



General Certificate of Secondary Education  
2016

Centre Number

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Candidate Number

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# Physical Education

Paper 1

[G9741]

MV18

FRIDAY 20 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.**  
Complete in blue or black ink only. **Do not write with a gel pen.**  
Answer **all** questions.

## INFORMATION FOR CANDIDATES

The total mark for this paper is **100**.

Figures in brackets printed at the end of each question indicate the marks awarded to each question or part question.

Quality of written communication will be assessed in questions **18, 20 and 22(b)**.

1 In its definition of health, the World Health Organisation (WHO) includes three different areas of health. Social health is one area. Name the other two areas.  
[1 mark for each area]

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

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

2 What word is used to describe the ability of a player to economically coordinate and control a shot in badminton?  
[1 mark]

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3 Describe a health and safety risk associated with playing a sport of your choice and explain a step that can be taken to reduce this risk. [2 marks]

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4 Give **three** examples to show how pupils' experiences at school may **positively** affect their participation in physical activity or sport. [1 mark for each example]

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

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3. \_\_\_\_\_

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5 Give **three** examples to show how a person's **occupation/job** may affect their participation in **competitive** team sports. [1 mark for each example]

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

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

\_\_\_\_\_

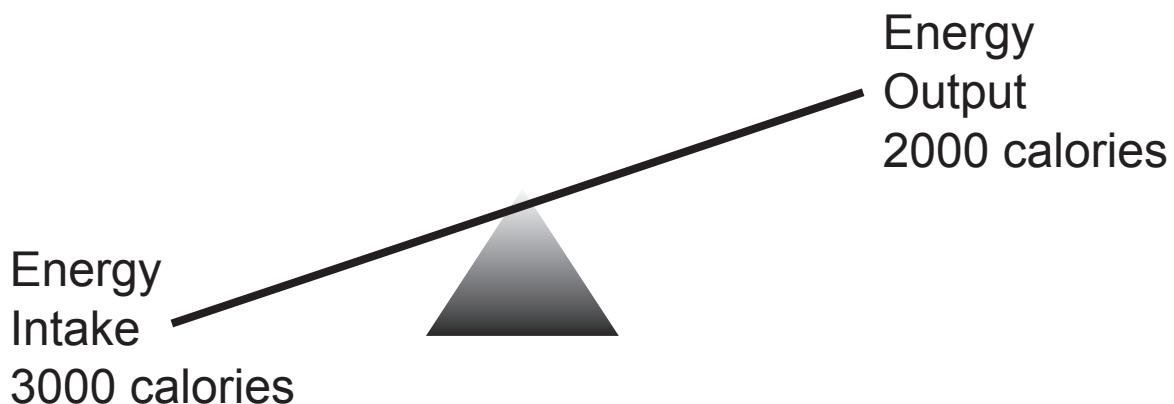
\_\_\_\_\_

3. \_\_\_\_\_

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6 (a) Study **Fig. 1** below and answer the question that follows.



**Fig. 1**

Explain what **Fig. 1** shows and what the outcome will be if it is followed. [2 marks]

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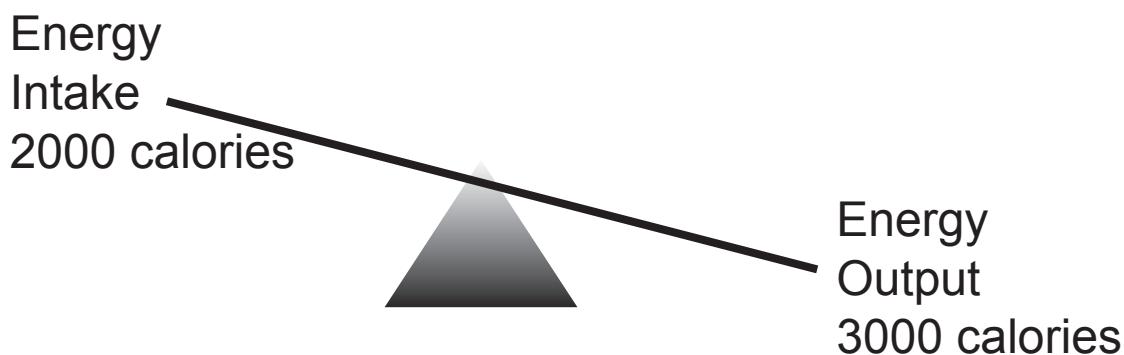
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(b) Study **Fig. 2** below and answer the question that follows.



