Cambridge Assessment International Education

Cambridge IGCSE™

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER				

6292385290

PHYSICAL EDUCATION **0413/13**

Paper 1 Theory **October/November 2020**

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. Blank pages are indicated.

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1 Name **two** bones at the elbow.

1 .....

2 .....
[2]

2 An untrained performer joins an athletics club to try and get fit to run in a long-distance race.

(a) Suggest **three** short-term effects of exercise on the performer other than an increase in heart rate.

1 .....

.....

2 .....

.....

3 .....

.....
[3]

(b) Name and describe a test a coach might use to assess the performer's stamina.

name of test .....

description .....

.....

.....

.....

.....

.....

.....

.....
[4]

(c) Suggest a method of training that could be used to help improve the performer's stamina. Give **two** justifications for your answer.

method of training .....

justification 1 .....

.....

justification 2 .....

.....

[3]

(d) Describe, using examples, how **four** named principles of overload could be applied to the performer's training.

principle 1 .....

.....

.....

principle 2 .....

.....

.....

principle 3 .....

.....

.....

principle 4 .....

.....

.....

[4]

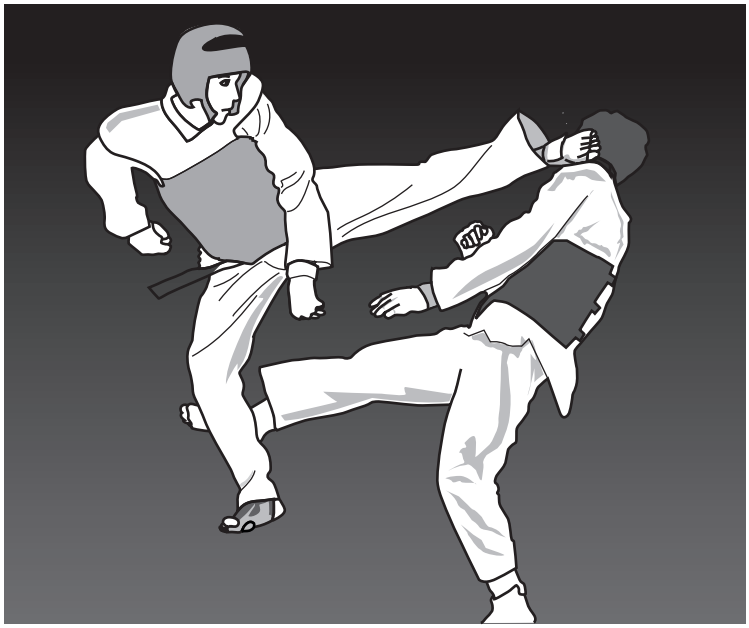
[Total: 14]

3 **(a)** The diagrams show two activities in which performers might choose to use a prohibited performance-enhancing drug (PED).

shot put



taekwondo



Name a different type of PED that a performer in each activity might choose to use in order to gain an advantage when performing. Justify your answers.

type of PED for shot put .....

justification .....

.....

type of PED for taekwondo .....

justification .....

.....

[4]

(b) Suggest **two** types of testing that sports organising bodies may use to reduce the use of PEDs.

1 .....

.....

2 .....

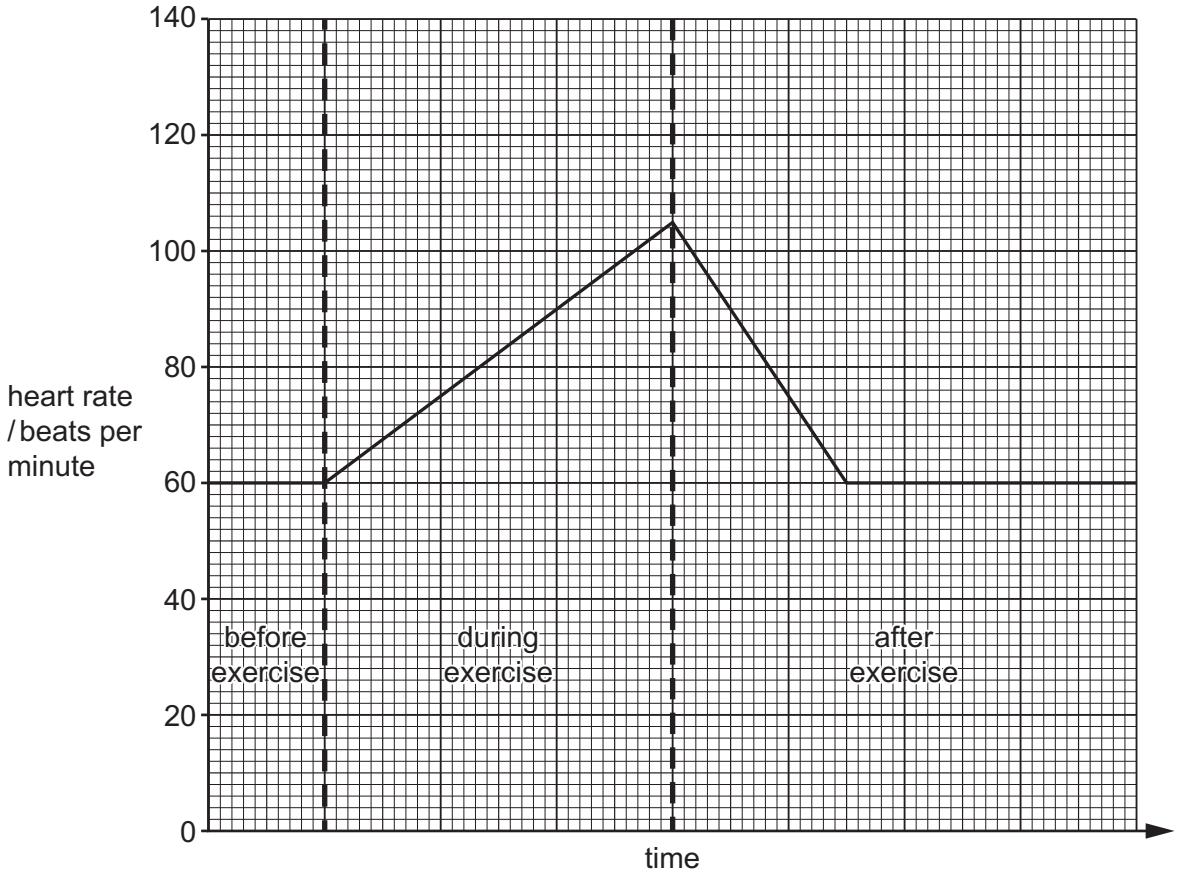
.....

