentum applied to a gymnast as they perform a front tuck somersault.

FIGURE 2

Arbitrary
units



KEY

- Angular momentum
- Angular velocity
- - - - - Moment of inertia



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

**Refer to FIGURE 2, on page 20, in your answer.
[15 marks]**

You may use this space to plan your answer.

[Turn over]



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[illegible]

[illegible]

[illegible]

35



SECTION B**SPORT PSYCHOLOGY**

Answer ALL questions in this section.

0	9
---	---

Which ONE of the following is the SECOND stage of group formation according to Tuckman's model?
[1 mark]

☐

A Forming

☐

B Norming

☐

C Performing

☐

D Storming



1	0
---	---

A golfer sets herself the goal of keeping her head still throughout her swing.

Identify which type of goal this is. [1 mark]

☐

A Outcome

☐

B Performance

☐

C Process

[Turn over]



1	1
---	---

Define 'aggression' AND 'assertive behaviour'. Give a sporting example of each. [4 marks]

Aggression _____

Assertive behaviour _____



1	2
---	---

State THREE strategies a coach can use to prevent a performer behaving aggressively in a competitive situation. [3 marks]

1

2

3

[Turn over]



1	3
---	---

FIGURE 3 shows a four-person rowing crew.

FIGURE 3



The rowers carry out their roles individually, but at the same time, relying on co-ordination to be successful.

Evaluate the impact of task AND social cohesion on the performance of a rowing crew. [3 marks]

[Turn over]



1	4
---	---

The diver in FIGURE 4 may use cognitive techniques such as mental rehearsal, visualisation and imagery to manage stress immediately before performance.

FIGURE 4



Analyse how the diver could use **OTHER** cognitive stress management techniques to improve their performance in a competition. Refer to catastrophe theory in your answer. [8 marks]

You may use this space to plan your answer.

[Turn over]



[illegible]



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[illegible]

[Turn over]



1	5
---	---

A coach can use observations, questionnaires or physiological measures to obtain data on anxiety levels.

Evaluate the use of each measure to provide valid and reliable data to assess anxiety in sport. [15 marks]

You may use this space to plan your answer.









[illegible]

[illegible]

[illegible]

[Turn over]

35



SECTION C**SPORT AND SOCIETY AND TECHNOLOGY IN SPORT**

Answer ALL questions in this section.

1	6
---	---

Which ONE of the following organisations ONLY provides support to talented athletes? [1 mark]

☐

A National Governing Bodies

☐

B Sport England

☐

C UK Sport



1	7
---	---

Two adults play badminton for the purpose of physical recreation.

In which ONE of the following levels of the sporting development continuum does this activity occur?
[1 mark]

☐

A Foundation

☐

B Participation

☐

C Performance

[Turn over]



1	8
---	---

Evaluate the effectiveness of THREE different measures put in place to improve spectator safety at football matches. [3 marks]

1 _____

2 _____

3 _____



1	9
---	---

One function of sports analytics is game analysis.

1	9	.	1
---	---	---	---

State TWO other functions of sports analytics.
[2 marks]

1 _____

2 _____

[Turn over]



1	9	.	2
---	---	---	---

Explain how technology can be used to carry out game analysis in a team sport. [2 marks]



2	0
---	---

Using testing and recording equipment such as a metabolic cart for indirect calorimetry can provide useful information about performance.

Describe what a metabolic cart is AND how it can be used to carry out indirect calorimetry. [3 marks]

[Turn over]



2	1
---	---

In 2012, Lance Armstrong was stripped of his seven Tour de France titles and given a lifetime ban for using banned substances including erythropoietin (EPO).

Evaluate the choice made by other professional cyclists to inject EPO instead of relying on altitude training alone to improve performance. Refer to the physiological effects of EPO on the cyclist in your answer. [8 marks]

You may use this space to plan your answer.



[illegible]

[Turn over]





[illegible]

[Turn over]



[illegible]

[illegible]

[Turn over]



2	2
---	---

Analyse how support provided by the National Institutes of Sport has helped to improve the performance of British elite track cyclists. [15 marks]

You may use this space to plan your answer.







[illegible]

[Turn over]





[illegible]

[Turn over]







35



Additional page, if required.

Write the question numbers in the left-hand margin.

[illegible]

Additional page, if required.

Write the question numbers in the left-hand margin.

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For Examiner's Use	
Section	Mark
A	
B	
C	
TOTAL	

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