



General Certificate of Secondary Education  
2018

Centre Number

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Candidate Number

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# Physical Education

Paper 1

**MV18**

**[G9741]**

**FRIDAY 18 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 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 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 **9, 19 and 21(b)**.

1 (a) To be completely healthy people should maintain their physical, social and mental well-being.

Name **two** activities a person could do to develop good mental health. [1 mark for each]

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

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

(b) Name **one** condition people could develop if they neglect their mental health. [1 mark]

\_\_\_\_\_

2 Use **two** of the terms below to help you complete the statements that follow. [1 mark for each]

**physically unhealthy**

**physically healthy**

**physically fit**

**peak physical fitness**

1. \_\_\_\_\_ means exercising to keep the body in reasonable working order.

2. \_\_\_\_\_ means training the body to be in the best possible shape.

3 (a) Motivation can impact on a person's participation in physical activities and sport. What is motivation?  
[1 mark]

Motivation is \_\_\_\_\_

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(b) Extrinsic motivation could be used to encourage a young person to follow an active, healthy lifestyle. Give **three** examples of **extrinsic** motivation.  
[1 mark for each]

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

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

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

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4 Use **Table 1** below to identify differences between public and private sector sport facilities. [6 marks]

**Table 1**

	<b>Public Sector</b>	<b>Private Sector</b>
<b>Owned by:</b>		
<b>Funded by:</b>		
<b>Purpose:</b>		

5 A healthy, balanced diet should include the following components:

**vitamins**

**proteins**

**fats**

**carbohydrates**

**minerals**

**water**

**dietary fibre**

Select the component which should form **10–15%** of a balanced diet. [1 mark]

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6 Fats are an important component of a healthy balanced diet as they provide a secondary source for energy production.

State **one** other function of fats in a diet. [1 mark]

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7 (a) Which of the following components of diet might a marathon runner adjust to improve performance leading up to the event? [1 mark]

## **vitamins**

## proteins

fats

# carbohydrates

## minerals

## dietary fibre

The component of diet is \_\_\_\_\_

**(b)** Explain the changes to diet the athlete would make in the week leading up to the marathon. [3 marks]

8 Drinking alcohol before performing in a physical activity can negatively affect a sport performer's coordination.

State **two** other effects that alcohol could have on performance. [1 mark for each]

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

\_\_\_\_\_

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

\_\_\_\_\_

9 An individual may take part in non-competitive physical activities as part of leisure time. Other than an improvement to physical fitness, state and explain **three** further benefits of taking part in a non-competitive physical activity.  
[2 marks for each]

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

\_\_\_\_\_

\_\_\_\_\_

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

\_\_\_\_\_

\_\_\_\_\_

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

\_\_\_\_\_

\_\_\_\_\_

**10 (a)** Explain what **muscular speed** enables a person's muscles to do. [1 mark]

Muscular speed enables a person's muscles to

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**(b)** Age is a factor which may determine a person's **muscular speed**. State **two** other physical factors. [1 mark for each]

