Cambridge Assessment International Education

Cambridge IGCSE™

CANDIDATE NAME	

CENTRE NUMBER						CANDIDATE NUMBER				

2222869745 1

PHYSICAL EDUCATION **0413/11**

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 Television is one type of media coverage.

Identify **two** other types of media coverage.

1 .....

2 .....
[2]

2 **(a)** State the name of each heart chamber from its description.

description	name of heart chamber
contracts to pump oxygenated blood to all parts of the body	
receives deoxygenated blood from the body	
contracts to pump deoxygenated blood to the lungs	

[3]

(b) Describe **two** functions of the valves in the heart.

1 .....

2 .....
[2]

[Total: 5]

3 The photograph shows a snowboarder on a mountain slope.

Snowboarders require a high level of cardiovascular endurance and muscular endurance to perform well.

(a) Explain how **three** other named components of fitness may benefit a snowboarder.

component of fitness 1 .....

benefit .....

.....

component of fitness 2 .....

benefit .....

.....

component of fitness 3 .....

benefit .....

.....

[6]

(b) Describe **two** real risks for a snowboarder when performing on a mountain slope. Suggest a different strategy that could be used to reduce the risk and severity of injury for each risk.

risk 1 .....

.....

strategy to reduce the risk and severity of injury .....

.....

risk 2 .....

.....

strategy to reduce the risk and severity of injury .....

.....
[4]

[Total: 10]

4 Sprinting in track and field athletics is usually performed at high intensity.

(a) Outline how energy is released during a sprint. Include a summary equation in your answer.

.....

.....

.....

..... [3]

(b) Explain how **two** named factors can affect the recovery time of a performer after a sprint.

factor 1 .....

explanation .....

.....

factor 2 .....

explanation .....

.....
[4]

[Total: 7]

5 Photograph **A** shows a group of beginners learning tennis skills and photograph **B** shows professional tennis players during a match.

A

B

(a) Suggest the stage of learning of the performers in each photograph. Describe a different characteristic of a performer at each stage of learning.

photograph **A**

stage of learning .....

characteristic .....

.....

photograph **B**

stage of learning .....

characteristic .....

.....

[4]

(b) A tennis coach could use manual guidance with tennis performers.

Describe how **two** other named types of guidance could be provided for the performers in photograph **B**.

type of guidance 1 .....

description .....

.....

type of guidance 2 .....

description .....

.....

[4]

(c) **(i)** Describe the concept of limited channel capacity.

.....

..... [1]

(ii) Suggest how a coach's understanding of the concept of limited channel capacity can influence how they coach a performer.

.....

.....

.....

..... [2]

[Total: 11]

6 Performers should warm up before a physical activity and cool down after a physical activity.

(a) Explain a different benefit from each of the following phases of a warm up:

pulse raiser .....

.....

stretches .....

.....

familiarisation / skill-related activities. .....

.....
[3]

(b) Suggest **two** benefits of a cool down.

1 .....

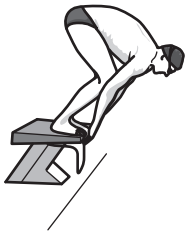
.....

2 .....

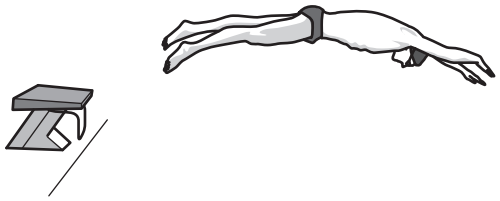
.....
[2]

[Total: 5]

7 The diagrams **A** and **B** show a swimmer diving off the starting blocks at the beginning of a race.



A



B

(a) Complete the table to show the type of synovial joint, the type of movement and the main agonist muscle as the performer moves from **A** to **B**.

name of joint	type of synovial joint	type of movement	main agonist muscle
shoulder joint			deltoid
knee joint		extension	
ankle joint	hinge		

[6]

(b) A synovial joint is one type of joint.

Identify **two** types of joint other than synovial joints. State an example of each type of joint.

type of joint 1 .....

example .....

type of joint 2 .....

example .....

[4]

[Total: 10]

8 Suggest strategies that could be used to increase participation and overcome barriers for women in sport.

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... [5]

9 Suggest how **two** named principles of training can be applied to a circuit-training programme.

principle of training 1 .....

application .....

.....

