Cambridge Assessment International Education

Cambridge IGCSE™

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER				

8391347042

PHYSICAL EDUCATION **0413/12**

Paper 1 Theory **May/June 2024**

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.

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1 Identify each type of anxiety described.

The performer sweats, has a nervous feeling in their stomach and an increase in heart rate.

.....

The performer suffers fear, worry, doubt or negative thoughts.

.....

[2]

2 Hypertrophy is a long-term effect of regular exercise on the heart.

(a) Describe hypertrophy of the heart and explain how it may benefit performance.

description .....

.....

benefit .....

.....

[2]

(b) Other than hypertrophy, describe **three** long-term effects of regular exercise on the cardiovascular system.

1 .....

.....

2 .....

.....

3 .....

.....

[3]

[Total: 5]

3 **(a)** Complete the table to show components of fitness and a recognised test that could be used to measure each component of fitness.

component of fitness	recognised test
power	....
....	Anderson Wall Toss Test
agility	....
....	Multi-stage Abdominal Curl Conditioning Test

[4]

(b) Explain **three** ways that fitness testing could lead to an improvement in performance.

1 .....

.....

2 .....

.....

3 .....

.....

[3]

(c) Use a named physical activity to describe how each of the following components of fitness could benefit a performer:

physical activity .....

reaction time .....

.....

flexibility .....

.....

dynamic balance. .....

.....

[3]

[Total: 10]

4 The diagram shows the performance of a weight-training exercise.



(a) (i) Identify **two** principles of overload. Describe an example of how each principle can be applied to a weight-training programme.

principle of overload 1 .....

example .....

.....

principle of overload 2 .....

example .....

.....

[4]

(ii) Describe how to calculate the one rep max when taking part in weight training.

.....

.....

.....

.....

.....

..... [2]

(b) Use of a spotter helps to reduce the risk and severity of injury when taking part in weight training.

Describe **two** other strategies to reduce the risk and severity of injury when taking part in weight training.

1 .....

.....

2 .....

.....

[2]

(c) Weight training can be used by sprinters as part of their training programme.

Describe **two** benefits of weight training for a sprinter.

1 .....

.....

2 .....

.....

[2]

[Total: 10]

5 Companies may be chosen to sponsor a global event such as the Olympic Games.

Suggest advantages and disadvantages of being a sponsor of a global event such as the Olympic Games.

advantages .....

.....

.....

.....

.....

.....

disadvantages .....

.....

.....

.....

.....

.....

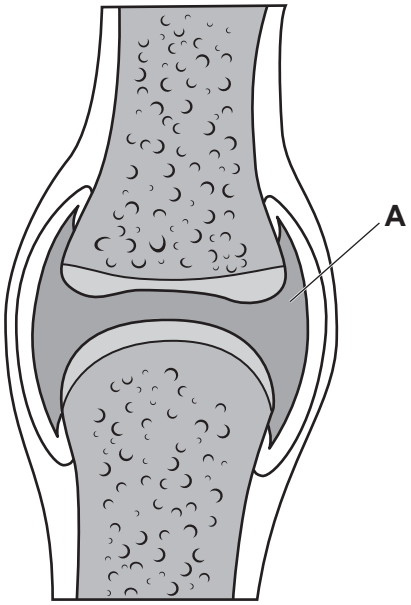
[5]

6 **(a)** Complete the table to show the name of each bone, the location of each bone, and the classification of each bone.

name of the bone	location of the bone	classification of the bone
	upper arm	
talus		
		flat

[6]

(b) The diagram shows a typical synovial joint with synovial fluid labelled **A**.



Label the diagram with the letter **B** to identify the cartilage and the letter **C** to identify the synovial membrane. [2]

[Total: 8]

7 Red blood cells are a component of blood. They contain haemoglobin to transport oxygen.

Identify **two** other components of blood. Describe a different function of each component.

component 1 .....

function .....

.....

component 2 .....

function .....

.....

[4]

8 **(a)** **(i)** Describe the difference between an isotonic muscle contraction and an isometric muscle contraction.

.....

.....

..... [1]

(ii) Place a tick in the box that describes a situation where an isometric contraction occurs in the quadriceps group.

footballer kicking a ball	☐
cricket player throwing a ball	☐
sprinter in the blocks ready to start a race	☐
tennis player running to return the ball	☐

[1]

(b) Photographs **A** and **B** show a performer training for a sculling (rowing) race.

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A **B**

Identify the type of movement and the antagonist muscle at the elbow joint and the shoulder joint as the performer moves from **A** to **B**.

elbow joint

type of movement .....

antagonist muscle .....

shoulder joint

type of movement .....

antagonist muscle .....

