



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS  
General Certificate of Education  
Advanced Subsidiary Level and Advanced Level

---

**PHYSICAL EDUCATION**

**9396/13**

Paper 1

**October/November 2010**

**2 hours 30 minutes**

Additional Materials: Answer Booklet/Paper

---

**READ THESE INSTRUCTIONS FIRST**

If you have been given an Answer Booklet, follow the instructions on the front cover of the Booklet.

Write your Centre number, candidate number and name on all the work you hand in.

Write in dark blue or black pen.

You may use a soft pencil for any diagrams, graphs or rough working.

Do not use staples, paper clips, highlighters, glue or correction fluid.

Answer **all** questions.

At the end of the examination, fasten all your work securely together.

The number of marks is given in brackets [ ] at the end of each question or part question.

---

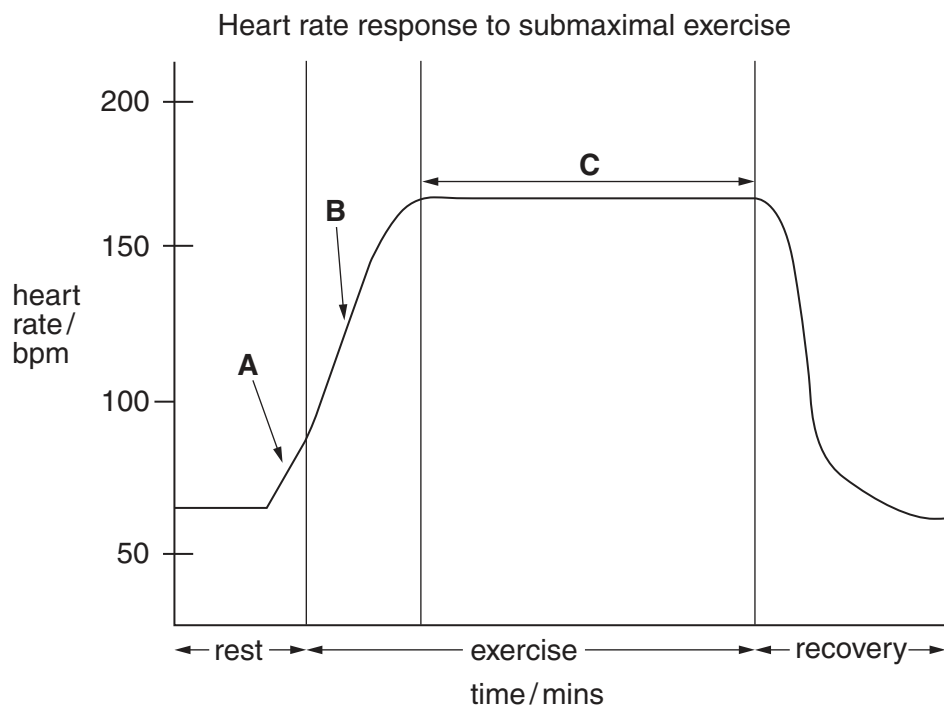
This document consists of **4** printed pages.



Answer **all** questions.

### Section A: Applied Anatomy and Physiology

- 1 (a) Identify **two** structural and **two** functional characteristics of a fast glycolytic muscle fibre (type 2b). When would this fibre type be recruited? [5]
- (b) Explain the role of the rotator cuff muscles and the multifidus muscle in sports such as rugby, cricket and tennis. [4]
- (c) Fig. 1.1 shows heart rate response to submaximal exercise.



**Fig. 1.1**

Explain what causes the changes in heart rate during exercise at areas marked **A** and **B** on the graph in Fig. 1.1. Why does the graph show no change in heart rate at the area marked **C** in Fig. 1.1? [6]

- (d) Describe the conduction system of the heart. [5]
- (e) Describe how oxygen and carbon dioxide are transported in the blood. [4]
- (f) During exercise the muscle cells require more oxygen and need to remove more carbon dioxide than at rest. Explain how the process of gaseous exchange between the capillaries and the muscle cells changes during exercise to enable this to happen. [6]

[Total: 30]

### Section B: Acquiring, Developing and Performing Movement Skills

- 2 (a) It is generally recognised that to perform motor skills there are certain underlying abilities that are needed.

What sort of abilities are needed for a racquet game like tennis? How do these abilities differ from the abilities needed for an invasion game like hockey? [4]

- (b) The influence of the performance of one skill on the performance of another is often called 'transfer'.

(i) Describe, using examples from sport, how transfer could be either positive or negative. [4]

(ii) How can coaches and performers optimise the effects of positive transfer? [4]

- (c) The learning of skills can be seen as the strengthening of the S-R bond.

By using a practical example, show what is meant by an S-R bond and how it can be strengthened. [6]

- (d) The classification of motor skills is necessary for effective learning.

Identify a motor skill in sport and **explain** your classification of it using the following continua:

- open – closed
- discrete – serial – continuous [4]

- (e) The cognitive theory of learning is one way of explaining the process of learning movement skills.

Explain the cognitive theory of learning. [4]

- (f) Using practical examples from sport explain what is meant by closed loop control when performing motor skills. [4]

[Total: 30]

### Section C: Contemporary Studies in Physical Education and Sport

- 3 (a) Play and physical recreation each have their own distinct characteristics, but they also have similarities.
- Describe **two** differences and **two** similarities between play and physical recreation. [4]
- (b) Explain the importance of Physical Education in the school curriculum. [5]
- (c) Explain the benefits for a country if the citizens regularly participate in sport. [4]
- (d) Many sports performers seem to commit violent acts on the field of play.
- As a coach explain how you would reduce acts of violence by your players. [3]
- (e) (i) Using examples from sport, explain what is meant by sportsmanship and gamesmanship. [4]
- (ii) Give evidence from sport to explain why sportsmanship appears to be declining. [3]
- (f) Some sports have changed as a result of the influence of the media and commerce.
- How has the media and commercialism affected sport? [7]

[Total: 30]

---

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (UCLES) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.

University of Cambridge International Examinations is part of the Cambridge Assessment Group. Cambridge Assessment is the brand name of University of Cambridge Local Examinations Syndicate (UCLES), which is itself a department of the University of Cambridge.