Cambridge Assessment International Education

Cambridge IGCSE™

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER				

7868668414

PHYSICAL EDUCATION **0413/11**

Paper 1 Theory **May/June 2022**

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.

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1 Flexion and extension are two types of movement possible at the shoulder.

Identify **two** other types of movement that can take place at the shoulder.

1 .....

2 .....

[2]

2 The photograph shows a long jumper.

Power and balance are needed to perform a good long jump.



(a) Describe how **two** other named components of fitness benefit the performance of a long jumper.

component of fitness 1 .....

benefit to performance .....

.....

component of fitness 2 .....

benefit to performance .....

.....

[4]

(b) Describe how to carry out a named fitness test to measure power.

name of fitness test .....

description .....

.....

.....

.....

.....

.....

[4]

(c) A coach may carry out a range of fitness tests to assess the strengths and weaknesses of a performer.

Describe **two** other reasons why a coach may carry out a range of fitness tests with a performer.

1 .....

.....

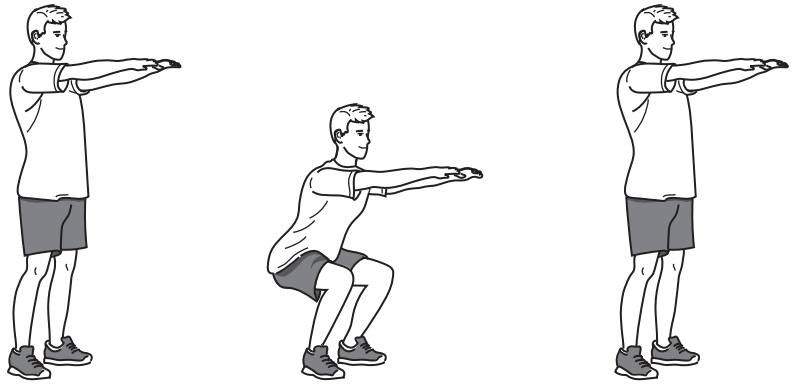
2 .....

.....

[2]

[Total: 10]

3 The diagram shows a performer completing a squat exercise.



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

(a) Describe the different named types of muscle contraction that take place in the quadriceps group during the following movements:

flexion at the knee from position **A** to **B**

type of contraction .....

description .....

.....

extension at the knee from position **B** to **C**.

type of contraction .....

description .....

.....

[4]

(b) The table shows the average percentage of fast twitch muscle fibres and the average percentage of slow twitch muscle fibres for groups of performers from three different physical activities.

group of performers	average percentage of fast twitch muscle fibres	average percentage of slow twitch muscle fibres
X	45	55
Y	30	70
Z	65	35

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(i) Identify which group of performers are most likely to be 100 m sprinters.

..... [1]

(ii) Describe how most energy is released during a 100 m sprint race.

.....

.....

.....

..... [2]

(iii) Describe **one** difference, other than how energy is released, between slow twitch muscle fibres and fast twitch muscle fibres.

.....

..... [1]

[Total: 8]

4 **(a)** Describe **two** ways that the media may have a positive effect on female participation in physical activities.

1 .....

.....

2 .....

.....

[2]

(b) Suggest barriers, other than those related to the media, that may have negatively affected female participation in physical activities.

.....

.....

.....

.....

.....

..... [3]

[Total: 5]

5 (a) (i) Define cardiac output.

.....

..... [1]

(ii) Calculate the cardiac output for a performer who has a resting heart rate of 72 beats per minute and a stroke volume of 75 ml.

Your answer must include a correct unit of measure.

cardiac output .....

unit of measure .....
[2]

(b) Complete the table to explain how **two** named factors can affect how quickly a performer can recover after an intense period of exercise.

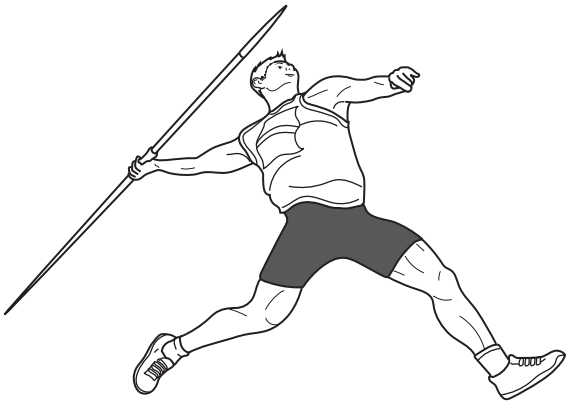
factor	explanation
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....

