



**ADVANCED SUBSIDIARY GCE
PHYSICAL EDUCATION**
An Introduction to Physical Education

G451

Candidates answer on the Question Paper

OCR Supplied Materials:
None

Other Materials Required:
None

**Tuesday 19 January 2010
Morning**

Duration: 2 hours



Candidate Forename		Candidate Surname	
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Centre Number						Candidate Number				
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INSTRUCTIONS TO CANDIDATES

- Write your name clearly in capital letters, your Centre Number and Candidate Number in the boxes above.
- Use black ink. Pencil may be used for graphs and diagrams only.
- Read each question carefully and make sure that you know what you have to do before starting your answer.
- There are three Sections in this paper.
- Answer **all** parts of the question in each of Sections A, B and C.
- Do **not** write in the bar codes.

INFORMATION FOR CANDIDATES

- The number of marks is given in brackets [] at the end of each question or part question.
- The total number of marks for this paper is **90**.
- The quality of your written communication will be assessed in questions that are indicated accordingly (*).
- This document consists of **16** pages. Any blank pages are indicated.

Section A

Answer **all** parts of the question.

Anatomy and Physiology

- 1 (a) Fig. 1 shows an athlete performing a bicep curl. Use your anatomical and physiological knowledge to complete the table below for the athlete's elbow during the **upward** phase of the bicep curl.

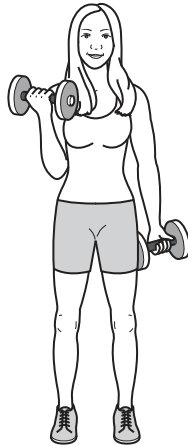


Fig. 1

Joint	Joint Type	Movement	Agonist	Antagonist
Elbow			Biceps Brachii	

What type of muscle contraction is occurring in the biceps brachii during the **downward** phase of the bicep curl?

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Name **one** muscle in the trunk acting to maintain good posture and core stability during the bicep curl.

..... [5]

(b) Using a serve in tennis, explain Newton's three laws of motion.

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..... [5]

(c) Venous return is the transport of deoxygenated blood to the right side of the heart.

Give **three** mechanisms which maintain venous return during exercise.

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An increase in venous return can improve performance.

Explain how the increase in blood flow affects cardiac output.

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..... [6]

(d) Fig 2. shows the changes in heart rate of an athlete during a sub-maximal exercise session. Describe the neural mechanisms which cause heart rate to change during exercise.

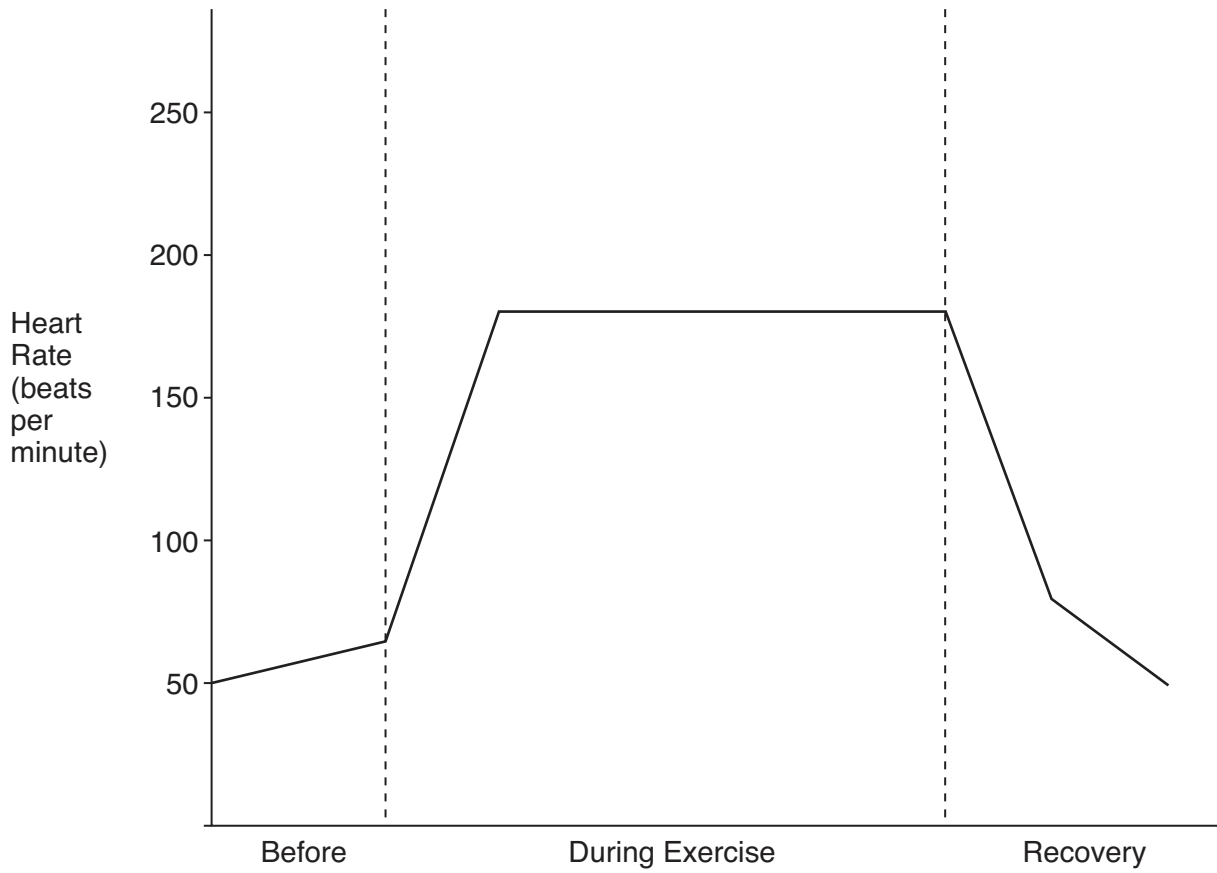


Fig. 2

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(c) Learning and performing movement skills often involves the use of the memory process. Describe the multi-store memory process when performing movement skills.

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(d) Using the Inverted U theory **and** a practical example explain how levels of arousal can affect the performance of movement skills.

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..... [6]

..... [10]

[Total: 30]

Section C

Answer **all** parts of the question.

Socio-Cultural studies relating to participation in physical activity

3 (a) It is widely accepted that physical activity is part of a healthy lifestyle. However, people lead more sedentary lifestyles now than in the past.

(i) Identify reasons for increasingly sedentary lifestyle in the UK today.

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(ii) What are the physical activity recommendations for active lifestyles?

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(d) The game of American football is extremely popular in the USA.

Give reasons for the violence and commercialism associated with American Football.

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