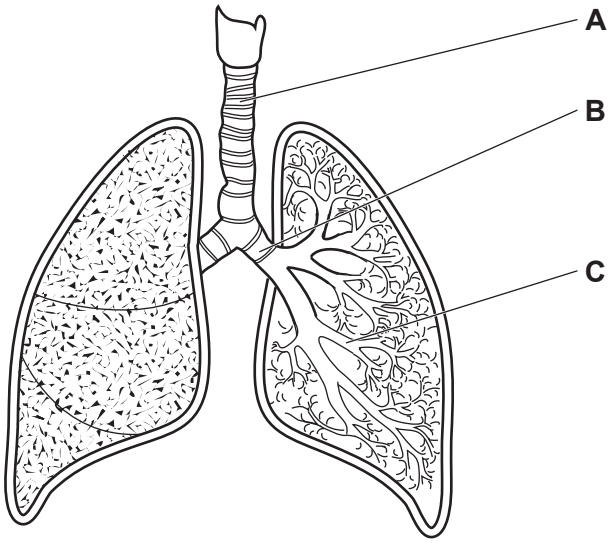
principle of training 2 .....

application .....

.....

[4]

10 The diagram shows part of the pathway of air into the body.



(a) Identify the structures labelled **A**, **B** and **C**.

A .....

B .....

C .....

[3]

(b) Some statements and explanations about alveoli are shown.

Draw a line from each statement on the left to its correct explanation on the right.

One has been done for you.

statement	explanation
alveoli are well ventilated	air can reach them easily
alveoli have a good blood supply because	they are one cell thick
gases can pass through the walls of the alveoli quickly because	they are surrounded by capillaries
alveoli create a large surface area for diffusion because	bronchi have rings of cartilage
	there are millions of alveoli in each lung

[3]

(c) **(i)** Minute ventilation is a measure of the efficiency of the respiratory system.

Identify the **two** components used to calculate minute ventilation and state their units of measurement.

component 1 ..... unit of measurement .....

component 2 ..... unit of measurement .....

[2]

(ii) Describe residual volume. State the effect that exercise has on residual volume.

residual volume .....

.....

.....

effect .....

[2]

[Total: 10]

11 Skills can be classified using different continua.

Using a named games activity, identify **one** skill that can be classified as a basic skill and a different skill that can be classified as a complex skill. Justify each of your answers.

games activity .....

basic skill .....

.....

justification .....

.....

complex skill .....

.....

justification .....

.....

[4]

12 Performers may choose to take prohibited performance-enhancing drugs (PED) to increase their chance of winning.

(a) For each of the following activities, identify a different type of PED that performers may choose to take. Describe the benefit to performance that each PED may have.

track cycling

type of PED .....

benefit to performance .....

.....

100-metre sprinting

type of PED .....

benefit to performance .....

.....

trampolining

type of PED .....

benefit to performance .....

.....
[6]

(b) Suggest reasons why some PEDs are banned.

.....

.....

.....

..... [2]

(c) Identify **two** types of testing that can be used to detect the use of PEDs.

1 .....

2 .....
[2]

[Total: 10]

13 The diagram shows a cyclist during a road race.

When cycling, forces such as air resistance will act on the cyclist.

(a) Complete the equation showing the concept of force.

force = ... × ..... [2]

(b) Suggest how a cyclist can reduce the effects of air resistance when cycling.

.....

.....

.....

..... [2]

[Total: 4]

14 **(a)** **(i)** Describe VO_2 max.

.....

..... [1]

(ii) Appropriate training can improve a performer's VO_2 max level.

Explain how another named factor may affect a performer's VO_2 max level.

factor .....

explanation .....

.....
[2]

(b) Identify **two** dangers of overtraining for a performer.

1 .....

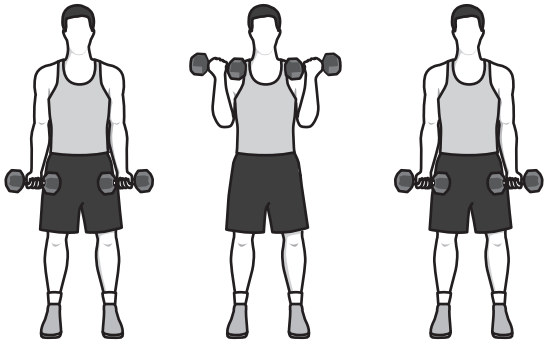
.....

2 .....

.....
[2]

[Total: 5]

15 The diagrams show a performer completing an arm curl exercise which uses different types of muscle contraction.



A **B** **C**

(a) **(i)** Describe the following types of muscle contraction:

concentric contraction .....

.....

eccentric contraction .....

.....

isometric contraction. .....

.....

[3]

(ii) Use the letters **A**, **B** and **C** from the diagrams to help describe when each of the following contractions take place in the bicep muscles during the arm curl exercise:

concentric contraction .....

.....

eccentric contraction .....

.....

isometric contraction. .....

.....

[3]

(b) Use an example to describe the role of tendons in movement at the elbow.

.....

.....

.....

..... [2]

[Total: 8]

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