

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

**PHYSICAL EDUCATION**

**8666/01**

Paper 1

October/November 2003

Additional Materials: Answer Booklet/Paper

**3 hours**

**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 on both sides of the paper.  
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 **4** 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 **6** printed pages and **2** blank pages.



## Section A Applied Anatomy and Physiology

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

1 (a) The knee joint is important in sporting activity.

(i) Draw a simple diagram of the knee joint and label the articulating bones. [2]

(ii) Draw and label **three** other structures common to a synovial joint. [3]

(b) Select a sporting example of your choice and provide the missing information for the table below.

Sporting Example	Joint	Movement Produced	Agonist	Antagonist
<b>A</b>	Knee	<b>B</b>	Rectus Femoris	<b>C</b>

[3]

(c) State **four** differences between slow twitch and fast twitch muscle fibres. [4]

(d) The heart controls the delivery of blood to the body during rest and exercise. Define the following terms and state the average values at rest.

(i) Heart rate

(ii) Stroke volume

(iii) Cardiac output. [6]

(e) Gaseous exchange takes place within the lungs in the alveoli.

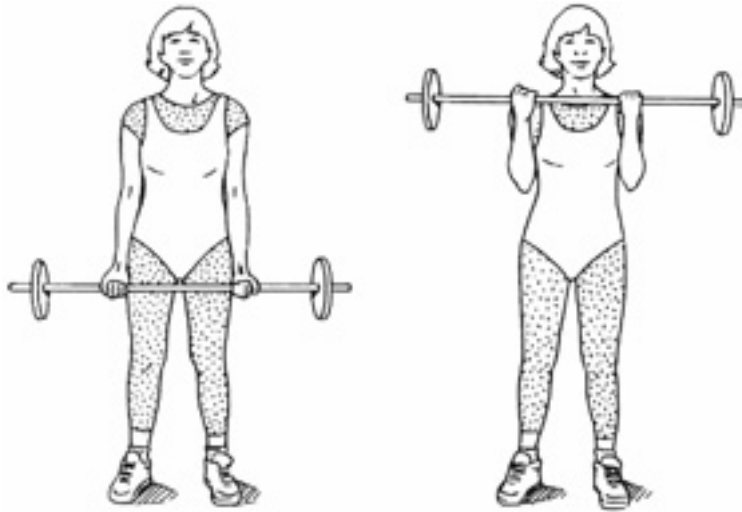
(i) Describe this process. [4]

(ii) State **three** reasons for its efficiency. [3]

[Total: 25]

2 (a) Using an example, describe a cartilaginous joint. [2]

(b)



With reference to the **elbow** joint during the **upward** phase of the bicep curl, identify the following:

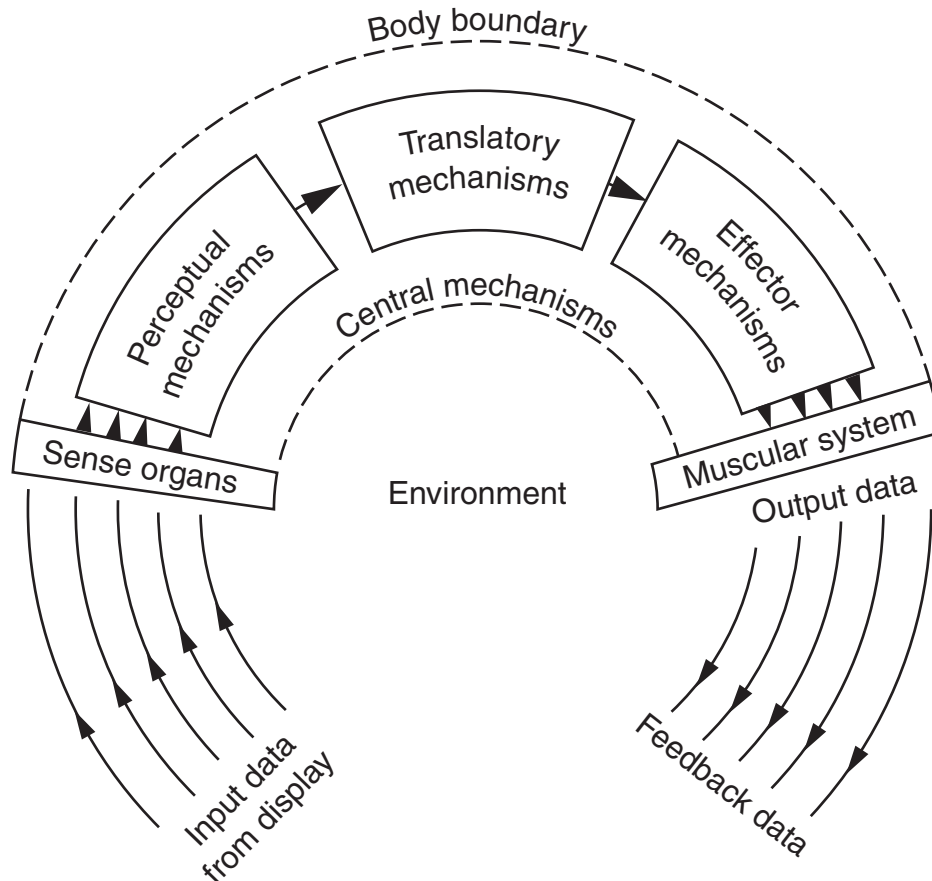
- (i) the type of joint;
  - (ii) the articulating bones;
  - (iii) the agonist muscle;
  - (iv) the antagonist muscle;
  - (v) the type of muscle contraction occurring in the agonist muscle. [5]
- (c) Explain antagonistic muscle action. [3]
- (d) Skeletal muscle fibres contract following a nervous impulse. What is the **All or None** law? [3]
- (e) Two circulatory systems transport blood around the body. Draw and label a simple diagram to illustrate these systems. [6]
- (f) (i) Explain the process of moving air in and out of the lungs at rest. [3]
- (ii) How does this process change during exercise? [3]