[2]

[Total: 6]

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4 **(a)** The graph shows the simplified heart rate of a fit performer before, during and after a period of exercise.



(i) State the heart rate of the performer before exercise.

..... [1]

(ii) Suggest **two** ways that a line on the same graph for an unfit performer doing this same exercise at the same intensity and for the same time may be different from the line shown for the fit performer.

1 .....

.....

2 .....

.....

[2]

(b) Describe the process of Excess Post-exercise Oxygen Consumption (EPOC).

.....

..... [1]

(c) Describe **four** effects on a performer of completing a cool down after exercise.

1 .....

.....

2 .....

.....

3 .....

.....

4 .....

.....

[4]

[Total: 8]

5 **(a)** Describe, using examples from a named physical activity, **two** characteristics of a performer who is at the cognitive stage of learning.

physical activity .....

characteristic 1 .....

.....

characteristic 2 .....

.....

[2]

(b) Knowledge of results is a type of feedback.

Explain **one** advantage and **one** disadvantage of this type of feedback for a performer at the cognitive stage of learning.

advantage .....

.....

disadvantage .....

.....

[2]

(c) Name **one** type of guidance and describe a benefit of using this type of guidance for a performer at the cognitive stage of learning.

type of guidance .....

benefit .....

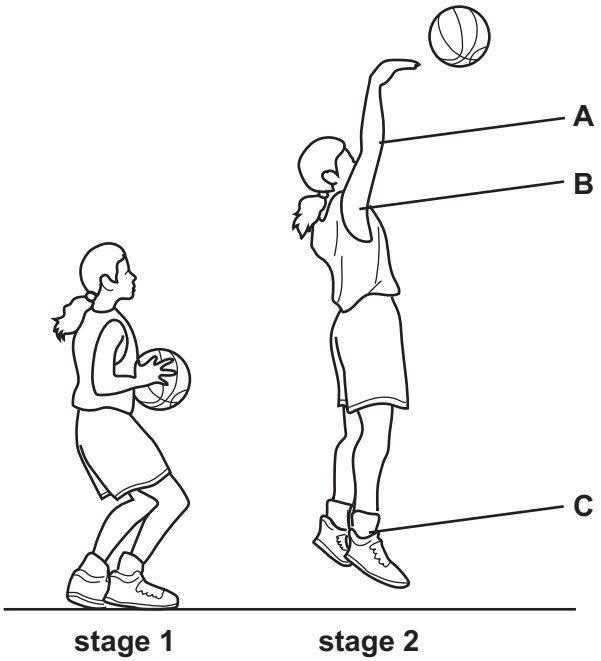
.....

[2]

[Total: 6]

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6 The diagram shows two stages of shooting a basketball with some joints of the performer labelled **A**, **B** and **C**.



(a) (i) Name the type of synovial joint labelled **B**.

..... [1]

(ii) Name the type of movement at the joint labelled **B** from **stage 1** to **stage 2**.

..... [1]

(b) (i) Name the type of movement at the joint labelled **C** from **stage 1** to **stage 2**.

..... [1]

(ii) Name the agonist muscle for this movement.

..... [1]

(c) (i) Name the type of movement at the joint labelled **A** from **stage 1** to **stage 2**.

..... [1]

(ii) Describe the antagonistic muscle action for this movement. Name the muscles involved.

.....

