



Centre Number

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Candidate Number

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General Certificate of Secondary Education  
2017

## Physical Education

ML

[G9741]

**FRIDAY 19 MAY, AFTERNOON**

### TIME

1 hour 30 minutes, plus your additional time allowance.

### INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.

**You must answer the questions in the spaces provided.**

**Do not write outside the boxed area on each page or on blank pages.**

Complete in black ink only.

Answer **all** questions.

### INFORMATION FOR CANDIDATES

The total mark for this paper is 100.

Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.

Quality of written communication will be assessed in Questions **18, 21 and 22**.

1 Read the words below.

accurately      quickly      forcefully      effectively  
precisely      efficiently      powerfully      carefully

Now, choose **two** of the words that best complete the definition of physical fitness.

Physical fitness is the ability to perform physical tasks

\_\_\_\_\_ and \_\_\_\_\_

[2]

2 Write down **two** important things that a person can do to help maintain physical well-being.

1. \_\_\_\_\_ [1]

2. \_\_\_\_\_ [1]

3 (a) Write down the name of a sport or physical activity that may interest an **extrovert**. Explain your choice.

Sport/physical activity \_\_\_\_\_ [1]

Explanation \_\_\_\_\_

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[2]

(b) Write down the name of a sport or physical activity that may interest an **introvert**. Explain your choice.

Sport/physical activity \_\_\_\_\_ [1]

Explanation \_\_\_\_\_

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[2]

**[Turn over**

4 Without having sponsorship, explain why having plenty of money can help people to **take part** in and **stay involved** in certain sports or physical activities.

Name of sport/physical activity \_\_\_\_\_

Explanation \_\_\_\_\_

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[1]

1

5 (a) A person needs to eat food to stay alive. Write down **one** other reason for a person needing to eat food.

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[1]

1

(b) Foods may contain the components carbohydrates, vitamins and water. Name **three** other components that foods may contain.

1. \_\_\_\_\_ [1]

1

<sup>2.</sup> [1]

1

3. [1]

1

6 Write down **two** effects that the tar in tobacco smoke can have on the respiratory system.

1. \_\_\_\_\_

\_\_\_\_\_

[1]

2. \_\_\_\_\_

\_\_\_\_\_

[1]

7 A person's performance in a badminton match would not be as good if they did not have enough sleep. Write down **two** aspects of their performance that could be affected.

1. \_\_\_\_\_ [1]

2. \_\_\_\_\_ [1]

[Turn over

8 Name **one** organ of the human body that is damaged by drinking too much alcohol over a long period of time.

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[1]

9 There is a relationship between a person's metabolism, exercising and weight control. Explain how exercise affects a person's metabolism and how metabolism then affects weight control.

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[3]

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**(Questions continue overleaf)**

**[Turn over**

10448.04 ML

10 (a) Aerobic energy production, anaerobic energy production, flexibility, and muscular endurance are components of physical fitness. Name **two** other components of physical fitness.

1. \_\_\_\_\_ [1]

2. \_\_\_\_\_ [1]

**(b)** Think about the 800 m track race in athletics.

(i) Write about the physical demands on an elite athlete during the 800 m race.

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1

(ii) Explain when the **aerobic** and **anaerobic** energy systems would be used by an elite athlete during the 800 m race.

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1

(iii) Explain the importance of **flexibility** for an elite athlete during the 800 m race.

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[1]

(iv) Explain the relative importance of **muscular endurance** for an elite athlete during the 800 m race.