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

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

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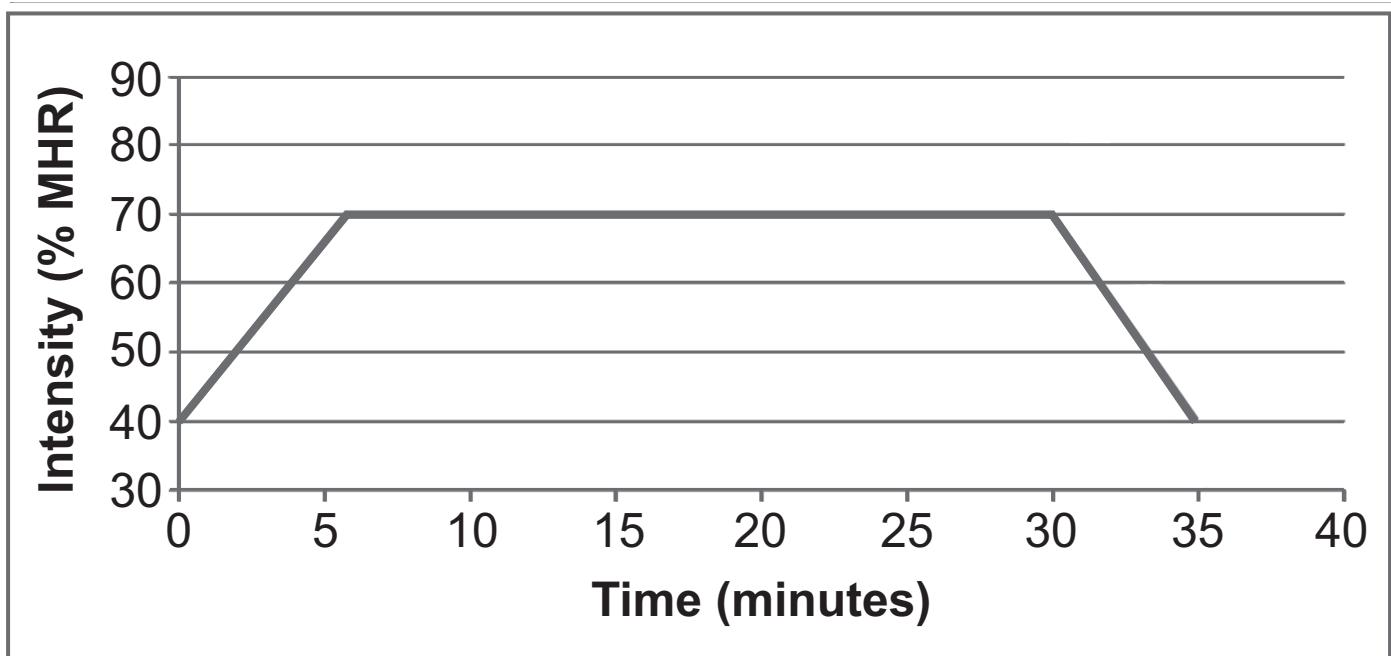
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**11** Is **aerobic** or **anaerobic** energy production more **important** for inclusion in a **health-related** exercise programme?  
[1 mark]

(a) I would choose \_\_\_\_\_ energy production as being more important for a health-related exercise programme.

**(b)** Explain your choice. [2 marks]

12 Study **Fig. 1** which shows the performance of an athlete and then answer the questions that follow.



**Fig. 1**

(a) Name the **training method** being used by the athlete in the session. [1 mark]

The training method is \_\_\_\_\_

**(b) Use specific evidence from Fig. 1 to justify your choice.**  
**[3 marks]**

(c) If the training method cannot be changed, explain **one** way the principle of **variety** could be applied to the athlete's training to maintain interest. [2 marks]

13 Study the training session in **Table 2** below and then answer the questions that follow.

**Table 2**

Distance	100 m
Time	14 seconds
Repetitions	4
Recovery between	56 seconds

(a) Name the **training method** being used by the athlete in the session. [1 mark]

The training method is \_\_\_\_\_

(b) The component of physical fitness which this training session is most likely to improve is **anaerobic fitness**. [2 marks]

Use **specific** evidence from **Table 2** to justify this.

