



# **Cambridge IGCSE™**

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## **PHYSICAL EDUCATION**

**0413/13**

Paper 1 Theory

**May/June 2023**

**1 hour 45 minutes**

You must answer on the question paper.

No additional materials are needed.

### **INSTRUCTIONS**

- Answer **all** questions.
- Use a black or dark blue pen. You may use an HB pencil for any diagrams or graphs.
- Write your name, centre number and candidate number in the boxes at the top of the page.
- Write your answer to each question in the space provided.
- Do **not** use an erasable pen or correction fluid.
- Do **not** write on any bar codes.
- You may use a calculator.
- You should show all your working and use appropriate units.

### **INFORMATION**

- The total mark for this paper is 100.
- The number of marks for each question or part question is shown in brackets [ ].

This document has **16** pages. Any blank pages are indicated.

- 1 The diagram shows an association football goalkeeper making a save.



- (a) Describe how **three** named components of fitness are required by a goalkeeper.

component 1 .....

description .....

.....

component 2 .....

description .....

.....

component 3 .....

description .....

.....

[6]

- (b) State different examples of exercises that can be included in the **three** named phases of a warm up for a goalkeeper. Explain the benefit of each phase.

name of phase 1 .....

.....

example .....

explanation of the benefit of phase 1 .....

.....

name of phase 2 .....

.....

example .....

explanation of the benefit of phase 2 .....

.....

name of phase 3 .....

.....

example .....

explanation of the benefit of phase 3 .....

[6]

- (c) Define the following terms and describe **one** example for each from association football:

sportsmanship

definition .....

.....

example .....

.....

gamesmanship.

definition .....

.....

example .....

.....

[4]

[Total: 16]

[Turn over]

- 2 (a) Complete the table to describe the named terms.

| terms                 | description   |
|-----------------------|---|
| leisure time          | time spent away from work and free from obligations / the time we have when we are not working or completing our family and home duties |
| (physical) recreation |   |
| play                  |   |
| sport                 |   |

[3]

- (b) Explain how **four** different factors may influence what activities people do during their leisure time.

.....

.....

.....

.....

.....

.....

.....

.....

.....

[4]

[Total: 7]

- 3 The photograph shows runners in a cross-country race.



- (a) Identify **two** different methods of training that a cross-country runner may decide to use. Give a different justification for each.

method of training 1 .....

justification .....

.....  
method of training 2 .....

justification .....

.....

[4]

- (b) Describe **three** long-term effects of exercise that a cross-country runner may experience.

1 .....

2 .....

3 .....

[3]

(c) Recovery is an important aspect of a cross-country runner's training programme.

(i) Describe what is meant by EPOC.

.....  
.....  
.....  
.....  
.....

[3]

(ii) Explain **three** factors that can affect recovery time.

1 .....

.....

2 .....

.....

3 .....

.....

[3]

[Total: 13]

- 4 (a) Describe, using examples from a named physical activity, how cognitive anxiety and somatic anxiety differ.

physical activity .....

description .....

.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....

[4]

- (b) Visualisation is one relaxation technique that can be used by a performer to control anxiety.

Describe **two** other named relaxation techniques.

technique 1 .....

description .....

.....  
.....  
.....

technique 2 .....

description .....

.....  
.....  
.....

[4]

[Total: 8]

5 Performance enhancing drugs (PEDs) are used by some performers to gain an unfair advantage.

Complete the table to show:

- different types of PEDs that may be taken by performers in the physical activities to improve their performance
- different examples of effects of PEDs on performance in the physical activities
- different health problems that may occur due to the PED taken.

| physical activity | type of PED       | example of effect on performance                      | health problem that may occur |
|-------------------|-------------------|---|-------------------------------|
| judo              | diuretics         | reduce weight quickly to make a lower weight category | dehydration                   |
| discus            | anabolic steroids |   | heart disease                 |
| golf              |                   |   | low blood pressure            |
| sprinting         |                   | increase alertness                                    |                               |

[5]

- 6 The photograph shows two tennis players performing in a competitive match.



- (a) (i) A tennis serve can be classified as a 'closed' skill. Justify this classification.

.....  
..... [1]

- (ii) A tennis serve can be placed on different skill classification continua.

Other than the open and closed continuum, justify where a tennis serve would be placed on **two** named skill classification continua.

name of continuum 1 .....

justification .....

.....

name of continuum 2 .....

justification .....

.....

[4]

- (b) A basic information processing model can be used to explain the actions of the player receiving the serve.

- (i) With reference to the player receiving the serve, describe each of the following stages of a basic information processing model:

input

description .....  
.....

decision-making

description .....  
.....

output

description .....  
.....

feedback.

description .....  
.....

[4]

- (ii) Explain the concept of single-channel hypothesis.