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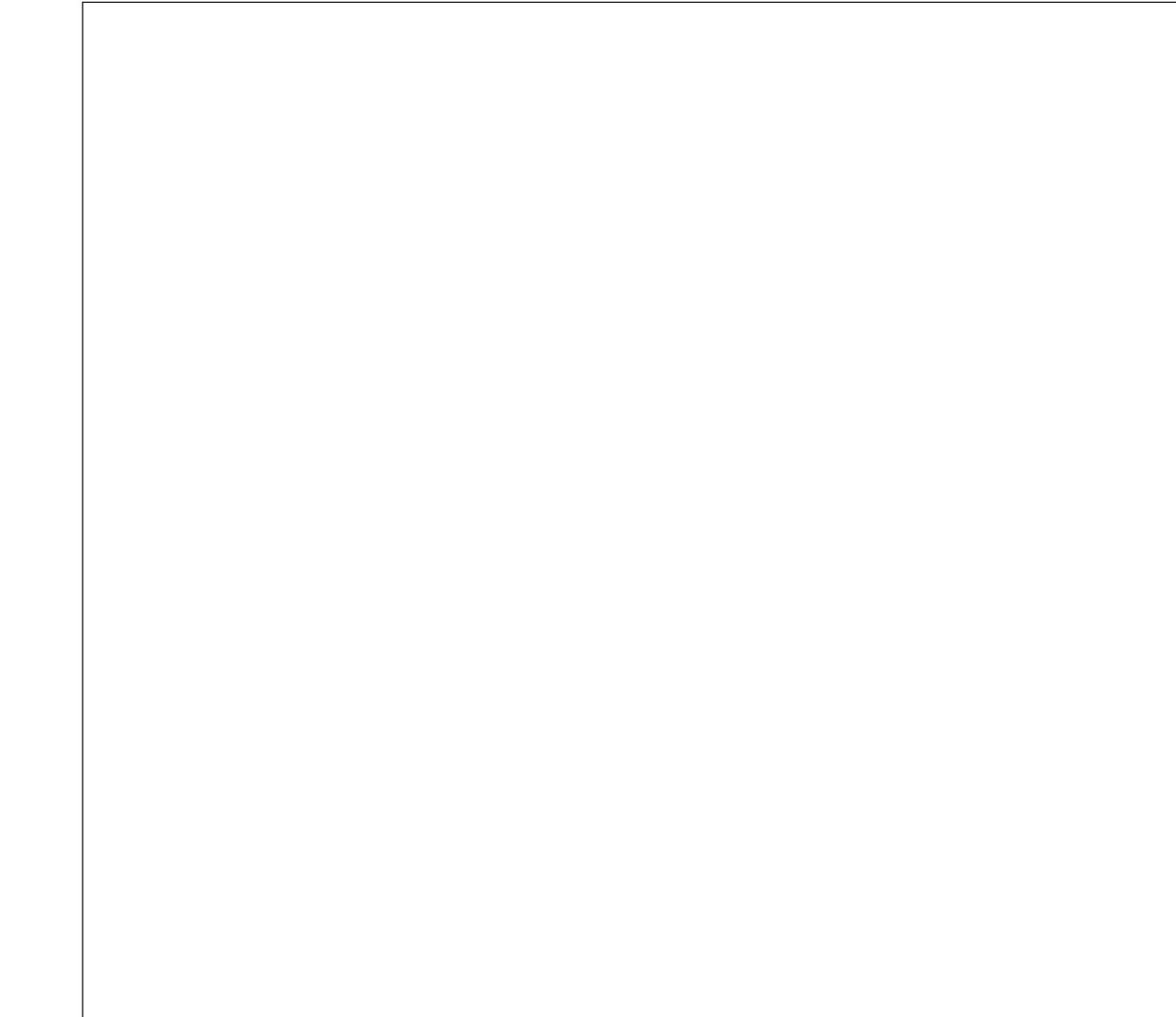
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[1]

11 (a) Draw diagrams and write instructions about how a person should perform an **isotonic exercise** (with or without using equipment) that would work the biceps (front of the upper arms). [2]



(b) Draw diagrams and write instructions about how a person should perform an **isometric exercise** (with or without using equipment) that would work the biceps (front of the upper arms). [2]



[Turn over

10448.04 ML

12 A person is unfit and wants to start an exercise programme. Choose a suitable intensity and work time for a continuous steady pace exercise for that person. Explain, using examples, how the intensity (% MHR) and work time (duration) would change over the exercise programme.

Intensity (% MHR) at start of exercise programme: \_\_\_\_\_ [1]

Work time (duration) at start of exercise programme: \_\_\_\_\_ [1]

Explanation of changes over the exercise programme: \_\_\_\_\_

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[2]

13 (a) Write down **one similarity** between performing **fartlek** training and **interval** training.

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[1]

(b) Write down **one difference** between performing **fartlek** training and **interval** training.

