Cambridge IGCSE

Cambridge Assessment International Education
Cambridge International General Certificate of Secondary Education

CANDIDATE NAME

CENTRE NUMBER

CANDIDATE NUMBER

4246209418

PHYSICAL EDUCATION **0413/12**

Paper 1 Theory **May/June 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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1 State **two** bones in the arm.

1 .....

2 .....
[2]

2 **(a)** Define the term *fitness*.

.....

..... [1]

(b) Explain the relationship between health and fitness.

.....

.....

.....

..... [2]

(c) Describe requirements for good mental health and well-being.

.....

.....

.....

.....

.....

..... [3]

[Total: 6]

3 **(a)** State **three** factors that cause variation in skill levels.

1 .....

.....

2 .....

.....

3 .....

.....
[3]

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

physical activity .....

1 .....

.....

2 .....

.....

3 .....

.....

[3]

(c) Describe the advantages that sponsorship can provide for a performer.

.....

.....

.....

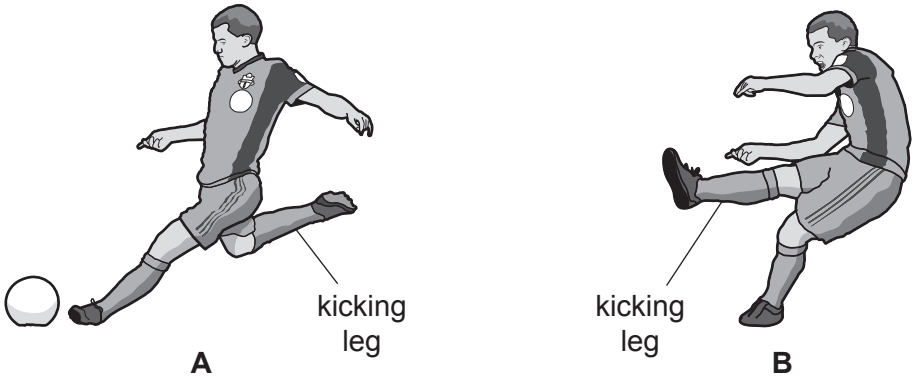
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..... [3]

[Total: 9]

4 The diagrams, **A** and **B**, show a footballer kicking a ball.



Name the type of movement taking place at the knee joint of the kicking leg between diagram **A** and diagram **B**. Name the agonist that causes the movement.

type of movement .....

agonist .....

[2]

5 **(a)** The photograph shows elite cyclists during a professional road race such as the Tour de France.



This involves cycling on several days over long distances on both flat and mountainous roads. This requires high levels of cardiovascular endurance.

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(i) Name **three** components of fitness, other than cardiovascular endurance, required by the cyclists in the photograph and explain how each component benefits performance at an elite level.

component 1 .....

.....

.....

component 2 .....

.....

.....

component 3 .....

.....

.....

[6]

(ii) Name and describe a fitness test for cardiovascular endurance.

name of test .....

description .....

.....

.....

.....

.....

.....

[3]

(b) Suggest **two** reasons why a coach would regularly test the fitness of an elite performer.

1 .....

.....

2 .....

.....

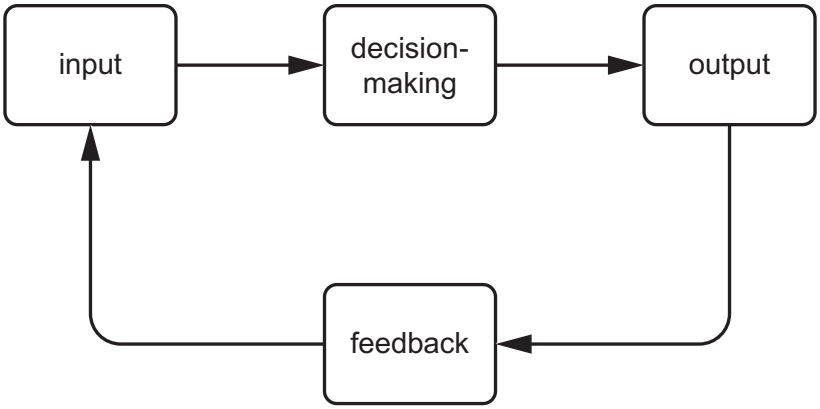
[2]

[Total: 11]

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[Turn over

6 The diagram shows the stages of a basic information processing model.



(a) Explain, using an example of a skill in a physical activity, the role of each stage in the model.

example of skill .....