[4]

[Total: 7]

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6 The diagram shows a performer throwing a javelin.



(a) Describe **two** strategies, other than a warm up and cool down, that may reduce the risk and severity of injury when throwing a javelin.

1 .....

.....

2 .....

.....

[2]

(b) **(i)** Suggest **two** common injuries to the elbow or shoulder that could result from throwing the javelin.

injury 1 .....

.....

injury 2 .....

.....

[2]

(ii) The RICE method is used to treat some injuries.

Describe a different benefit of using each of the following parts of the RICE method to treat an injury.

ice .....

.....

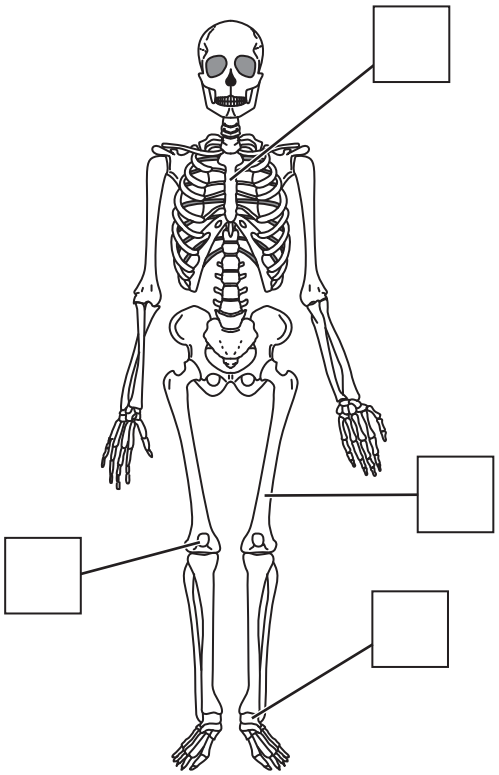
elevation .....

.....

[2]

[Total: 6]

7 The diagram shows a human skeleton.



(a) Identify the following bones by writing the appropriate letter **A**, **B**, **C** or **D** in each box.

A tarsals
B sternum
C femur
D patella

[4]

(b) **(i)** Complete the table to classify each named bone.

name of bone	classification of bone
tarsals	.....
sternum	.....
femur	.....

[3]

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(ii) Describe **three** different functions of the skeleton.

function 1 .....

.....

function 2 .....

.....

function 3 .....

..... [3]

[Total: 10]

8 One characteristic of a skilled performance is that it is aesthetically pleasing.

(a) Describe, using examples from a named physical activity, **two** other characteristics of a skilled performance.

physical activity .....

characteristic 1 .....

example .....

.....

characteristic 2 .....

example .....

.....

[4]

(b) Justify, using **three** examples from a named physical activity, why passing a ball in a team game can be classified as an open skill.

physical activity .....

1 .....

.....

2 .....

.....

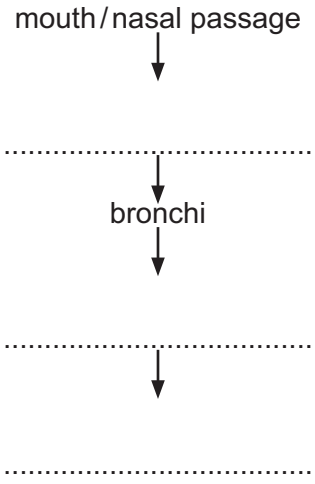
3 .....

.....

[3]

[Total: 7]

9 **(a)** Complete the flow diagram to show the pathway of air into the body.



[3]

(b) Describe a different function of each of the following when breathing in at rest.

diaphragm .....

.....

intercostal muscles .....

.....

[2]

(c) Describe **three** named breathing volumes.

breathing volume 1 .....

description .....

.....

breathing volume 2 .....

description .....

.....

breathing volume 3 .....

description .....

.....

[6]

[Total: 11]

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10 (a) Identify a different type of guidance that would be most appropriate for a performer at the following stages of learning. Justify each choice.

cognitive stage of learning

type of guidance .....

justification .....

.....

autonomous stage of learning

type of guidance .....

justification .....

.....

[4]

(b) Explain **three** reasons why feedback is important for a performer.

1 .....

.....

2 .....

.....

3 .....