[Total: 25]

## Section B Acquiring, Developing and Performing Movement Skills

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

- 1 (a) Give **three** of the main characteristics of a skilful performance in sport. [3]
- (b) Using a sporting example of your choice, explain what is meant by an **Open Skill**. [4]
- (c) The production of motor skills depends on the efficiency of information processing. Using the model of information processing below, answer the following:



- (i) Input data comes from the display. What is meant by the term 'display'? [1]
- (ii) Identify the three main receptor systems used by a sports performer. [3]
- (iii) There are numerous arrows entering the perceptual mechanisms, but only one arrow leaving it. Identify this filtering mechanism and define its function. [2]
- (iv) Explain the role of feedback in this process. [3]
- (d) Explain the terms **reaction time**, **movement time** and **response time**. [3]
- (e) A coach/teacher can use a variety of methods to ensure the development of motor skills.
- (i) What is motivation? [1]
- (ii) Explain how a coach/teacher can use extrinsic motivation in the development of a motor skill. Use examples from sport to illustrate your answer. [5]

[Total: 25]

- 2 (a) Explain the term **gross skill** and give a relevant sporting example. [2]
- (b) Give an example of a fundamental motor skill and explain how this is developed in a young child. [3]
- (c) Define the term **reinforcement** and explain its importance in the strengthening of the S/R bond. [4]
- (d) Explain how a teacher can effectively use schema theory when teaching or coaching a practical activity. [5]
- (e) Quick reaction times are essential in many sporting activities. Describe how the psychological refractory period can affect reaction time, and give a sporting example. [3]
- (f) Teachers and coaches use transfer of learning to aid the learning process.
- (i) What is **positive transfer**? [1]
- (ii) Give an example of positive transfer from a sport of your choice. [1]
- (g) The learning process has been identified as having **three** distinct phases. Give the characteristics of **each** phase and illustrate your answer using a sporting example. [6]

[Total: 25]

**Section C Contemporary Studies in Physical Education and Sport**

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

- 1 (a) Using the example of a chasing game played by young children, explain **five** of the characteristics of play. [5]
- (b) Physical Education in schools plays an important part in the development of the individual.
- (i) Describe **two** characteristics of physical education in schools. [2]
- (ii) How does the physical education programme develop social values? [4]
- (c) What are the problems faced by disabled athletes in achieving excellence in sport? [6]
- (d) Identify the role of national sporting agencies in sports provision in a country of your choice. [8]
- [Total: 25]

- 2 (a) What is the function of leisure? [3]
- (b) State **five** characteristics of sport. Use practical examples to illustrate your answer. [5]
- (c) Outline the probable causes of violence amongst spectators a sporting event. [4]
- (d) The use of performance enhancing drugs is illegal. What are the sporting authorities doing to try to prevent the use of such substances? [5]
- (e) In many societies, women do not have equal opportunity to participate in sport. Discuss this in terms of the factors preventing equal opportunity. [8]
- [Total: 25]



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