

Please check the examination details below before entering your candidate information

Candidate surname					Other names				
Centre Number					Candidate Number				

Pearson Edexcel Level 3 GCE

Friday 23 May 2025

Morning (Time: 2 hours 30 minutes)

Paper reference **9PE0/01**

Physical Education

Advanced

COMPONENT 1: Scientific Principles of Physical Education

You must have:
Calculator

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions in Sections A and B.
- Answer the questions in the spaces provided
– *there may be more space than you need.*

Information

- The total mark for this paper is 140.
- The marks for **each** question are shown in brackets
– *use this as a guide as to how much time to spend on each question.*
- The question marked with an **asterisk (*)** requires candidates to use their knowledge and understanding from across the course of study in their answer.
- Calculators can be used.

Advice

- Read each question carefully before you start to answer it.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ►

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SECTION A – Applied anatomy and physiology

Answer ALL questions. Write your answers in the spaces provided.

1 Name the prime mover causing the following movements:

(i) adduction of the upper arm at the shoulder joint

(1)

(ii) abduction of the upper arm at the shoulder joint

(1)

(iii) flexion of the upper leg at the hip joint.

(1)

(Total for Question 1 = 3 marks)

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2 Stability is an important factor in sports performance.

(a) Summarise **four** factors affecting stability.

(4)

(b) Describe **four** ways that the muscular skeletal system provides stability for sporting activities.

(4)

(Total for Question 2 = 8 marks)



3 The cardiac cycle consists of diastole and systole.

(a) Define end diastolic volume (EDV).

(1)

(b) Define end systolic volume (ESV).

(1)

(Total for Question 3 = 2 marks)

4 Summarise **four** factors affecting stroke volume.

(4)

(Total for Question 4 = 4 marks)



5 Outline **three** of the forces acting on an athlete as they run.

(3)

(Total for Question 5 = 3 marks)

6 Using examples from sport or exercise, summarise **three** different types of muscular contraction.

(3)

(Total for Question 6 = 3 marks)



- 7 Explain how the structure of **three** different types of blood vessel enables their function.

(6)

(Total for Question 7 = 6 marks)

- 8 Describe **four** unhealthy lifestyle factors and their effects on the respiratory system.

(4)

(Total for Question 8 = 4 marks)



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- (6)

(Total for Question 9 = 6 marks)



10 Examine the application of Newton's three Laws of Motion during the following phases of a penalty kick in football:

- run up
- strike of the ball.

(8)

(Total for Question 10 = 8 marks)



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11 Examine the mechanical processes of ventilation and diffusion in the lungs.

(8)

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(Total for Question 11 = 8 marks)



12 Using examples from sport, discuss the resynthesis of ATP by each of the **three** energy systems.

(15)

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(Total for Question 12 = 15 marks)

TOTAL FOR SECTION A = 70 MARKS



15 Describe **four** factors affecting an athlete's ability to achieve good results in an agility fitness test.

(4)

(Total for Question 15 = 4 marks)

16 Summarise **four** ways that compression clothing may aid recovery.

(4)

(Total for Question 16 = 4 marks)



17 Using **four** examples of sporting equipment or technology, explain how performers use friction to aid performance.

(4)

(Total for Question 17 = 4 marks)

18 The maximum accumulated oxygen deficit (MAOD) test can be used to measure anaerobic capacity.

Summarise the protocol for calculating MAOD.

(5)

(Total for Question 18 = 5 marks)



19 Summarise **four** reasons why hydration is important for an athlete.

(4)

(Total for Question 19 = 4 marks)

20 Describe **four** reasons why a gymnast would use weight training to improve their performance.

(4)

(Total for Question 20 = 4 marks)



21 Examine the effectiveness of interval training for an outfield player in a team game of your choice.

(8)

(Total for Question 21 = 8 marks)



22 Examine how swimmers apply their knowledge of fluid mechanics to improve performance.

(8)

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(Total for Question 22 = 8 marks)



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23 Examine how different factors affect the flight path and bounce of a spinning ball.

(8)

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(Total for Question 23 = 8 marks)



***24** Sports scientists use a wide range of technology to collect and analyse data to improve performance.

Evaluate the impact of the different types of technology, the data gathered and its usefulness to performers and coaches.

Use your knowledge and understanding from across the course of study to answer this question.

(15)

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(Total for Question 24 = 15 marks)

TOTAL FOR SECTION B = 70 MARKS
TOTAL FOR PAPER = 140 MARKS



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