**Fig. 2**

Explain what **Fig. 2** shows and what the outcome will be if it is followed. [2 marks]

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7 (a) Explain what **anaerobic fitness** is. [1 mark]

Anaerobic fitness is about being able to

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(b) What determines a person's **anaerobic energy production**? [3 marks]

Anaerobic energy production is determined by the ability of

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8 (a) What determines a person's **muscular endurance**?  
[2 marks]

Muscular endurance is determined by the ability of

**(b) What determines a person's flexibility?**  
[2 marks]

Flexibility is determined by the ability of

9 (a) Explain in detail what is involved in doing an aerobic workout using **continuous steady pace** training (CSP). [2 marks]

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(b) Running is a type of exercise. Name **two** other types of exercise that can use **continuous steady pace training** as a method of training. [1 mark each]

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

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

10 Explain the **difference** between an **isotonic** and an **isometric** exercise. [2 marks]

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11 In the ‘FITT’ principle the ‘I’ stands for intensity. Explain what “**intensity**” is and give an appropriate example.  
[2 marks]

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12 For a weight training exercise, give **two** different ways by which you can overload. [1 mark for each way]

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

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

13 Explain, using one example, how the principle of **variety** can be applied to develop **aerobic** fitness in a health-related exercise programme. [2 marks]

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14 Explain in depth how the principle of **reversibility** affects a person who has become physically fit by doing fitness training and who then stops doing the fitness training. [2 marks]

**15** When a person starts doing strenuous exercise, what is the **immediate** response of the **respiratory** system?  
[2 marks]

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**16** When a person starts doing strenuous exercise, what is the **immediate** response of the **heart**? [2 marks]

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**17** When a person starts strenuous exercise, what is the **immediate** response of the **digestive** system?  
[2 marks]

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**18** “Endurance athletes should not smoke tobacco.”

Present and explain **three** sound arguments that support this statement. [2 marks for each argument]

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

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

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3. \_\_\_\_\_

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**19 (a)** Explain the relative importance of **muscular power** for performing the **high jump**. [2 marks]

**(b)** Explain the relative importance of **aerobic fitness** for performing the **high jump**. [2 marks]

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20 To be able to fairly compare fitness test results over a period of time, fitness testing must be **valid and reliable**.

Explain **four** principles that should be applied to fitness testing in order to achieve this.

[2 marks for each principle]

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

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

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3. \_\_\_\_\_

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4. \_\_\_\_\_

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**21 (a)** Explain in detail how you should perform a **passive static flexibility exercise** to stretch the **hamstring** muscles (back of upper leg). [2 marks]

**(b)** Use a stick diagram to show your exercise being performed. [2 marks]

(c) Explain in detail how you should perform an **active static flexibility exercise** to stretch the **quadriceps** muscles (front of upper leg). [2 marks]

(d) Use a stick diagram to show your exercise being performed. [2 marks]

**22 (a)** Swimming or running may be included in an aerobic exercise programme.

Explain **two advantages** of having **swimming** as the **aerobic** activity as opposed to having **running**.

[2 marks for each advantage]

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

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\_\_\_\_\_

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

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**(b)** Walking and swimming may be included in an aerobic exercise programme.

Explain **two advantages** of having **walking** as the **aerobic** activity as opposed to having **swimming**.

[2 marks for each advantage]

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

\_\_\_\_\_

\_\_\_\_\_

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

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23 (a) Use the tables below to show how **interval training** should be used to develop **anaerobic** fitness and **aerobic** fitness.

Give specific information for the intensities, times and numbers of repetitions to clearly show the differences in the use of interval training to develop anaerobic fitness as compared to aerobic fitness. [6 marks]

Interval training workout to develop <b>anaerobic fitness</b>	Interval training workout to develop <b>aerobic fitness</b>
Intensity (% MHR):	Intensity (% MHR):
Time (seconds):	Time (seconds):
Number of repetitions:	Number of repetitions:

**(b)** Explain the **differences** between the choices you made for the **anaerobic** and **aerobic** interval training workouts. [3 marks for each difference]

(i) Intensities \_\_\_\_\_

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(ii) Times \_\_\_\_\_

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(iii) Number of repetitions \_\_\_\_\_

24 (a) Study the information below that is taken from a weight training programme to develop **muscular endurance**.

Weeks	Repetition Maximum (RM)	Weight in kilograms
Weeks 1–3	5 RM	10 kg
Weeks 4–6	10 RM	15 kg
Weeks 7–9	15 RM	20 kg

(i) Comment on the appropriateness of the given **weights** (10 kg; 15 kg and 20 kg) for the **Repetition Maximums** (RMs) given. [2 marks]

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(ii) Comment on the appropriateness of the **Repetition Maximums** (RMs) (5RM; 10RM and 15RM) to develop **muscular endurance** over the 9 weeks. [2 marks]

(b) Study the information below that is taken from a weight training programme to develop **muscular endurance**.

Weeks	Repetition Maximum (RM)	Number of repetitions
Weeks 1–3	25 RM	15
Weeks 4–6	20 RM	20
Weeks 7–9	15 RM	25

(i) Comment on the appropriateness of the **number of repetitions** (15; 20 and 25) for the **Repetition Maximums** (RMs) given. [2 marks]

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(ii) Comment on the appropriateness of the **Repetition Maximums** (RMs) (25 RM; 20 RM and 15 RM) to develop **muscular endurance** over the 9 weeks. [2 marks]

**THIS IS THE END OF THE QUESTION PAPER**







**DO NOT WRITE ON THIS PAGE**

<b>For Examiner's use only</b>	
<b>Question Number</b>	<b>Marks</b>
1	
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<b>Total Marks</b>	
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**Examiner Number**

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