Cambridge IGCSE

**Cambridge Assessment International Education**
Cambridge International General Certificate of Secondary Education

CANDIDATE NAME

CENTRE NUMBER

CANDIDATE NUMBER

*8255793866*

**PHYSICAL EDUCATION** **0413/12**

Paper 1 Theory **October/November 2019**

**1 hour 45 minutes**

Candidates answer on the Question Paper.

No Additional Materials are required.

**READ THESE INSTRUCTIONS FIRST**

Write your centre number, candidate number and name on all the work you hand in.
Write in dark blue or black pen.
You may use an HB pencil for any diagrams or graphs.
Do not use staples, paper clips, glue or correction fluid.
DO **NOT** WRITE IN ANY BARCODES.

Answer **all** questions.
Electronic calculators may be used.
You may lose marks if you do not show your working or if you do not use appropriate units.

The number of marks is given in brackets [ ] at the end of each question or part question.
The total mark for this paper is 100.

This document consists of **17** printed pages and **3** blank pages.


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Cambridge Assessment International Education

**[Turn over**

**1** Describe **two** functions of the skeleton that benefit a performer during a combat activity.

1 .....

.....

2 .....

.....

[2]

**2** The photograph shows a gymnast performing.




**(a)** Name and describe the type of muscle contraction that enables the gymnast to hold the position.

type of muscle contraction .....

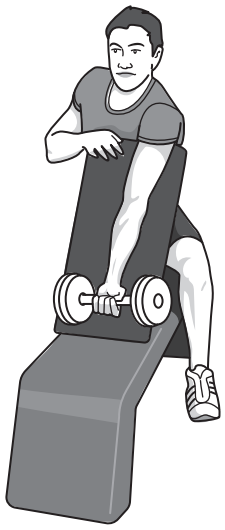
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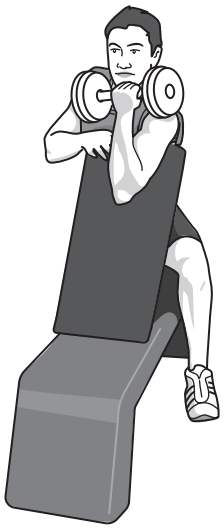
.....

[2]

**(b)** The diagrams show the performance of a weight-training exercise.



**A**



**B**

Name and describe the type of isotonic muscle contraction occurring in the biceps during each of the following movements:

from position **A** to position **B** .....

.....

.....

from position **B** to position **A**. .....

.....

.....

[4]

**(c)** **(i)** Name different physical activities in which a high proportion of the following muscle fibre types is beneficial.

slow-twitch muscle fibres

physical activity 1 .....

fast-twitch muscle fibres

physical activity 2 .....

[2]

**(ii)** Describe **two** differences between slow-twitch muscle fibres and fast-twitch muscle fibres.

1 .....

.....

2 .....

.....

[2]

[Total: 10]

**3** State **two** components of blood.

1 .....

2 .....

[2]

**4** **(a)** Describe, using examples from physical activities, **two** different causes of anxiety.

1 .....

.....

2 .....

.....

[2]

**(b)** State **two** relaxation techniques a performer might use to control arousal and anxiety immediately before competing in a physical activity.

1 .....

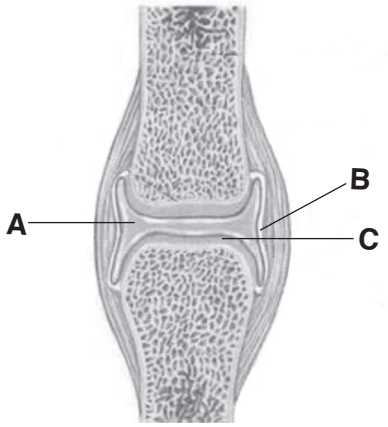
2 .....

[2]

[Total: 4]

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**5** The diagram shows a typical synovial joint with components labelled **A**, **B** and **C**.




**(a)** Name the components labelled **A**, **B** and **C** and describe a different function of each component.

component **A** .....

function .....

.....

component **B** .....

function .....

.....

component **C** .....

function .....

.....

[6]

**(b)** State a different type of movement that occurs at each of the following types of joint and describe an example of each type of movement from **one** named physical activity.

physical activity .....

type of movement at hinge joint .....

example .....

.....

type of movement at ball and socket joint .....

example .....

.....

[4]

[Total: 10]

**6** The diagrams show two performers. Performer **A** is lifting a heavy weight and performer **B** is running at a steady pace in an endurance race.



**A**




**B**

**(a)** State the main type of respiration being used by performer **A** to release energy when lifting a heavy weight.

..... [1]

**(b)** Describe the differences between how energy is being released by performer **A** and how energy is being released by performer **B**.