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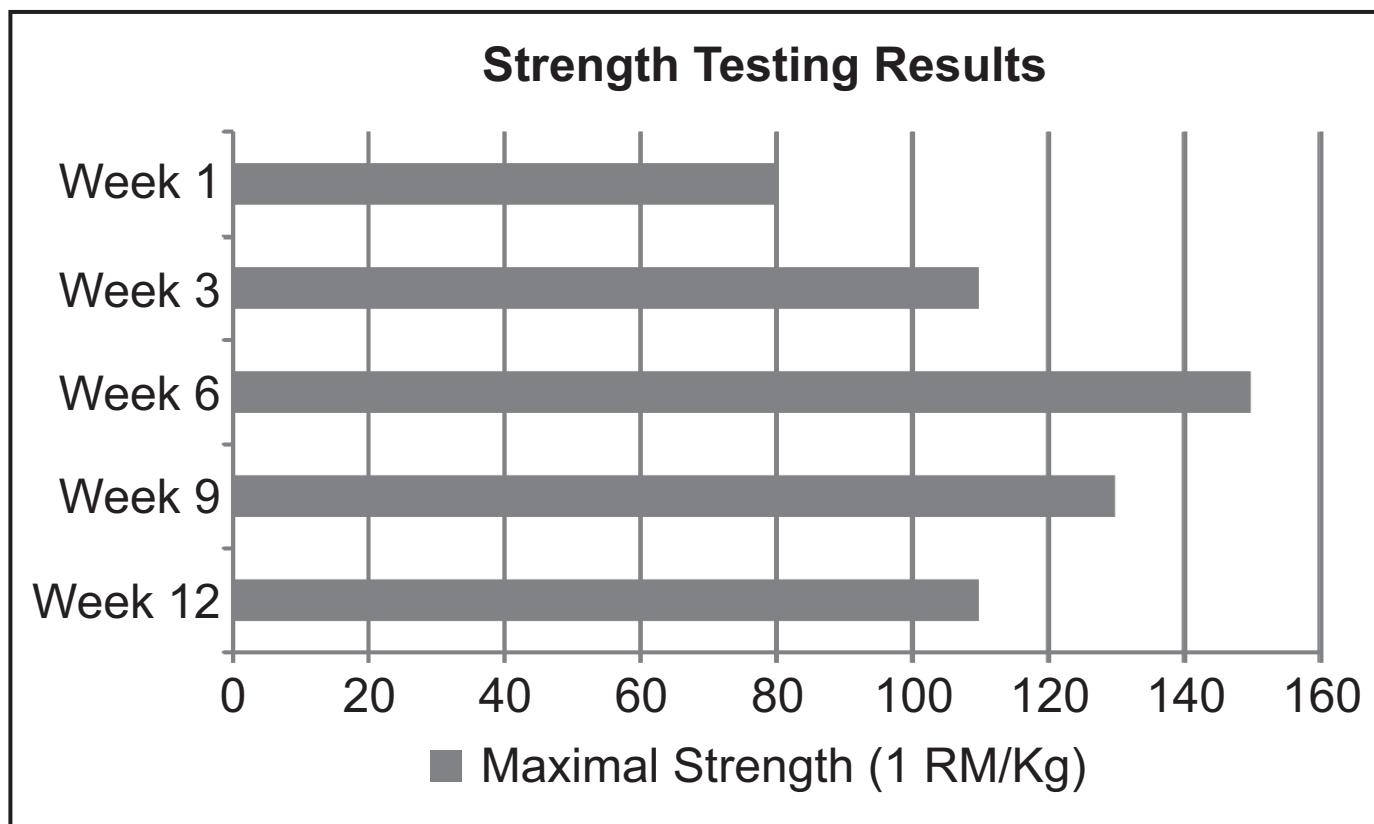
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(c) Using the same training method complete **Table 3** below by planning the **time**, **repetitions** and **recovery** for a training session to develop **aerobic** fitness. [3 marks]

**Table 3**

Distance	400 m
Time	
Repetitions	
Recovery between	

14 Study **Fig. 2** which shows the performance of an athlete and then answer the questions that follow.



**Fig. 2**

**(a)** Which principle of training has the athlete displayed from **weeks 6–12?** [1 mark]

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**(b)** Use **specific** evidence from **Fig. 2** to justify your choice. [2 marks]

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**15** Read the statements below and select the **one** which best demonstrates the training principle of **specificity**.  
[1 mark]

- A. Lifting heavy weights to increase aerobic performance
- B. Doing press-ups to reduce waistline size
- C. Power walking to improve arm strength
- D. Doing sit-ups to increase abdominal strength

\_\_\_\_\_ best demonstrates the principle of specificity.

**16** State two benefits of **planning recovery periods** and **rest days** into a training programme to improve performance.  
[1 mark for each]

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

17 As part of an exercise programme a person may measure heart rate to monitor fitness levels. Below are three different heart rate values.

