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

PHYSICAL EDUCATION **8666/01**

Paper 1 **October/November 2007**

3 hours

Additional Materials: Answer Booklet/Paper

2728164832

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)** When taking part in a training session, the athlete in Fig. 1 is exercising the hip joint.

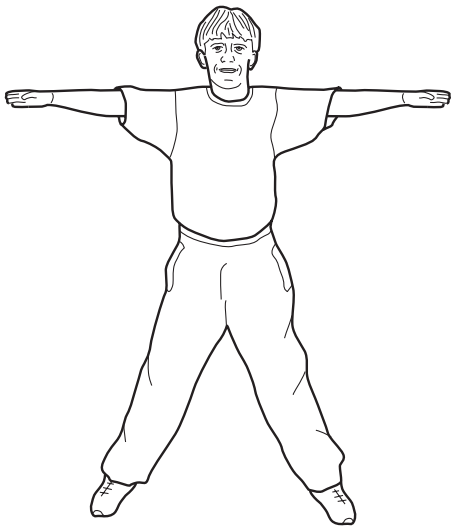

Fig. 1

(i) Using Fig. 1 complete the table below.

Joint	Joint Type	Articulating bones	Movement occurring	Agonist muscle
Hip	**A**	**B C**	**D**	**E**

[5]

(ii) List **two** other movements which can occur in the hip joint. [2]

(b) How does the structure of the hip joint allow for both flexibility of movement and joint stability? [4]

(c) Using an example from sport, describe concentric muscle contraction. [2]

(d) The cardiac cycle, which is the mechanical event of one heart beat, consists of two phases.

Describe these **two** phases. [6]

(e) During a marathon race a runner needs to increase the volume of gases which are exchanged between the lungs and the blood.

Explain how the structure of the runner's lungs allows efficient exchange of gases. [2]

(f) The velocity of the blood changes as it travels through the vascular system of a marathon runner.

Why is a change in velocity needed and how is this achieved? [4]

[Total: 25]

2 (a) The basketball players in Fig. 2 and Fig. 3 are taking a shot at the basket.

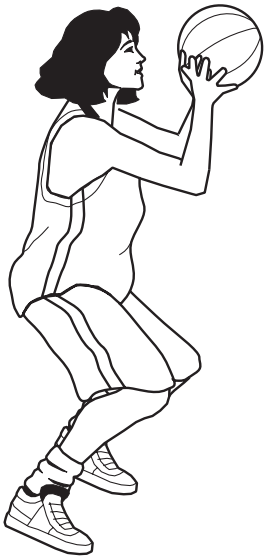

Fig. 2

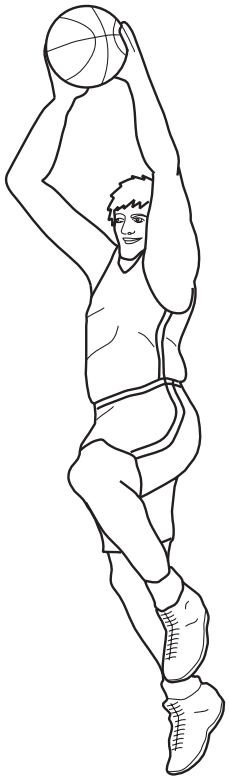

Fig. 3

Using Fig. 2 and Fig. 3 complete the tables below.

Preparation phase

Joint	Movement occurring	Agonist muscle	Muscle action
Ankle	**A**	**B**	**C**

[3]

Main Action

Joint	Movement Occurring
Ankle	**D**

[1]

(b) The ankle joint is an example of a synovial joint.

Describe **two** features of a synovial joint and the functions which they perform. [4]

(c) The muscle fibres in the legs of the basketball player contract to produce the main action of the shot.

Describe the 'All or None Law' of muscle contraction. [3]

(d) In order for the basketball player to ensure a supply of oxygenated blood to the muscles, deoxygenated blood has to first return to the heart through the veins. This process in known as venous return.

Describe **two** mechanisms which ensure venous return. [4]

(e) The basketball player performs a series of jump shots during practice. Fig. 4 shows a spirometer trace of the player at rest.

