Please check the examination details below before entering your candidate information

Candidate surname	Other names

Pearson Edexcel Level 3 GCE

Centre Number	Candidate Number

Friday 17 May 2019

Morning (Time: 1 hour 45 minutes) | Paper Reference **8PE0/01**

Physical Education

Advanced Subsidiary
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 90.
- The marks for **each** question are shown in brackets – *use this as a guide as to how much time to spend on each question.*
- Questions labelled with an **asterisk** (*) require 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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Pearson

SECTION A – Applied anatomy and physiology

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

1 Using the principles related to stability, outline how an athlete may regain lost balance.

(2)

(Total for Question 1 = 2 marks)

2 (a) Identify the type of muscle fibre that would be dominant in a marathon runner.

(1)

(b) Explain how the characteristics of these fibres are suitable for a marathon runner.

(4)

(Total for Question 2 = 5 marks)

3 (a) Using Newton's Law of Acceleration (second law), calculate the force needed to accelerate a mass of 15 kg at 15 $m\,s^{-2}$.

(2)

(b) A force of 75 N produces an acceleration of 3 $m\,s^{-2}$ on an object. Calculate the mass of the object.

(2)

(Total for Question 3 = 4 marks)

4 The ankle joint is identified as a second class lever.

(a) When standing on tiptoes, state which component acts as:

(i) the effort/force

(1)

.....

(ii) the fulcrum/pivot

(1)

.....

(iii) the load/resistance.

(1)

.....

(b) Describe the advantages and disadvantages of a second class lever.

(3)

.....

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(Total for Question 4 = 6 marks)

5 Explain how the structure of the following components of the cardiovascular system allows them to function effectively:

(a) artery

(2)

(b) vein

(2)

(c) capillary.

(2)

(Total for Question 5 = 6 marks)

6 Using examples, describe **two** different types of contraction a muscle can perform.

(4)

(Total for Question 6 = 4 marks)

7 Using the sliding filament theory, summarise the process of a muscle contraction.

(6)

(Total for Question 7 = 6 marks)

8 Discuss how the cardiovascular and respiratory systems function to allow optimum performance by an endurance athlete.

(12)

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(Total for Question 8 = 12 marks)

TOTAL FOR SECTION A = 45 MARKS

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SECTION B – Exercise physiology and applied movement analysis

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

9 (a) Define the term energy balance.

(1)

(b) Explain why an athlete might want to create an energy imbalance.

(2)

(Total for Question 9 = 3 marks)

10 Summarise the main physiological determinants of sprinting.

(4)

(Total for Question 10 = 4 marks)

11 Using examples, examine the use of contemporary technologies to monitor fitness.

(6)

(Total for Question 11 = 6 marks)

12 Describe, using examples, the components of the FITT principle of training.

(4)

(Total for Question 12 = 4 marks)

13 Examine the use of hypertonic and isotonic solutions by athletes.

(6)

(Total for Question 13 = 6 marks)

14 The rate of perceived exertion (RPE) is often used to measure the intensity of physical activity.

Examine the advantages and disadvantages of using this method.

(6)

(Total for Question 14 = 6 marks)

15 Summarise how to complete a proprioceptive neuromuscular facilitation (PNF) stretch.

(4)

(Total for Question 15 = 4 marks)

***16** Discuss how an athlete could prepare for performance at altitude.

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

(12)

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(Total for Question 16 = 12 marks)

TOTAL FOR SECTION B = 45 MARKS
TOTAL FOR PAPER = 90 MARKS

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