.....

input .....

.....

.....

decision-making .....

.....

.....

output .....

.....

.....

feedback .....

.....

.....

[4]

(b) Explain the concept of limited channel capacity.

.....

.....

.....

..... [2]

[Total: 6]

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7 **(a)** **(i)** Draw a simple diagram of a third class lever.
Identify the position of the fulcrum, resistance and effort.

[2]

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

.....

..... [1]

(b) State what is meant by each of the following terms:

force .....

.....

mass .....

.....

acceleration. .....

.....
[3]

[Total: 6]

8 **(a)** Define the term *arousal*.

.....

..... [1]

(b) Draw a diagram of the Inverted-U theory of arousal.
On your diagram, label both axes and the optimal level of arousal.

[4]

(c) Explain, using examples, how the optimal level of arousal varies for different skills.

.....

.....

.....

.....

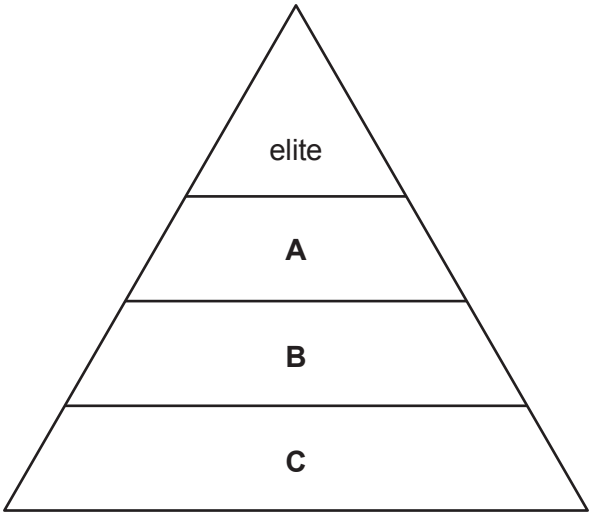
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..... [3]

[Total: 8]

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9 The diagram shows a sports development pyramid.



Name the **three** levels in the sports development pyramid labelled **A**, **B** and **C**.

A .....

B .....

C .....

[3]

10 The photograph shows an athlete in a jumping event.



(a) (i) Name the main muscle fibre type used by the athlete when jumping.

..... [1]

(ii) Suggest **two** benefits for the athlete's performance of this muscle fibre type.

1 .....

.....

2 .....

.....

[2]

(b) Explain how **two** named forces act on the athlete during the jumping event.

force 1 .....

explanation .....

.....

.....

force 2 .....

explanation .....

.....

.....