.....

.....

.....

.....

..... [3]

[Total: 8]

7 **(a)** Describe **two** differences between physical recreation and sport.

1 .....

.....

2 .....

.....

[2]

(b) Explain how each of the following may influence what recreational activities people choose to do during their leisure time:

age .....

.....

social circumstances .....

.....

peer influences .....

.....

area where they live. .....

.....

[4]

(c) Explain **four** factors that have influenced the growth in leisure activities.

1 .....

.....

2 .....

.....

3 .....

.....

4 .....

.....

[4]

[Total: 10]

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8 Explain **three** reasons why people may have different energy needs.

1 .....

.....

2 .....

.....

3 .....

.....

[3]

9 **(a)** The photograph shows a cyclist travelling at speed in a road race.



Explain the effect of **three** named forces acting on the cyclist.

force 1 .....

explanation .....

.....

force 2 .....

explanation .....

.....

force 3 .....

explanation .....

.....

[6]

(b) State how force can be calculated.

.....

.....

.....

..... [2]

(c) (i) Draw and label a diagram of a third class lever.

[2]

(ii) Describe an example of a third class lever in the body.

.....

..... [1]

[Total: 11]

10 Describe the advantages that professional performers may have when competing against amateur performers at the Olympic Games.

.....

.....

.....

.....

.....

..... [3]

11 **(a)** Describe the long-term effects of regular exercise on the heart.

.....

.....

.....

.....

.....

..... [3]

(b) Describe **two** structural differences between arteries and veins.

1 .....

.....

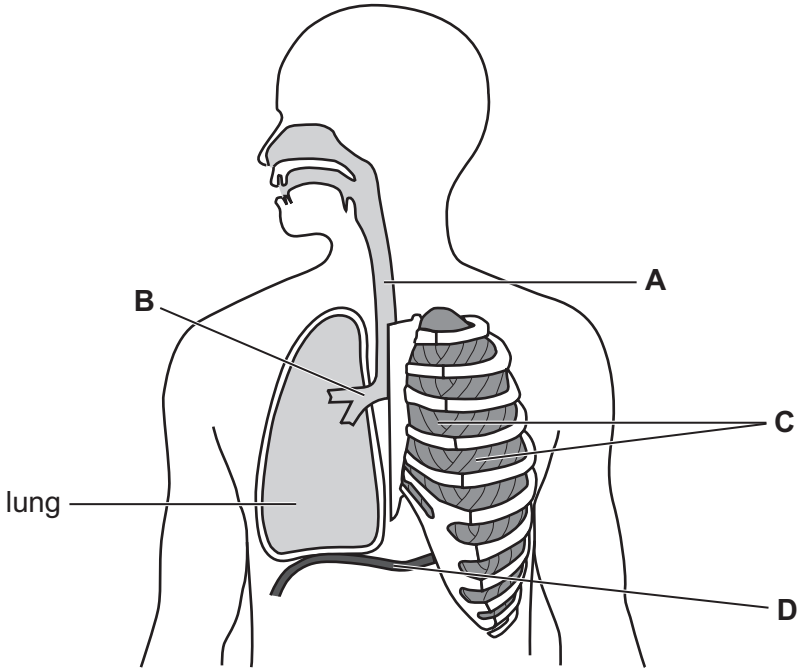
2 .....

.....

[2]

[Total: 5]

12 The diagram shows part of the respiratory system with structures labelled **A**, **B**, **C** and **D**.



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

A .....

B .....

C .....

[3]

(b) Identify structure **D** and explain its role in the mechanics of breathing.

.....

.....

.....

.....

.....

.....

.....

..... [3]

[Total: 6]

13 **(a)** The table shows the percentage of fast-twitch muscle fibres and the percentage of slow-twitch muscle fibres for three different performers.

performer	percentage of fast-twitch muscle fibres	percentage of slow-twitch muscle fibres
A	15	85
B	70	30
C	45	55

Suggest a different physical activity that would be suitable for each performer. Give a reason for each answer.

activity for performer **A** .....

reason .....

.....

activity for performer **B** .....

reason .....

.....

activity for performer **C** .....

reason .....

.....

[3]

(b) Describe **three** characteristics of fast-twitch muscle fibres.

1 .....

.....

2 .....

.....

3 .....

.....

[3]

[Total: 6]

14 (a) Define the term *arousal*.

.....

..... [1]

(b) Explain why optimal arousal varies for **two** different skills in a named physical activity.

physical activity .....

skill 1 .....

.....

explanation .....

.....

skill 2 .....

.....

explanation .....

.....

[4]

(c) Suggest, using examples, **two** negative effects of overarousal on the performance of a games player.

1 .....

.....

2 .....

.....

[2]

[Total: 7]

15 (a) Explain why a performer in an endurance activity is likely to benefit from high-altitude training.

.....

.....

.....

..... [2]

(b) Suggest disadvantages of training at high-altitude for a performer.

.....

.....

.....

.....

.....

..... [3]

[Total: 5]

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