* 0000800000001 *

Cambridge Assessment International Education

Cambridge IGCSE™

CANDIDATE NAME	

CENTRE NUMBER						CANDIDATE NUMBER				

* 9 7 2 7 8 2 7 0 9 3 *

PHYSICAL EDUCATION **0413/12**

Paper 1 Theory **October/November 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.

DC (PQ/SW) 329628/1
© UCLES 2024

1 Fitness is important for sports performance.

(a) Define fitness.

.....

..... [1]

(b) A coach may carry out fitness tests to identify the strengths and weaknesses of a performer.

Suggest **three** other reasons why a coach may carry out fitness tests.

1 .....

.....

2 .....

.....

3 .....

.....

[3]

[Total: 4]

DO NOT WRITE IN THIS MARGIN

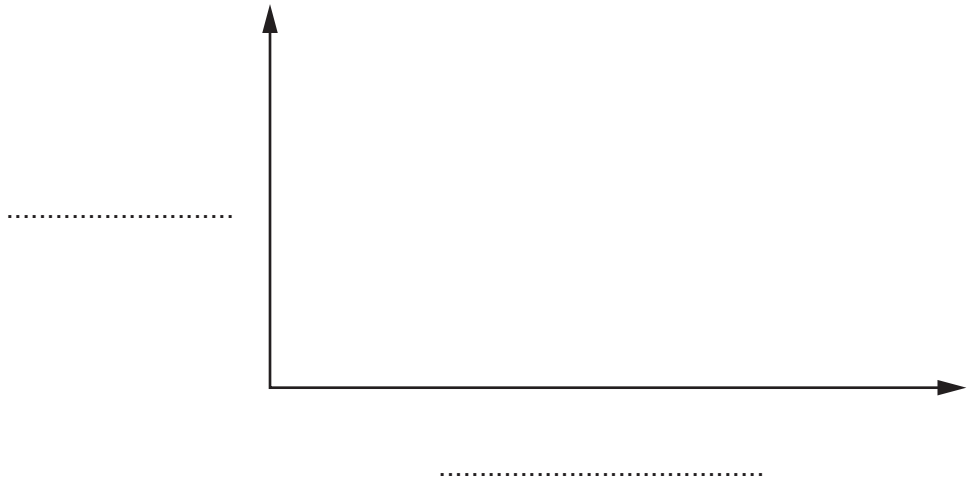
2 The arousal level of a performer can affect how well they can perform skills.

(a) Describe what is meant by arousal.

.....

..... [1]

(b) **(i)** Sketch the Yerkes–Dodson law. Label both axes.



[3]

(ii) State the other recognised name for the Yerkes–Dodson law.

..... [1]

(c) Using a named physical activity, explain how each of the following levels of arousal may affect the performance of a named skill.

physical activity .....

skill .....

underarousal .....

.....

.....

optimal arousal .....

.....

.....

overarousal .....

.....

.....

[3]

[Total: 8]

DO NOT WRITE IN THIS MARGIN

3 The photograph shows performers in a table tennis match.

Content removed due to copyright restrictions.

(a) Coordination is needed in table tennis so that the performer can see the ball and hit it with the bat.

(i) Other than coordination, explain how **three** named components of fitness may benefit performance in table tennis.

component of fitness 1 .....

explanation .....

.....

component of fitness 2 .....

explanation .....

.....

component of fitness 3 .....

explanation .....

.....

[6]

DO NOT WRITE IN THIS MARGIN

(ii) Describe how to carry out a named fitness test to measure coordination.

name of test .....

description .....

.....

.....

.....

.....

.....

.....

.....

[4]

(b) Before playing a table tennis match a performer should warm up.

Identify the **three** phases of a warm up.

1 .....

2 .....

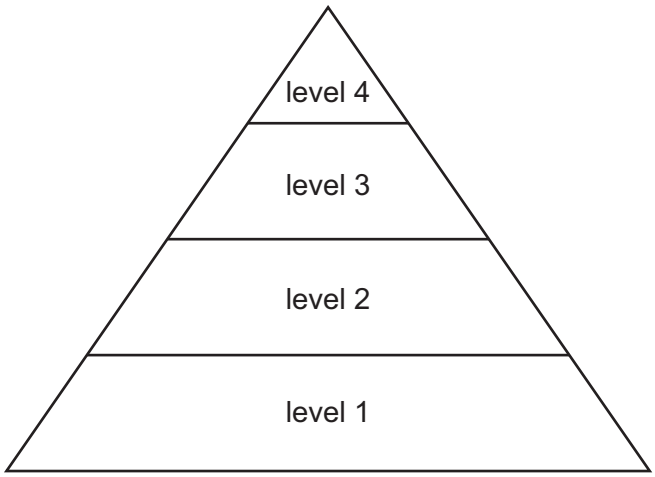
3 .....