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... [4]

[Total: 5]

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**7** The table shows the distances (in metres) needed during a 12-Minute Cooper Run to achieve certain standards.

| gender | excellent | above average | average | below average | poor |
|---|---|---|---|---|---|
| male | more than 2800 | 2500–2800 | 2300–2499 | 2200–2299 | less than 2200 |
| female | more than 2100 | 1900–2100 | 1700–1899 | 1500–1699 | less than 1500 |

**(a)** Use the table to identify the standard achieved by each of the following performers in the 12-Minute Cooper Run:

a male who runs 2400 metres .....

a female who runs 2000 metres. .....
[2]

**(b)** Name the component of fitness measured by the 12-Minute Cooper Run.

..... [1]

**(c)** The Multi-Stage Fitness Test is another test that involves running.

Describe how to carry out the Multi-Stage Fitness Test.

.....

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.....

.....

.....

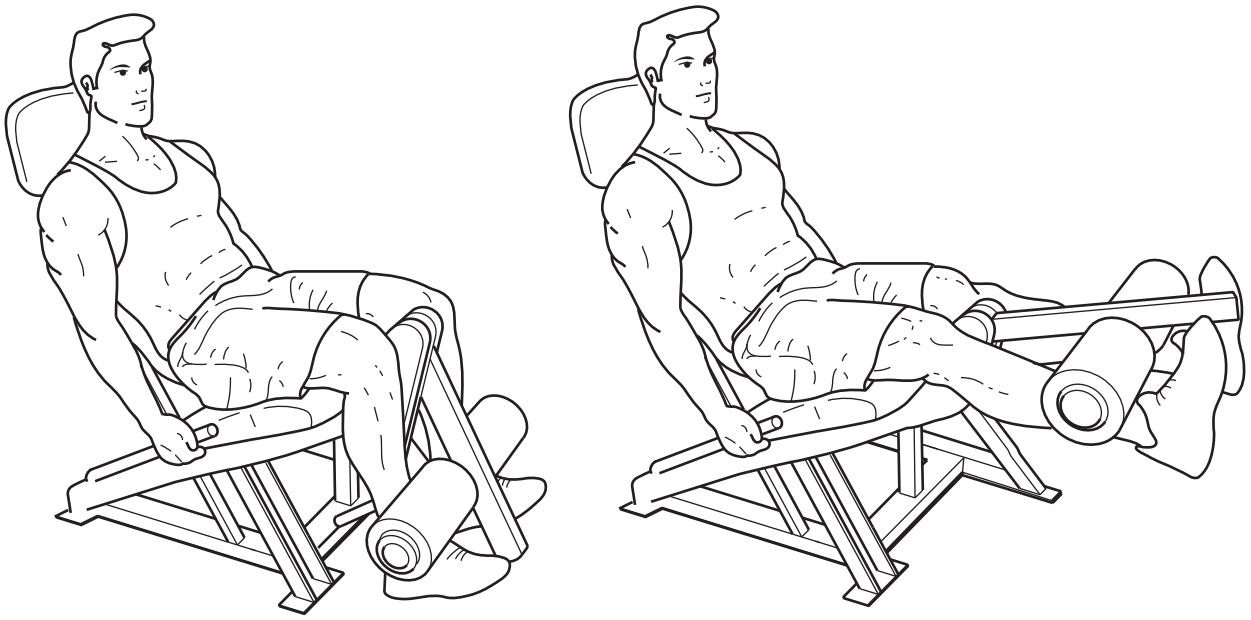
..... [4]

[Total: 7]

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**[Turn over**

**8** The diagrams show an adult performer carrying out a weight-training exercise for leg muscles.



**A** **B**

**(a)** State the main agonist and the main antagonist muscles in the movement shown between **A** and **B**.

agonist .....

antagonist .....

[2]

**(b)** The performer wants to increase the strength of their leg muscles.

Describe how they could calculate a suitable exercise intensity.

.....

.....

.....

..... [2]

[Total: 4]

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**9** **(a)** Explain why the recreational activities a person does may be influenced by the area in which they live.

.....

.....

.....

.....

.....

..... [3]

**(b)** Describe a positive effect of regular exercise on a performer for each of the following:

physical health and well-being .....

.....

.....

mental health and well-being .....

.....

.....

social health and well-being. .....

.....

.....

[3]

[Total: 6]

**10** The photograph shows a high jumper who requires power.



**(a)** Name **two** components of fitness, other than power, that are required by a high jumper. Describe a different benefit that each component provides for the high jumper.

component 1 .....

benefit .....

.....

.....

component 2 .....

benefit .....

.....

.....

[4]

**(b)** Name **two** different training methods. For each training method describe **two** examples of exercises that could be used to improve power.

training method 1 .....

example 1 .....

.....

.....

example 2 .....

.....

.....

training method 2 .....

example 1 .....

.....

.....

example 2 .....

.....

.....

