Cambridge Assessment International Education

Cambridge IGCSE™

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER				

4898563214

PHYSICAL EDUCATION **0413/13**

Paper 1 Theory **October/November 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.

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1 The photographs show a performer in a rowing (sculling) race.



A



B

(a) Complete the table to show the type of movement at each of the named joints from position **A** to position **B**.

joint	type of movement from position **A** to position **B**
elbow	
knee	
hip	

[3]

(b) Describe how **two** named muscles work together to cause the movement at the knee from position **A** to position **B**.

.....

.....

.....

.....

.....

.....

.....

..... [4]

(c) The knee is an example of a synovial joint.

(i) State where you would find an example of each of the following types of joint:

fixed .....

slightly movable. .....
[2]

(ii) Identify **two** bones that form the knee joint.

1 .....

2 .....
[2]

(d) The skill of rowing (sculling) can be classified using different continua.

Identify **two** different skill classification continua. Justify the placement of the skill of rowing (sculling) on each continuum.

continuum 1 .....

justification .....

.....

continuum 2 .....

justification .....

.....
[4]

(e) Explain the aerobic energy demands and the anaerobic energy demands for a performer in a 2000-metre rowing (sculling) race.

aerobic .....

.....

.....

anaerobic .....

.....

.....
[2]

[Total: 17]

2 **(a)** State the **three** components of a lever.

1 .....

2 .....

3 .....

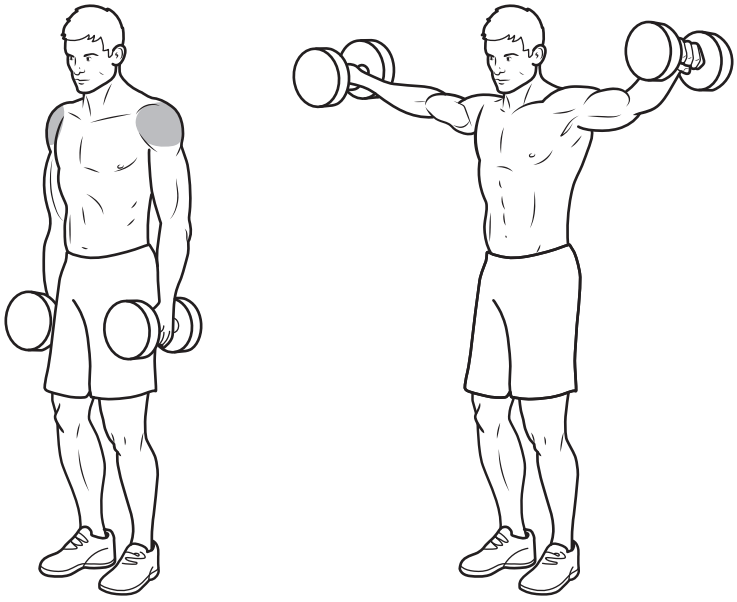
[3]

(b) Draw and label a third-class lever.

[1]

[Total: 4]

3 **(a)** The diagrams show a performer during a weight-training exercise.



position **A** position **B**

(i) Identify the shaded muscles in position **A**.

..... [1]

(ii) Identify the type of isotonic muscle contraction occurring at the shaded muscles when moving from position **A** to position **B**. Describe this type of isotonic muscle contraction.

type of isotonic contraction .....

description .....

.....
[2]

(iii) Identify the type of movement at the shoulder from position **A** to position **B**.

..... [1]

(b) Weight training is a method of training.

(i) Describe **one** advantage and **one** disadvantage of weight training.

advantage .....

.....

disadvantage .....

.....
[2]

(ii) The 1 Rep Max (1RM) Test can be used to calculate a suitable intensity for weight training.

Describe how the 1 Rep Max (1RM) Test is carried out.

.....

.....

.....

.....

.....

.....

.....

..... [4]

[Total: 10]

4 Describe **three** advantages and **three** disadvantages of sponsorship for a performer.

advantages

1 .....

.....

2 .....

.....

3 .....

.....

disadvantages

1 .....

.....

2 .....

.....

3 .....

.....

[6]

5 Decision making is one of the four stages in a basic information processing model.

Identify the other **three** stages. Describe how each of these stages is used by a performer in a named physical activity.

physical activity .....

stage 1 .....

description of use .....