[3]

[Total: 13]

DO NOT WRITE IN THIS MARGIN

4 The sports development pyramid has four levels.



(a) Level 4 of this sports development pyramid is the elite level.

Identify the other **three** levels.

level 3 .....

level 2 .....

level 1 .....

[3]

(b) Describe **three** characteristics of the lowest level of the sports development pyramid.

1 .....

.....

2 .....

.....

3 .....

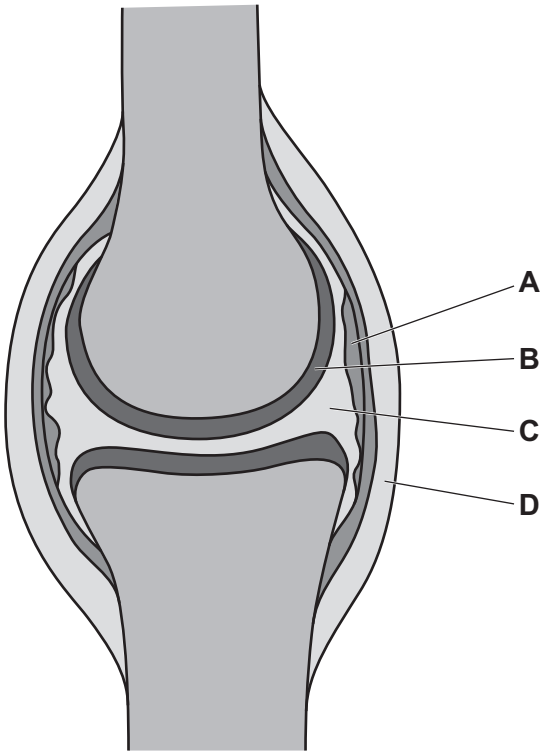
.....

[3]

[Total: 6]

DO NOT WRITE IN THIS MARGIN

5 **(a)** The diagram shows a typical synovial joint.



Complete the table to identify the labelled structures in the synovial joint. State a different function for each structure.

label	name of structure	function
A	synovial membrane	
B		
C		lubricates the joint
D	ligament	

[5]

(b) The knee joint is a synovial joint.

Identify **two** types of movement that can occur at the knee joint.

1 .....

2 .....

[2]

(c) Compare the range of movement and stability at the knee joint with the range of movement and stability at the hip joint.

.....

.....

.....

..... [2]

[Total: 9]

DO NOT WRITE IN THIS MARGIN

6 The photograph shows performers playing football.

Access to facilities and equipment can affect participation in football.

Explain how **four** other named factors can affect participation in football.

factor 1 .....

explanation .....

.....

factor 2 .....

explanation .....

.....

factor 3 .....

explanation .....

.....

factor 4 .....

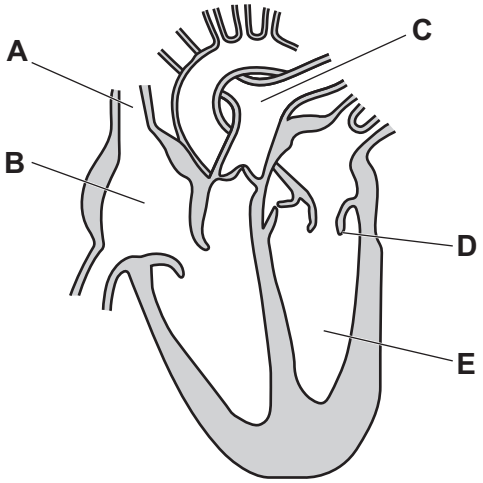
explanation .....

.....

[8]

DO NOT WRITE IN THIS MARGIN

7 **(a)** The diagram shows the structure of the heart.



Identify the following structures:

A .....

B .....

C .....

D .....

E. .....

[5]

(b) A performer has a resting heart rate of 60 beats per minute and a cardiac output of 4.2 litres per minute.

(i) Calculate the stroke volume of the performer. Include appropriate units.

..... [2]

(ii) The performer uses regular continuous training.

Describe how this affects the stroke volume of the performer.

.....

..... [1]

[Total: 8]

DO NOT WRITE IN THIS MARGIN

8 **(a)** Use examples from a named physical activity to describe how a coach may provide **three** named types of guidance to a performer.

physical activity .....

type of guidance 1 .....

description .....

.....