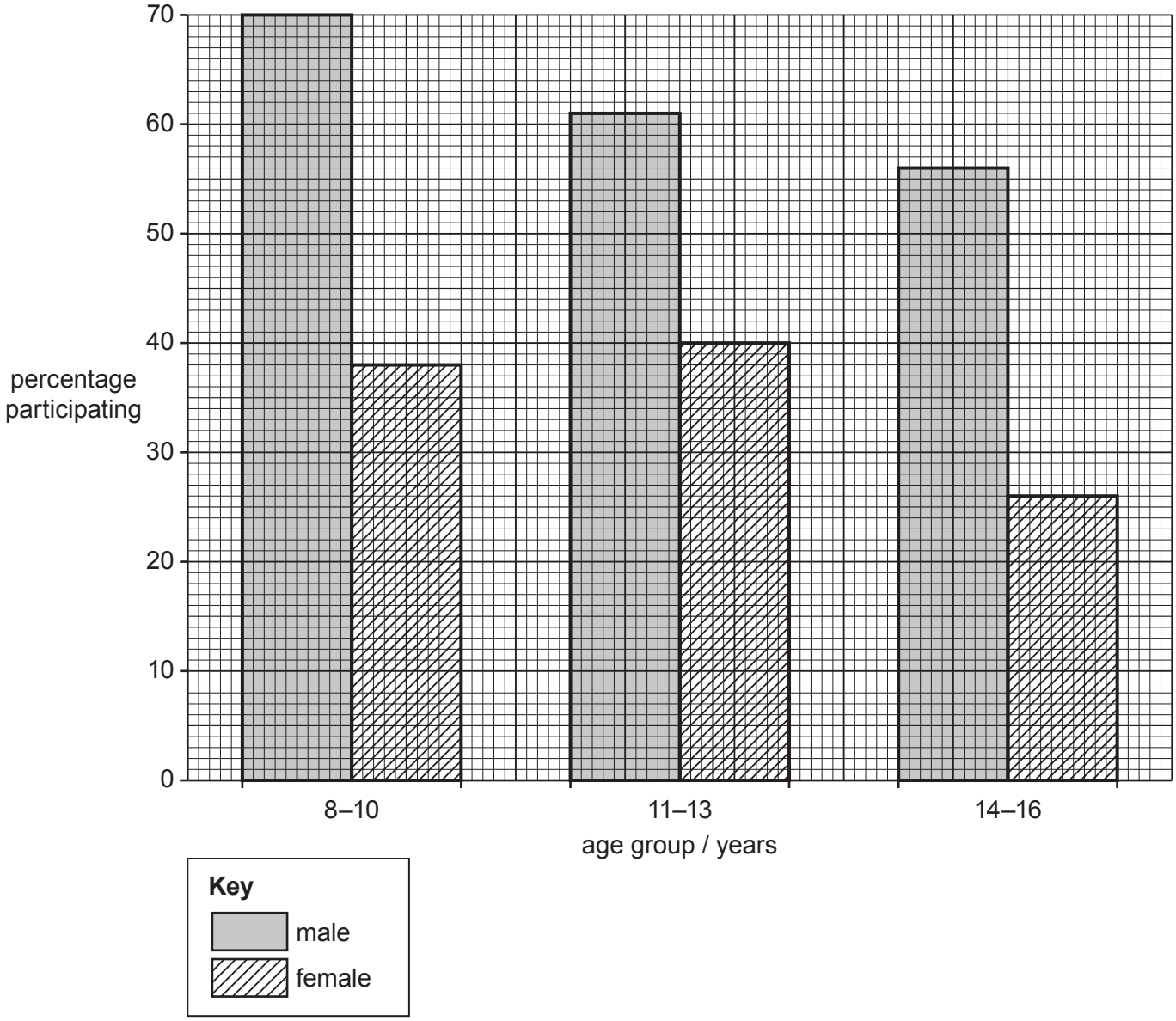
[4]

[Total: 7]

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11 The bar chart shows the percentage of young people in a region participating in regular physical activity outside of school each week by age and by gender.



(a) Identify, using the bar chart, the age group that has the highest percentage of males participating in regular physical activity.

..... [1]

(b) Suggest reasons why there is a low percentage of participation for 14 to 16 year-old females.

.....

.....

.....

.....

.....

.....

.....

..... [4]

[Total: 5]

12 (a) (i) A performer attends a short general fitness class each week.

Describe how **two** named principles of overload can be applied to improve the fitness of the performer.

principle 1 .....

.....

.....

principle 2 .....

.....

.....

[2]

(ii) Suggest **two** short-term effects of exercise on the performer.

1 .....

.....

2 .....

.....

[2]

(b) Explain how **three** factors affect a performer's recovery time after exercise.

1 .....

.....

.....

2 .....

.....

.....

3 .....

.....

.....

[3]

[Total: 7]

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13 (a) Explain why some performance-enhancing drugs are prohibited.

.....

.....

.....

.....

.....

..... [3]

(b) Suggest, using examples of different physical activities, an effect on performance of each of the following types of prohibited performance-enhancing drugs.

anabolic steroids

physical activity .....

effect on performance .....

.....

beta blockers

physical activity .....

effect on performance .....

.....

stimulants

physical activity .....

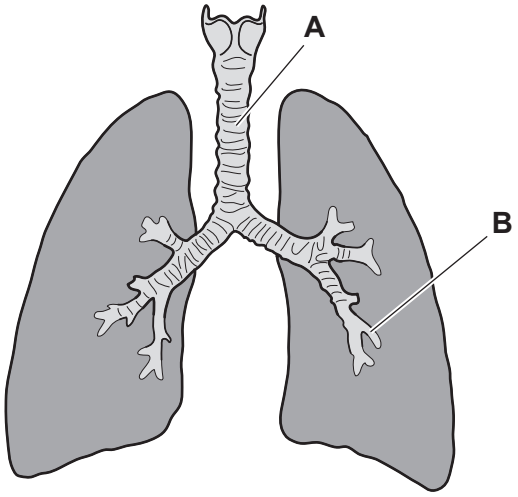
effect on performance .....

.....

[6]

[Total: 9]

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



(a) Identify the components labelled **A** and **B**.

A .....

B .....