(a) **Place** the heart rate values into **Table 4** to show a person's resting, working and recovery heart rate.  
[1 mark]

**150 BPM**

**70 BPM**

**90 BPM**

**Table 4**

<b>Resting heart rate</b>	<b>Working heart rate</b>	<b>Heart rate during recovery</b>

(b) Explain why you placed the value in **Table 4** as **working heart rate**. [1 mark]

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(c) Explain why you placed the value in **Table 4** as **recovery heart rate**. [2 marks]

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(d) State what **change to resting heart rate** a person would expect if aerobic exercise was effective. [1 mark]

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18 Describe how a test can be set up using **repetition** of a particular exercise to assess the level of **muscular fitness**. [2 marks]

**19** State **three** physical changes that take place in the skeletal **muscles** as a result of **regular** and **appropriate aerobic** training. Explain how each of these physical changes helps to **improve performance**. [2 marks for each]

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

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**20** State **four** reasons why it is important for the health and safety of all those involved in a physical activity to abide by **rules and codes of behaviour**. [1 mark for each]

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

\_\_\_\_\_

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

\_\_\_\_\_

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

\_\_\_\_\_

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

\_\_\_\_\_

21 (a) A warm-up helps to prepare a person's body systems for the workout.

Write down **two** other **purposes** for including a **warm-up** before the workout. [1 mark for each]

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

\_\_\_\_\_

\_\_\_\_\_

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

\_\_\_\_\_

\_\_\_\_\_

(b) Study **Table 5** which outlines a **warm-up**. This was suggested as being appropriate for a **health-related** workout to develop aerobic fitness through a continuous steady paced run.

**Table 5**

<b>PHASE 1</b>	<b>Pulse-raising activity</b>	Sprint reps of 60 m, 80 m, 100 m with 30 seconds rest in between reps working at 95% MHR. Do 3 sets.
<b>PHASE 2</b>	<b>Mobility exercises</b>	Mobilise lower body joints by moving them as quickly as possible beyond their normal range of movement. Spend 30 seconds on each exercise.
<b>PHASE 3</b>	<b>Flexibility exercises</b>	Complete ballistic stretching exercises that cover the leg muscles. Spend 45 seconds on each stretching exercise.

Explain what you find **wrong** with **each** phase of the warm-up and state what you would **recommend** should be included. [2 marks for each]

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

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

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

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(c) It is important to follow a physical activity workout with a cool-down.

(i) State **one** reason for including **flexibility exercises** in the **cool-down**. [1 mark]

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(ii) State **two** reasons for including **pulse lowering activities** in the **cool-down**. [1 mark for each]

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

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

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**22 (a)** A person wishes to improve in the 800 m (32 lengths of a 25 m pool) freestyle performance to qualify for the regional finals in 8 weeks time by applying the principles of training.

In week one the plan is to train twice a week for 30 minutes. In each session the person will cover a distance of 800 m which includes the warm-up, workout and cool-down.

**(i)** State the **two** most important **components of physical fitness** that must be developed in the 8 week training programme. **Explain** each of your choices. [2 marks for each]

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

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

(ii) Explain the **advice** you would give on the **type of exercise** that should be included in the workouts over the 8 weeks. [2 marks]

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(iii) Explain the **advice** you would give the person on the **method of training** that would be most suitable to use over the 8 weeks. [2 marks]

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(iv) Explain **two** ways the person could apply the principle of **progressive overload** to the 8 week pool training programme to improve performance in the 800 m freestyle swimming event.  
[2 marks for each]

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

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(b) To introduce variety to the 8 week training programme, the person decided to include a **weights programme** in the gym.

Study the information below in **Table 6** and answer the questions that follow.

**Table 6**

	Option 1	Option 2	Option 3	Option 4
<b>Repetition Maximum (RM)</b>	10	25	3	16

(i) Record in **Table 7** which of the four options given for **Repetition Maximum** is most suitable for **weeks 1–3** of this person's weights programme. [1 mark]

**Table 7**

Phase of the training programme	Repetition Maximum
<b>Weeks 1–3</b>	

(ii) Explain why you chose the option given for **Repetition Maximum** as most suitable for **weeks 1–3** of this person's weights programme. [3 marks]

(iii) Study the information below in **Table 8**. Having selected the appropriate Repetition Maximum, record in **Table 9** which of the four options given for **repetitions** is most suitable for **weeks 1–3** of this person's weights programme. [1 mark]

**Table 8**

	Option 1	Option 2	Option 3	Option 4
<b>Number of Repetitions</b>	23	15	9	2

**Table 9**

Phase of the training programme	Repetitions
Weeks 1–3	10

(iv) Explain why you chose the option given for **repetitions** as most suitable for **weeks 1–3** of this person's weights programme. [2 marks]

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



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For Examiner's use only	
Question Number	Marks
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