



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

PHYSICAL EDUCATION

8666/01

Paper 1

October/November 2008

3 hours

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 **four** questions, **1 question from each of Sections A, B and C and 1 other from any section.**

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 **10** printed pages and **2** blank pages.



Section A: Applied Anatomy and Physiology.

Answer at least **one** question from this section.

- 1 (a) A tennis serve or smash requires a full range of movement at the shoulder joint. Fig. 1.1 shows an athlete taking part in an overhead striking movement used in a tennis serve or a smash.



Fig. 1.1

- (i) Name the type of joint and the bones which articulate at the shoulder joint. [3]
- (ii) Name the movement occurring in the joint at the point of contact with the ball and state the agonist muscle which enables this movement to happen. [2]
- (b) For a right handed player to prepare for the overhead hit successfully the spine has to rotate taking the right shoulder backwards and the left shoulder forwards.

Explain the functions of the external and internal oblique muscles in this action. [4]

(c) The heart plays an important role in athletic performance.

(i) Define the terms heart rate, stroke volume and cardiac output, giving the units of measurement for each. [6]

(ii) Explain why there is a rapid rise in heart rate as exercise increases in intensity. [4]

(iii) Describe how the body ensures that a large percentage of cardiac output is distributed to working muscles during exercise. [3]

(d) During long periods of exercise more air needs to be moved in and out of the lungs.

Describe the changes in the mechanics of breathing which allow more air to be taken **into** the lungs during exercise. [3]

[Total: 25]

- 2 (a) The athlete in Fig. 2.1 is using the radio-ulnar joint to assist in the discus throw.



Fig. 2.1

- (i) State the joint type. Name and describe fully the movements which occur at this joint. [4]
- (ii) Name the agonist muscle responsible for each movement. [2]
- (b) To achieve speed across the circle the muscles in the lower leg of the discus thrower will contain a high percentage of fast glycolytic fibres.
- Describe **three** characteristics of fast glycolytic muscle fibres. [3]
- (c) The structure of the heart is important in enabling it to carry out its function.
- (i) Describe the pericardium and state its function. [2]
- (ii) Describe how blood is taken to and away from the heart muscle. [3]

- (d) During exercise the heart rate of an athlete increases to supply the extra demand for oxygen from the working muscles. The cardiac control centre in the brain is responsible for the regulation of the heart rate.

Explain the neural, hormonal and intrinsic factors affecting the activity of the cardiac control centre. [6]

- (e) The muscle cells of the athlete require the exchange of gases during exercise.

Explain the process of gaseous exchange between the capillaries and the muscle cells during exercise. [5]

[Total: 25]

Section B: Acquiring, Developing and Performing Movement Skills.

Answer at least **one** question from this section.

- 3 (a) The athlete in Fig. 3.1 is performing a skilful action.

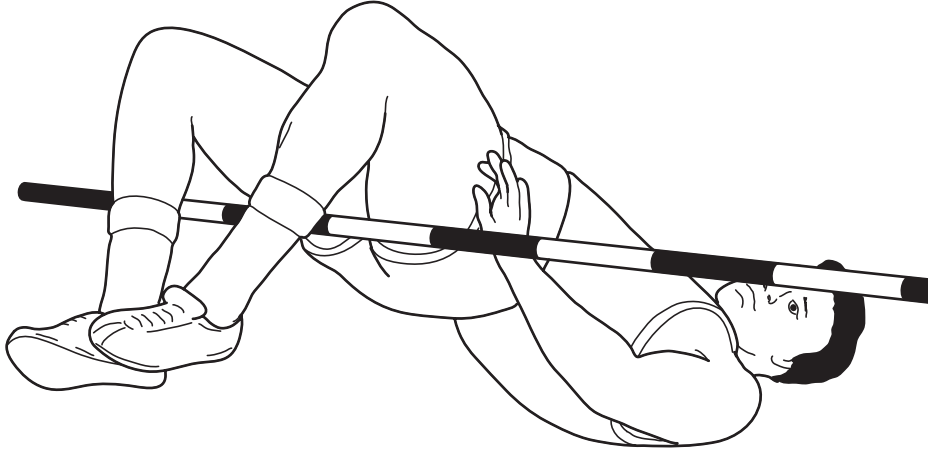


Fig. 3.1

The skilful performance of the high jump can be considered to be efficient, goal directed and aesthetically pleasing.