[4]

[Total: 6]

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9 Carbohydrate is a nutrient that provides energy.

(a) State another nutrient that provides energy. Identify a food source rich in that nutrient.

nutrient .....

food source .....
[2]

(b) Marathon runners run at a steady pace for the majority of the race but may sprint during the last part of the race.

Compare how energy is released during the majority of the race with how energy is released for the sprint at the end.

.....

.....

.....

.....

.....

..... [3]

[Total: 5]

10 **(a)** Explain how each of the following factors can affect a performer's skill level:

age and maturity .....

.....

culture .....

.....

arousal conditions .....

.....

motivation. .....

.....

[4]

(b) There are many characteristics of a skilled performance.

(i) Describe an example of **one** named characteristic of a skilled performance from rugby.

characteristic .....

example from rugby .....

.....

[2]

(ii) Describe an example of a different named characteristic of a skilled performance from artistic gymnastics.

characteristic .....

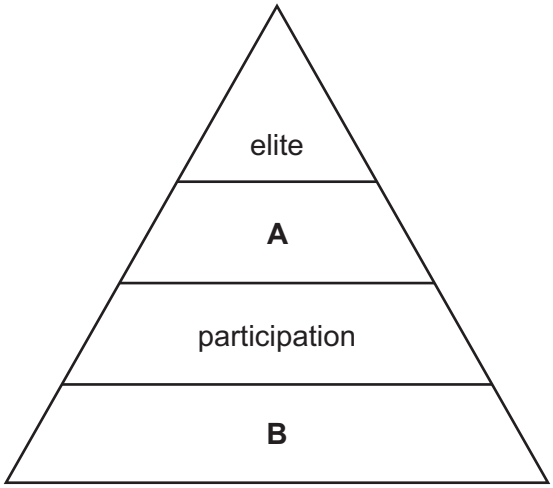
example from artistic gymnastics .....

.....

[2]

[Total: 8]

11 The diagram shows the sports development pyramid.



(a) (i) Identify the levels of the pyramid labelled **A** and **B**.

A .....

B .....

[2]

(ii) Describe **three** characteristics of level **B**.

1 .....

.....

.....

2 .....

.....

.....

3 .....

.....

.....

[3]

(b) Suggest strategies that could be used to help performers progress to elite level.

.....

.....

.....

.....

.....

..... [3]

[Total: 8]

12 **(a)** Identify the **three** stages of a warm up.

stage 1 .....

stage 2 .....

stage 3 .....

[3]

(b) Describe **two** psychological reasons for completing a cool down.

1 .....

.....

2 .....

.....

[2]

(c) A cool down can speed up the recovery time of a performer.

Explain how **three** other factors may affect the recovery time of a performer.

1 .....

.....

2 .....

.....

3 .....

.....

[3]

[Total: 8]

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13 **(a)** Identify the structures **A**, **B** and **C** in the table to complete the pathway of air into the body.

mouth / nasal passage
↓
A
↓
bronchi
↓
B
↓
C

[3]

(b) Describe the following breathing volumes:

tidal volume .....

.....

vital capacity .....

.....

residual volume .....

.....

minute ventilation. .....

.....

[4]

[Total: 7]

14 One short-term effect of exercise on a performer is an increase in heart rate.

Describe **three** other short-term effects of exercise.

1 .....

.....

2 .....

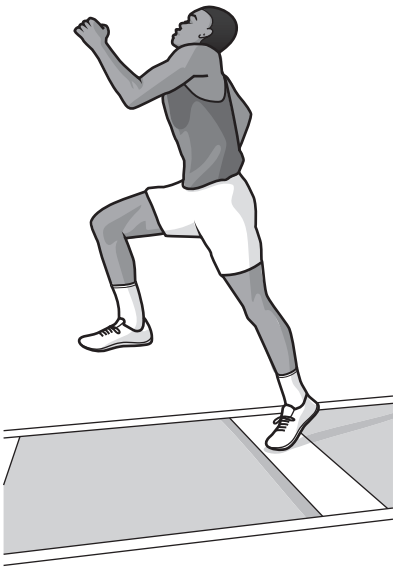
.....

3 .....

.....

[3]

15 The diagram shows a performer pushing off from the take-off board when long jumping.



(a) (i) Identify which class of lever is being used as the foot pushes off the take-off board.

..... [1]

(ii) State the **three** components of a lever system.

1 .....

2 .....

3 .....

[3]

(b) Explain how **two** named forces will act on the performer when long jumping.

force 1 .....

explanation .....

.....

force 2 .....

explanation .....

.....

[4]

(c) Identify **three** different types of feedback the long jumper may receive.

1 .....

2 .....

3 .....

[3]

[Total: 11]

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