..... [1]

[Total: 10]

- 7 Describe **four** traditional differences between amateur performers and professional performers.

1 .....

.....  
2 .....

.....  
3 .....

.....  
4 .....

[4]

- 8 (a) State what is meant by the term force.

..... [1]

- (b) Explain how **two** named forces act on a sprinter when they are running.

force 1 .....

explanation .....

.....  
force 2 .....

explanation .....

[4]

- (c) (i) Draw and label a diagram of a first class lever.

[2]

- (ii) Describe, using a named physical activity, an example of when a first class lever is used.

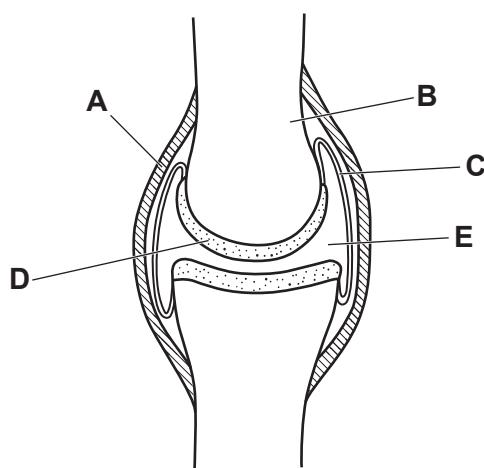
physical activity .....

example .....

..... [1]

[Total: 8]

- 9 The diagram shows the structure of a typical synovial joint.



- (a) Identify **one** type of synovial joint in the body.

..... [1]

- (b) (i) Draw **five** lines to match the components of the synovial joint to the letters **A** to **E**.

| component         | letter on diagram |
|-------------------|-------------------|
| cartilage         | <b>A</b>          |
| bone              | <b>B</b>          |
| ligament          | <b>C</b>          |
| synovial fluid    | <b>D</b>          |
| synovial membrane | <b>E</b>          |

[4]

- (ii) Describe **one** different function for each of the following components:

cartilage .....

ligament .....

synovial fluid .....

synovial membrane. ....

[4]

[Total: 9]

- 10 Explain how each of the following muscle fibre types may benefit a long-distance cyclist:

slow-twitch muscle fibres

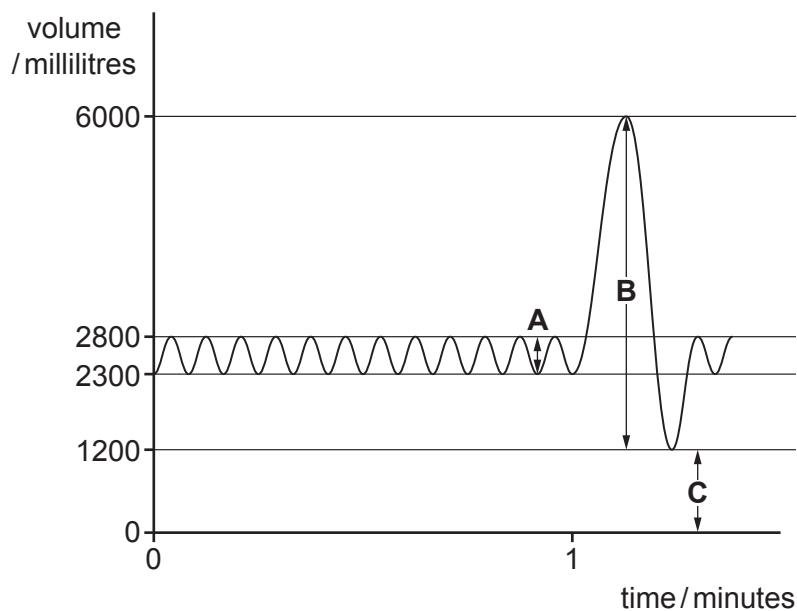
.....  
.....  
.....  
.....

fast-twitch muscle fibres.

.....  
.....  
.....  
.....

[4]

- 11 The diagram shows a performer's breathing volumes on a spirometer trace.



- (a) (i) Identify the breathing volumes labelled **A**, **B** and **C**.

**A** .....

**B** .....

**C** .....

[3]

- (ii) Calculate the volumes of **A**, **B** and **C**.

**A** .....

.....

**B** .....

.....

**C** .....

[3]

- (iii) Calculate the performer's minute ventilation for the first minute shown.

.....

[1]

- (b) The respiratory muscles contract when breathing in.

Describe a different function for each of **two** named respiratory muscles when breathing in.

muscle 1 .....

function .....

.....  
muscle 2 .....

function .....

[4]

[Total: 11]

- 12 (a) Explain how the function of each of the following types of blood vessel is supported by their structure:

arteries .....

.....  
veins .....

.....  
capillaries .....

[3]

- (b) Define cardiac output.

.....  
.....  
.....  
..... [2]

[Total: 5]

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