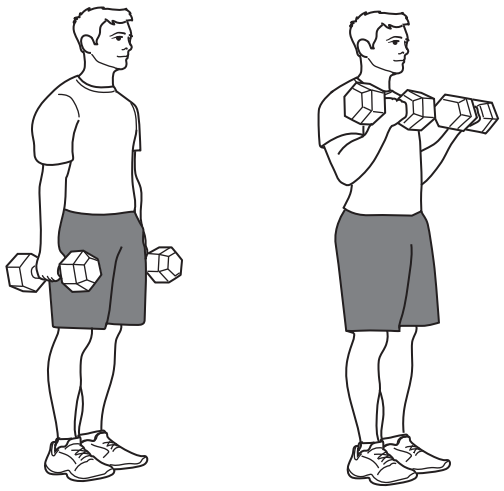
.....

[3]

[Total: 7]

11 The movement in the diagram from position **A** to position **B** shows the upward phase of a bicep curl.

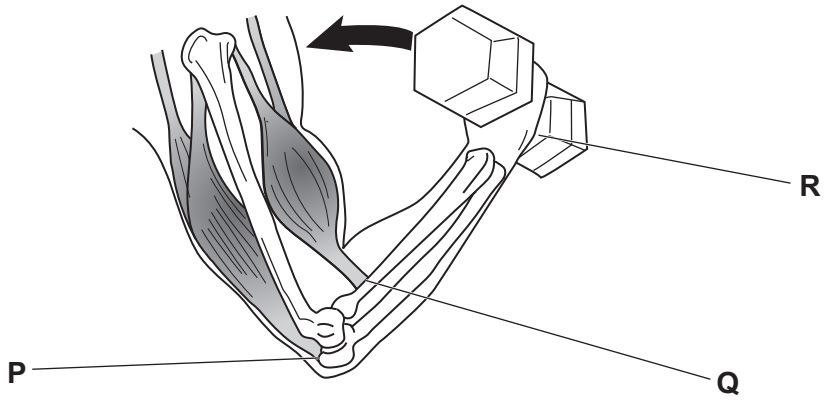
position **A** position **B**



(a) Identify the class of lever used in the upward phase of a bicep curl.

..... [1]

(b) The diagram shows the three components of a lever in the upward phase of a bicep curl.



Identify the **three** components of this class of lever.

P .....

Q .....

R .....

[3]

[Total: 4]

12 **(a)** Describe the function of the following nutrients.

fat .....

.....

protein .....

.....

water .....

.....
[3]

(b) Explain why energy balance must be suitable for a performer.

.....

.....

.....

..... [2]

[Total: 5]

13 Suggest a physical activity usually associated with a performer with an introvert personality type. Justify your choice.

physical activity .....

justification .....

.....
[2]

14 The photograph shows a group of long-distance runners who may have used continuous training in preparation for their event.



(a) Describe **two** advantages for the runners of using this method of training.

1 .....

.....

2 .....

.....

[2]

(b) Describe, using examples, how the following principles of overload could be applied to a long-distance runner using continuous training.

intensity .....

.....

time .....

.....

[2]

(c) Describe **two** short-term effects of exercise and **two** long-term effects of exercise.

short-term effects of exercise

1 .....

.....

2 .....

.....

long-term effects of exercise

1 .....

.....

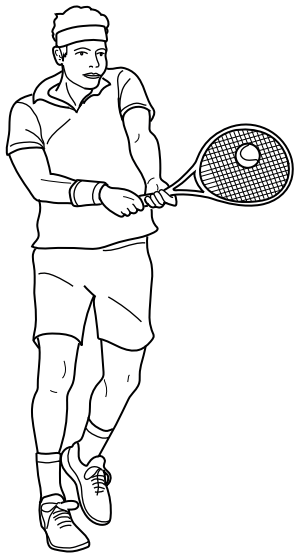
2 .....

.....

[4]

[Total: 8]

15 The diagram shows a tennis player hitting a ball.



(a) Describe how the following stages of a basic information processing model can be applied to hitting a ball in tennis.

input .....

.....

decision-making .....

.....

[2]

(b) Describe **two** characteristics of short-term memory.

1 .....

.....

2 .....

..... [2]

[Total: 4]

16 Red blood cells are a component of blood.

Identify **two** other components of blood and describe the function of each component.

component 1 .....

function .....

.....

component 2 .....

function .....

.....

[4]

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