.....

type of guidance 2 .....

description .....

.....

.....

type of guidance 3 .....

description .....

.....

.....
[6]

(b) Coaches often provide guidance to help performers in the cognitive stage of learning.

Suggest benefits for cognitive performers of receiving guidance.

.....

.....

.....

..... [2]

[Total: 8]

DO NOT WRITE IN THIS MARGIN

BLANK PAGE

DO NOT WRITE IN THIS MARGIN

9 Prohibited performance-enhancing drugs (PEDs) may be used by performers in different physical activities.

(a) Complete the table to identify a different type of prohibited PED that may be used for each physical activity. Justify each of your answers.

physical activity	different type of prohibited PED	justification
Content removed due to copyright restrictions. javelin		
 judo		
Content removed due to copyright restrictions. swimming		
Content removed due to copyright restrictions. golf		

[8]

DO NOT WRITE IN THIS MARGIN

(b) Performers are regularly tested to check for the use of prohibited PEDs.

Other than facing public humiliation, describe **three** different disadvantages for a performer of using prohibited PEDs.

1 .....

2 .....

3 .....
[3]

[Total: 11]

10 Describe a different function of each of the following nutrients:

carbohydrates .....

.....

fats .....

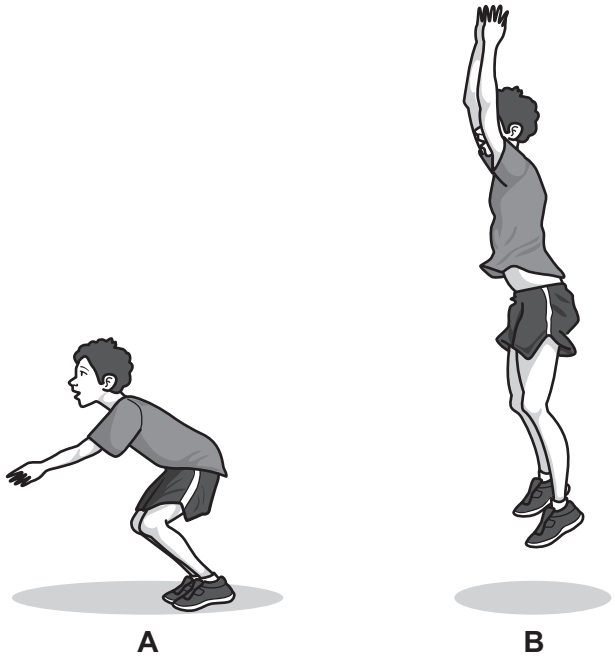
.....

proteins. .....

.....
[3]

DO NOT WRITE IN THIS MARGIN

11 The diagram shows part of the performance of a Vertical Jump Test.



(a) Identify the component of fitness measured by the Vertical Jump Test.

..... [1]

(b) **(i)** Identify the type of movement at each of the following joints from position **A** to position **B**:

hip joint .....

shoulder joint. .....
[2]

(ii) Identify an agonist and an antagonist at the hip joint during the movement from position **A** to position **B**.

agonist .....

antagonist .....
[2]

(iii) Identify the type of isotonic muscle contraction in the agonist at the hip joint during the movement from position **A** to position **B**. Describe this type of muscle contraction.

type of isotonic muscle contraction .....

description .....

.....
[2]

[Total: 7]

DO NOT WRITE IN THIS MARGIN

12 Deep breathing is a relaxation technique that can be used to control arousal levels.

Describe **two** other named relaxation techniques that a performer can use to control arousal levels.

relaxation technique 1 .....

description .....

.....

relaxation technique 2 .....

description .....

.....

[4]

13 The Olympic Games is an example of a global event.

Explain how a nation may benefit from hosting a global event.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... [5]

DO NOT WRITE IN THIS MARGIN

14 Muscles need a good supply of oxygen.

(a) Explain how the following characteristics of the alveoli assist gaseous exchange:

large surface area .....

.....

walls with a thickness of one cell. .....

.....
[2]

(b) Identify **two** named muscles of the respiratory system that contract when breathing in. Describe how each muscle increases the volume of the chest cavity.

muscle 1 .....

description .....

.....

muscle 2 .....

description .....

.....
[4]

[Total: 6]

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.

To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced online in the Cambridge Assessment International Education Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download at www.cambridgeinternational.org after the live examination series.

Cambridge Assessment International Education is part of Cambridge Assessment. Cambridge Assessment is the brand name of the University of Cambridge Local Examinations Syndicate (UCLES), which is a department of the University of Cambridge.

DO NOT WRITE IN THIS MARGIN