[2]

(b) State and explain **two** characteristics of alveoli that assist gaseous exchange.

characteristic 1 .....

explanation .....

.....

characteristic 2 .....

explanation .....

.....

[4]

(c) Describe each of the following breathing volumes and state the change, if any, in each volume during exercise.

minute ventilation .....

.....

.....

change during exercise .....

vital capacity .....

.....

.....

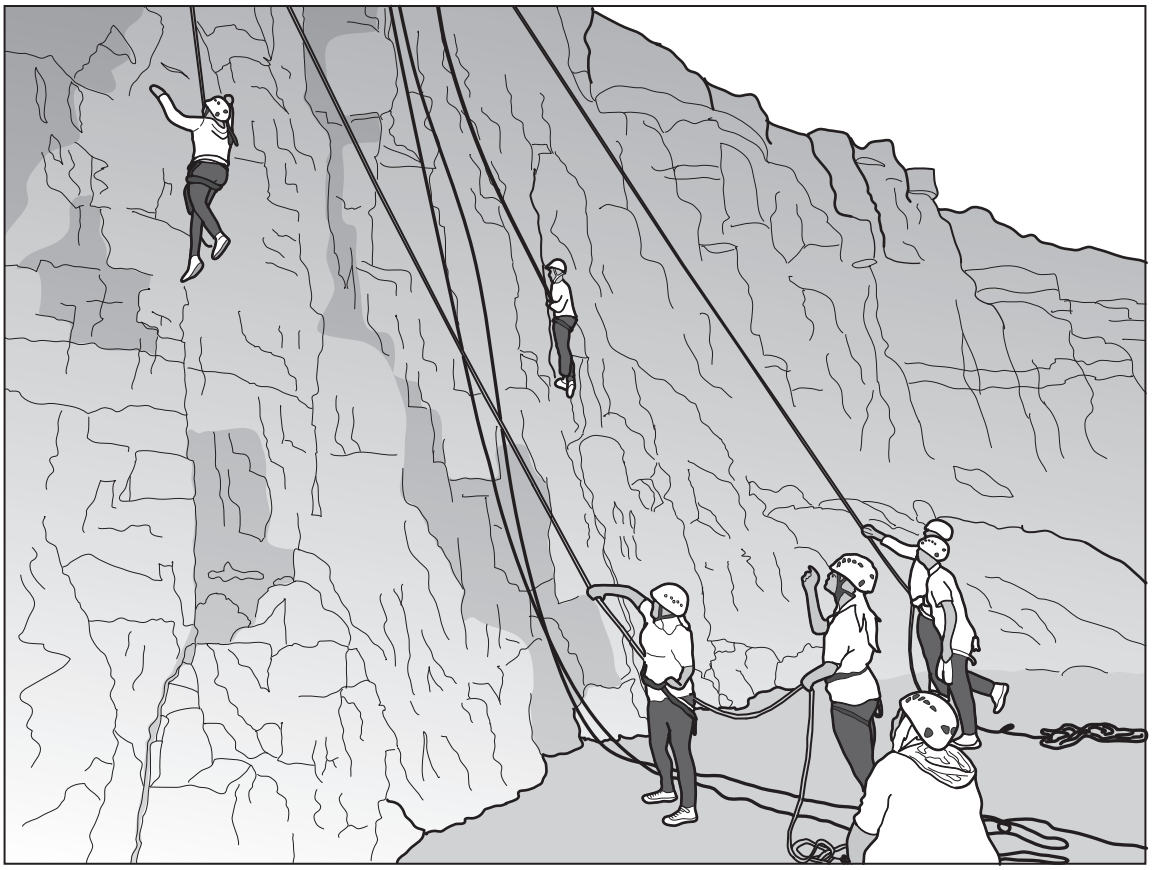
change during exercise .....

[4]

[Total: 10]

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15 (a) The diagram shows a group rock climbing. Rock climbing contains an element of risk.



(i) Explain the difference between real risk and perceived risk.

.....

..... [1]

(ii) State **one** real risk and **one** perceived risk when rock climbing and describe a strategy to reduce each risk.

real risk .....

.....

strategy .....

.....

perceived risk .....

.....

strategy .....

.....

[4]

(b) State **two** typical minor injuries that could occur during different named physical activities and describe a different treatment for each injury.

physical activity .....

injury 1 .....

treatment .....

.....

physical activity .....

injury 2 .....

treatment .....

.....

[4]

[Total: 9]

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