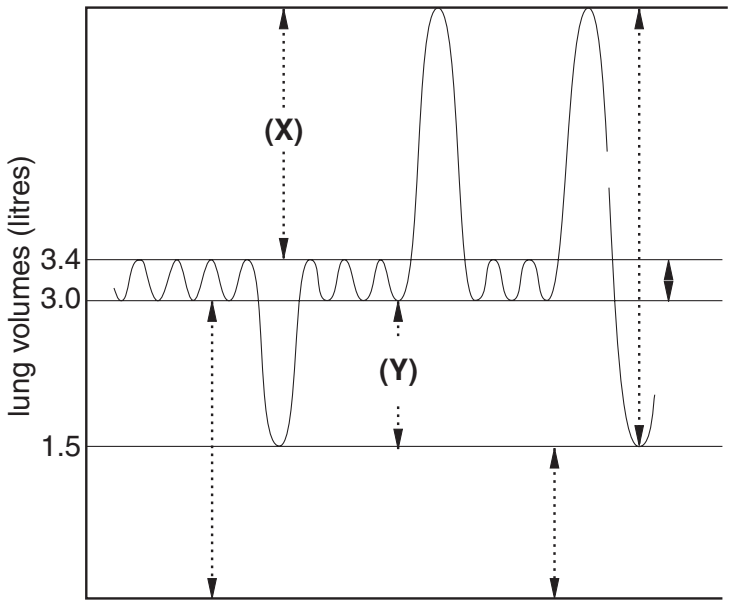

Fig. 4

(i) Use Fig. 4 to identify and provide a definition for the lung volumes labelled **X** and **Y**. [2]

(ii) Describe and explain the changes which occur in these volumes during the practice. [3]

(f) Explain the factors which increase the rate of diffusion of oxygen into 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)

Fig. 5

Fig. 6

In Fig. 5 the spin bowler, by using his fingers, is performing a fine motor skill.
In Fig. 6 the javelin thrower is performing a gross motor skill.

(i) Describe a fine motor skill. [2]

(ii) Describe a gross motor skill. [2]

(b) Skill classification uses continua.

(i) Explain why continua are used in the classification of skills. [2]

(ii) Use the simple – complex continuum to classify the following skills in terms of difficulty.

1. Spin bowling in cricket.
2. Sprinting.
3. Shooting in netball.
4. Tennis serve. [4]

(c) **(i)** Describe the stimulus/response bond. [2]

(ii) How would you, as a tennis coach, ensure that the stimulus/response bond is strengthened? [3]

(d) Knowledge of results and knowledge of performance are two types of feedback which a tennis player can receive.

(i) Explain the importance of feedback. [4]

(ii) Using examples from sport, describe both types of feedback. [6]

[Total: 25]

4 **(a)** Abilities can determine your learning and performance of motor skills.

(i) Describe the characteristics of abilities. [2]

(ii) Describe and give a sporting example of a gross motor ability and a psychomotor ability. [4]

(b) **(i)** Define reaction time, movement time, and response time. [3]

(ii) Use an example from sport to explain how you would improve the response time of a performer. [3]

(c) The terms open loop and closed loop are used to explain motor skill control.

(i) Describe open loop and closed loop control. [4]

(ii) A gymnast is performing a handstand. Explain how closed loop control can ensure that the balance is maintained. [3]

(d) Motor programmes are stored in the long term memory. How can the coach ensure that a gymnast remembers how to do a handstand? [2]

(e) As a coach working with novice swimmers how would you use extrinsic and intrinsic motivation to help them to retain their enthusiasm for the sport? [4]

[Total: 25]

Section C Contemporary Studies in Physical Education and Sport

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

5 **(a)** Leisure is an activity and an experience.

Identify the benefit of leisure pursuits to the individual. [4]

(b) In our free time we may choose to take part in outdoor pursuits such as wind surfing, mountain walking or rock climbing.

(i) What are the values of taking part in such activities? [3]

(ii) Using any outdoor pursuits as examples, explain the terms real and perceived risk. [4]

(c) There are many projects in place to encourage people from all communities to take part in sport.

Using examples from a country of your choice describe how sport for all is achieved. [6]

(d) Sponsorship is the funding of sport by business to gain recognition and increased income.

(i) Describe how a performer may benefit from sponsorship. [2]

(ii) Explain how sponsorship could be a disadvantage to a performer. [2]

(e) International sporting success ensures that a country has status.
The commercialism of big business can help countries to achieve this status.

Explain the positive and negative aspects of commercialism. [4]

[Total: 25]

[Turn over

6 **(a)** Play is for everyone. It is the base from which all sport begins. Children seem to play more than adults.

Explain the characteristics of play. [5]

(b) Physical Education takes place in schools, colleges and universities.

Describe the advantages of taking part in Physical Education. [4]

(c) To win a gold medal in the Olympic Games is the height of achievement for most athletes.

What does the athlete need to achieve excellence? [5]

(d) **(i)** Why do some players become violent when taking part in Sport? [3]

(ii) How can violence in sport be reduced? [3]

(e) Many factors, such as age, affect participation in sport.

Identify and explain other sociological factors which affect participation in sport. [5]

[Total: 25]

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