[6]

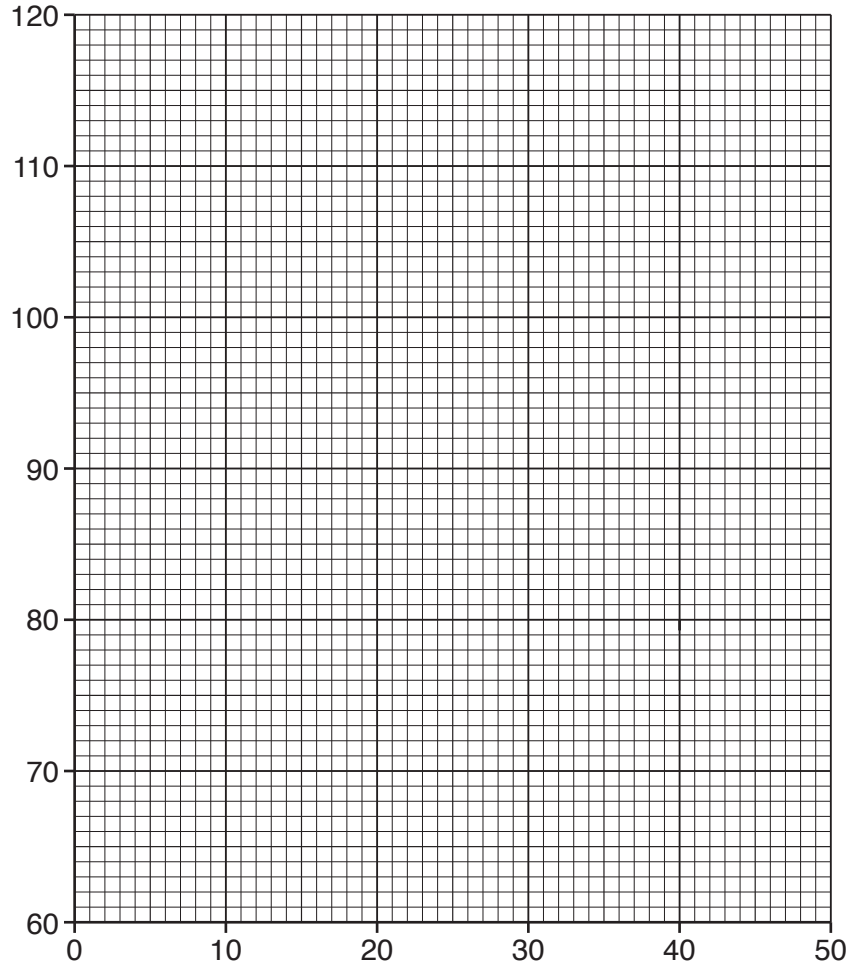
[Total: 10]

**11** **(a)** A 16-year-old performer completes a number of star jumps at a steady pace and then records their heart rate. They recover fully before completing the next set of star jumps.

The table shows the results.

| number of star jumps per set | 10 | 20 | 30 | 40 | 50 |
|---|---|---|---|---|---|
| heart rate / beats per minute | 78 | 98 | 112 | 115 | 115 |

Complete a line graph on the grid provided to show the results from the table. Label both axes.




.....

.....

.....

[3]

**(b)** Predict, using the results, the performer's heart rate if 60 star jumps were to be completed at the same pace. Give a reason for your answer.

prediction .....

reason .....

.....

.....

[2]

**(c)** Suggest the short-term effects on the body, other than an increase in heart rate, of performing a set of star jumps.

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.....

..... [4]

[Total: 9]

**12 (a)** State **three** characteristics of a skilled performance.

1 .....

2 .....

3 .....

[3]

**(b)** Explain, using examples, how **two** factors could cause variations in the skill level of performers.

1 .....

.....

.....

.....

2 .....

.....

.....

.....

[4]

[Total: 7]

**13 (a)** Describe the advantages and disadvantages of being a sponsor.

advantages .....

.....

.....

.....

.....

.....

disadvantages .....

.....

.....

.....

.....

.....

[6]

**(b)** Describe the different types of sponsorship in sport.

.....

.....

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.....

.....

..... [3]

[Total: 9]

**14 (a)** Describe what is meant by the following terms:

intrinsic motivation .....

.....

.....

extrinsic motivation. .....

.....

.....

[2]

**(b)** Suggest the disadvantages for a performer of high levels of extrinsic motivation.

.....

.....

.....

..... [2]

[Total: 4]

**15** The photograph shows performers involved in a water-based outdoor and adventurous activity.



**(a)** Define the term *perceived risk* and suggest an example of a perceived risk in a water-based outdoor and adventurous activity.

definition .....

.....

example .....

.....

[2]

**(b)** Describe **three** different strategies that could be used to reduce the real risk to performers in a water-based outdoor and adventurous activity.

1 .....

.....

.....

2 .....

.....

.....

3 .....

.....

.....

[3]

[Total: 5]

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**16** **(a)** Describe how education can affect participation in physical activities.

.....

.....

.....

..... [2]

**(b)** Describe ways that leisure facilities have tried to overcome the barriers to participation for performers with disabilities.

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.....

..... [4]

[Total: 6]

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