.....

stage 2 .....

description of use .....

.....

stage 3 .....

description of use .....

.....

[6]

6 Education in schools can increase participation in physical activities by providing facilities and equipment.

Other than providing facilities and equipment, suggest different strategies that schools can use to increase participation in physical activities.

.....

.....

.....

.....

.....

.....

.....

..... [4]

7 Complete the table to show the missing structures and functions of the circulatory system.

structure	function
	pumps blood away from the heart to the lungs
valve	
	vein which brings blood to the heart from the lungs
vena cava	
	artery which takes blood away from the heart to the body

[5]

8 Taking part in a physical activity can have a positive effect on a person's physical health and well-being.

Identify **two** other aspects of health and well-being.

1 .....

2 .....

[2]

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9 **(a)** Circle the **two** fitness tests which can be used to measure a person's cardiovascular endurance.

30-Metre Sprint Test

12-Minute Cooper Run

Multi-Stage Fitness Test

Multi-Stage Abdominal Curl Conditioning Test

Sit and Reach Test

[2]

(b) Circle the false statement.

The principles of overload are Frequency, Interval, Time and Type.

Overload is one of the principles of training.

Reversibility can result in a drop in fitness levels.

[1]

(c) Describe **four** reasons why a coach would carry out fitness testing on a performer.

1 .....

.....

2 .....

.....

3 .....

.....

4 .....

.....

[4]

[Total: 7]

10 The photograph shows performers in a game of water polo.



(a) Suggest **three** real risks to performers when playing water polo in a swimming pool. Suggest a different strategy to reduce each risk.

real risk 1 .....

strategy .....

.....

real risk 2 .....

strategy .....

.....

real risk 3 .....

strategy .....

.....

[6]

(b) Performers in water polo need a high level of cardiovascular endurance to keep swimming for long periods of time.

(i) Other than cardiovascular endurance, identify **three** components of fitness. Describe different ways each component of fitness may benefit a performer in water polo.

component of fitness 1 .....

benefit .....

.....

component of fitness 2 .....

benefit .....

.....

component of fitness 3 .....

benefit .....

.....

[6]

(ii) Water polo performers may have high VO_2 max levels because of their training.

Other than training, identify **two** factors that can affect VO_2 max level.

1 .....

2 .....

[2]

[Total: 14]

11 Arousal and anxiety can affect performance.

(a) Suggest **two** examples of somatic anxiety.

1 .....

2 .....
[2]

(b) Suggest **one** effect of overarousal on performance.

..... [1]

(c) Using examples from a named physical activity, explain why different levels of arousal may be required for the performance of different skills.

physical activity .....

.....

.....

.....

.....

.....

..... [2]

[Total: 5]

12 Identify the **two** main personality types. Describe **two** different characteristics of each personality type.

personality type 1 .....

characteristic 1 .....

characteristic 2 .....

personality type 2 .....

characteristic 1 .....

characteristic 2 .....
[6]

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13 (a) One benefit of goal setting is that it can be used to motivate a performer.

Describe **one** other benefit of using goal setting for a performer.

.....

..... [1]

(b) A 400-metre runner has discussed with their coach and written down the following goal:

'improve my personal best for the 400 metres by 0.8 seconds by the end of the season'.

Explain whether this goal has met each of the following principles of goal setting:

specific .....

.....

measurable .....

.....

agreed .....

.....

time-phased .....

.....

recorded. .....

.....

[5]

[Total: 6]

14 Gaseous exchange takes place at the alveoli.

(a) Describe what is meant by gaseous exchange at the alveoli.

.....

..... [2]

(b) Describe **three** characteristics of the alveoli that enable rapid gaseous exchange to occur.

1 .....

.....

2 .....

.....

3 .....

.....

[3]

[Total: 5]

15 Performance-enhancing drugs are prohibited in sport.

For each type of drug, suggest a physical activity where use of the type of drug might enhance performance. Justify your answers. Use a different physical activity for each answer.

anabolic steroids

physical activity .....

justification .....

.....

beta blockers

physical activity .....

justification .....

.....

diuretics

physical activity .....

justification .....

.....

[3]

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