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[1]

14 Explain the **differences** in the **work times** for intervals when interval training is being used to develop **anaerobic** fitness as opposed to **aerobic** fitness.

[2]

15 Write down **two** tasks or jobs that may be done at home and would count as exercise.

1. \_\_\_\_\_ [1]

2. \_\_\_\_\_ [1]

044

Turn over

16 The 'FITT' principle is used to develop physical fitness. Write down what each of the letters stands for and explain what is meant by each of these words.

'F' stands for \_\_\_\_\_ [1]

This means \_\_\_\_\_  
\_\_\_\_\_ [1]

'I' stands for \_\_\_\_\_ [1]

This means \_\_\_\_\_  
\_\_\_\_\_ [1]

'T' stands for \_\_\_\_\_ [1]

This means \_\_\_\_\_  
\_\_\_\_\_ [1]

'T' stands for \_\_\_\_\_ [1]

This means \_\_\_\_\_  
\_\_\_\_\_ [1]

17 What is a person's pulse? How does a person know from the **resting pulse** whether their **aerobic** training programme is effective?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ [2]

18 Assessing and monitoring a person's level of physical fitness before, during and after their training programme can be beneficial for the person. Explain **three** different benefits.

Benefit 1 \_\_\_\_\_

[2]

**Benefit 2** \_\_\_\_\_

[2]

### Benefit 3

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[2]

1044

[Turn over]

19 (a) Explain the role or function of the respiratory system.

1

(b) The intercostal muscles and the diaphragm become more efficient and effective with regular and appropriate aerobic exercise.

Explain how this helps to improve aerobic performances.

This helps to improve aerobic performances because \_\_\_\_\_

1

(c) The surface area for gaseous exchange is increased with regular and appropriate aerobic exercise.

Explain how this happens.

This happens because \_\_\_\_\_

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[1]

1

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**[Turn over**

10448.04 ML

**20** Some sports or physical activities can have a **high-risk** of injury.

- Name **three different** sports or physical activities that can have a **high-risk** of injury.
- Then, for each sport that you have chosen write about a high-risk situation and the possible outcome from that situation.
- Finally, explain what action should be taken to minimise the risk in each **high-risk** situation.

Sport or physical activity 1: \_\_\_\_\_

High-risk situation and the possible outcome from it \_\_\_\_\_

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[1]

Action to minimise the identified risk for sport or physical activity 1: \_\_\_\_\_

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[1]

Sport or physical activity 2: \_\_\_\_\_

High-risk situation and the possible outcome from it \_\_\_\_\_

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[1]

Action to minimise the identified risk for sport or physical activity 2: \_\_\_\_\_

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[1]

Sport or physical activity 3: \_\_\_\_\_

High-risk situation and the possible outcome from it \_\_\_\_\_

[1]

Action to minimise the identified risk for sport or physical activity 3: \_\_\_\_\_

[1]

Turn over

**21** Four aerobic fitness workouts for a 20 year old male, who is physically fit from training regularly, are shown below in (a), (b), (c) and (d).

- Analyse each workout and write about any changes that you think need to be made.
- Then, write about how your changes will make each of the workouts appropriate and effective for developing aerobic fitness.

(a) Swim 10 repetitions of 100 m with each repetition swum in 20 seconds and a rest of 2 minutes between each repetition, i.e.  $100\text{ m} \times 20\text{ sec} \times 10\text{ reps} \times 2\text{ min}$  recovery between reps.

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[3]

(b) Steady run at 95% of MHR for 90 minutes.

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[3]

(c) Swim 5 repetitions of 1 minute with the heart rate at 160 for each repetition. 30 seconds rest between each repetition.

(d) Cycle 15 miles in 30 minutes

[Turn over]

10448

**22** Four principles of training are shown below in (a), (b), (c) and (d).

Explain how each principle should be **applied** to make an appropriate and effective training programme for a competitive athlete or sports person.

### (a) Principle of Specificity

1

### (b) Principle of Variety

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1

**(c) Principle of Progressive Overlo...**

[3]

**(d) Principle of Peak**

[4]

THIS IS THE END OF THE QUESTION PAPER

**For Examiner's  
use only**

Question Number	Marks
1	
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**Total  
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**Examiner Number**

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