



Rewarding Learning

ADVANCED
General Certificate of Education
2015

Centre Number

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Candidate Number

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Sports Science and the Active Leisure Industry

Unit A2 2

assessing

The Application of Science
to Sports Performance

[A2LB1]

FRIDAY 29 MAY 2015, AFTERNOON



A2LB1

TIME

2 hours.

INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.

Write your answers in the spaces provided in this question paper.

Answer **all five** questions.

INFORMATION FOR CANDIDATES

The total mark for this paper is 100.

Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.

Quality of written communication will be assessed in Questions **3(c)**, **4(b)(ii)**, **5(b)** and **5(c)**.

For Examiner's use only	
Question Number	Marks
1	
2	
3	
4	
5	
Total Marks	

Answer **all five** questions.

Examiner Only

Marks Remark

- 1 (a) Define the term bradycardia and explain **two** structural adaptations that enable it to occur.

[4]

- (b) Identify **two** functional adaptations to the cardiovascular system as a result of both aerobic and anaerobic training.

- (i) Aerobic training:

[2]

(ii) Anaerobic training:

[2]

(c) Identify **two** adaptations to the muscular system and **two** adaptations to the skeletal system of an athlete as a result of prolonged aerobic training.

(i) Muscular system:

[2]

(ii) Skeletal system:

[2]

Examiner Only	
Marks	Remark

2 (a) Skeletal muscle fibres are not all uniform, they can differ in both structure and function.

Identify the **three** types of skeletal muscle fibres and describe the structural characteristics that enable these muscle fibres to work during different sporting activities.

(i) _____

_____ [3]

(ii) _____

_____ [3]

Examiner Only	
Marks	Remark

(iii) _____

_____ [3]

(b) Describe **two** types of muscle contraction and explain their use in a physical sporting movement.

_____ [4]

Examiner Only	
Marks	Remark

- 4 (a) In order to develop new skills, athletes progress through a series of learning phases. Some performers progress through each stage quickly, mastering skills, while others take more time.

Identify and describe the **three** stages of learning that athletes would have to progress through before they become elite performers.

(i) _____

_____ [4]

(ii) _____

_____ [4]

Examiner Only	
Marks	Remark

(b) To gain an advantage over other competitors or players, some athletes have resorted to illegal methods of enhancing performance.

Identify an illegal method used to enhance performance. Describe how this method would help to improve an endurance athlete's performance and assess the risks associated with the use of this method.

The quality of written communication is assessed in this question.

Examiner Only	
Marks	Remark

(c) Athletes and coaches are continually searching for ways to gain a competitive advantage to improve athletic performance. Pressure to win has led to performers adopting virtually any means to gain an edge, sometimes illegally.

Discuss the strategies organisations have implemented in order to counteract the use of illegal performance enhancing drugs in sport.

The quality of written communication is assessed in this question.

Examiner Only	
Marks	Remark

THIS IS THE END OF THE QUESTION PAPER

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