Explain each of these characteristics.

[3]

- (b) Children develop skills in a manner which follows set stages of motor skill development.

Stage 1: Motor ability	Stage 2: Fundamental motor skill	Stage 3: Sport specific skill
---------------------------	-------------------------------------	----------------------------------

Fig. 3.2

Using Fig. 3.2 explain the developmental stages involved in learning the high jump.

[6]

- (c) Explain what is meant by open loop motor control using the high jump as a practical example.

[3]

- (d) Children are highly motivated to learn new skills, such as the high jump.

(i) Define and describe two types of motivation.

[4]

(ii) How would you as a coach ensure that the young athlete retained their interest in the sport?

[3]

- (e) To learn the high jump the memory process is very important. Fig. 3.3 shows the memory process.

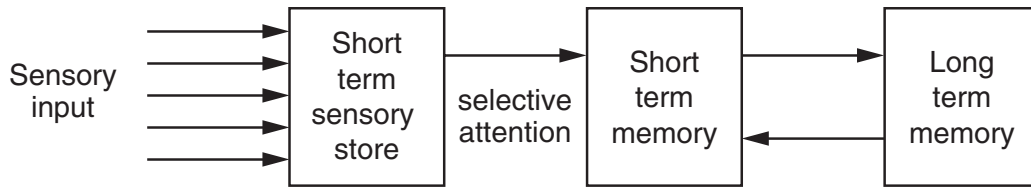


Fig. 3.3

- (i) Define the terms short term memory and long term memory. [2]
- (ii) Explain the relationship that is thought to occur between the short term memory and the long term memory. [2]
- (iii) Explain the importance of selective attention to the athlete when taking part in a high jump competition. [2]

[Total: 25]

- 4 (a) Place the following skills on the continuum of serial, discrete and continuous skills. Give reasons to justify each of your placements.
- (i) Trampolining sequence,
 - (ii) Catching a cricket ball,
 - (iii) Swimming. [6]
- (b) There are many theories related to the learning of motor skills.
Using examples from sport describe operant conditioning. [5]
- (c) (i) Describe how a motor skill can be learned by observation. [2]
(ii) Explain the four elements of Bandura's model of observational learning. [4]
- (d) The transfer of learning is often used in acquiring movement skills.
Using examples from sport, explain positive transfer of learning. [4]
- (e) The learning of a skill passes through three distinct phases.
Using examples from sport describe the associative phase of learning. [4]

[Total: 25]

Section C: Contemporary Studies in Physical Education and Sport

Answer at least **one** question from this section

- 5 (a) (i) Using Fig. 5.1 describe the characteristics of recreation. [4]



Fig. 5.1

- (ii) Using Fig. 5.2 describe the characteristics of sport. [4]



Fig. 5.2

- (b) The Olympic oath refers to “respecting and abiding by the rules, in the true spirit of sportsmanship”.

As a coach how would you ensure that your team adopts the spirit of sportsmanship? [5]

- (c) Mass participation is the idea that everyone should have a chance to take part in sport.

(i) Explain the benefits of mass participation in sport. [4]

(ii) Describe some of the attitudes which prevent mass participation in sport. [4]

- (d) Sport and politics are interwoven. Sport can be used for political motives.

Explain the positive and negative outcomes of using sport for political reasons. [4]

[Total: 25]

- 6 (a) Leisure is more than an activity, it is a valuable life experience.

Using a leisure activity as an example, describe the characteristics of leisure. [4]

- (b) Outdoor education consists of activities such as canoeing, or rock climbing.

Describe the advantages of taking part in outdoor education. [4]

- (c) Only the few will achieve excellence in Sport.

Using a country of your choice describe how the government and other agencies ensure that excellence can be achieved. [8]

- (d) Taking part in regular sports or physical activity is good for individuals and communities. Despite this, females are less likely to be physically active than males.

(i) Explain the reasons why females are less active than males. [5]

(ii) Explain measures which could be introduced to ensure that females play a larger part in sporting activity. [4]

[Total: 25]

BLANK PAGE

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.