



General Certificate of Secondary Education  
2011

Centre Number

71

Candidate Number

## Physical Education

[G9741]

TUESDAY 24 MAY, AFTERNOON



### TIME

1 hour 30 minutes.

### INSTRUCTIONS TO CANDIDATES

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

Answer **all** questions.

You are provided with a Resource Booklet for use with questions **17** and **18**.

Do not write your answers on the Resource Booklet.

### 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 **17, 18(a)** and **19**.

For Examiner's use only

Page Number	Marks
2-3	
4-5	
6-7	
8-9	
10-11	
12-13	
14-15	
16	

<b>Total Marks</b>	
--------------------	--

1 Explain **two** things that a person can do to promote **physical health**.

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

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

2 Foods are composed of various combinations of carbohydrates, fats, proteins, vitamins, minerals, dietary fibre and water.

Use a tick (✓) to match each of the following foods to its most appropriate component in the table.

Foods	Components					
	Carbohydrate	Fats	Proteins	Vitamins & minerals	Dietary fibre	Water
Nuts						
Butter						
Chicken meat						

[3]

Examiner Only

Marks Remark





- 9 Use the appropriate words from the list below to complete the paragraph on aerobic energy production. A word may be used more than once.

**endurance work    nerves    physical effort    urea    muscularity**  
**oxygen    nutrients    circulatory    breathing    respiratory**

Aerobic energy is produced with the body's use of oxygen.

Aerobic energy production is determined by the ability of

the \_\_\_\_\_ and \_\_\_\_\_ systems to

deliver \_\_\_\_\_ and \_\_\_\_\_ to the

working muscles and the ability of the working muscles to use the

supply.

[2]

- 10 The run up in the long jump requires the athlete to build up to near maximum running speed then to take off from one foot on the board with maximum effort and jump as far as possible to land in the sand.

- (a) Describe the physical demands of the run-up for the long jump **and** explain how the energy will be produced for it (i.e. the balance between aerobic energy production and anaerobic energy production).

---



---



---



---

[2]

- (b) Describe the physical demands of the take-off from one foot on the board **and** explain the type of muscular fitness required for it (i.e. the relative importance of muscular power, muscular strength and muscular endurance).

---



---



---



---

[2]

Examiner Only

Marks Remark

- 11 (a) Using an appropriate type of exercise, describe how the continuous steady pace method of training can be effectively used to develop aerobic fitness.

---

---

---

---

[2]

- (b) In using weight training to develop muscular fitness, what decisions do you have to make for each weight training exercise for it to be effective?

---

---

---

---

---

---

---

---

---

[4]

Examiner Only	
Marks	Remark

12 Study **Resource 1** below and answer the questions that follow.

**Resource 1**

<b>Intensities</b>	> 95% MHR   80–85% MHR   70–75% MHR 60–65% MHR   < 60% MHR
<b>Work times</b>	> 20 minutes   15–20 minutes   3–5 minutes 60–90 seconds   10–30 seconds
<b>Repetitions</b>	Perform once no repetitions   3–5 repetitions 8–10 repetitions   13–20 repetitions   > 20 repetitions
<b>Work/Recovery</b>	Ratio > 1:10   Ratio of 1:10   Ratio of 1:4 Ratio of 1:1   No recovery time
<b>Sets</b>	5 sets (10 mins rest between)   4 sets (10 mins rest between) 3 sets (10 mins rest between) 2 sets (10 mins rest between)   1 set

Using the information in **Resource 1**, select the most appropriate intensity, work time, number of repetitions, work/recovery ratio and number of sets to show how **interval training** should be used to effectively develop **aerobic fitness** and **anaerobic fitness**. Write your answers in the table below.

<b>Factors to consider</b>	<b>To effectively use interval training to develop aerobic fitness</b>	<b>To effectively use interval training to develop anaerobic fitness</b>
Intensities		
Work times		
Number of Repetitions		
Work/Recovery ratios		
Number of sets		

[10]

Examiner Only

Marks Remark

13 Study **Resource 2** below. Show that you can apply the principle of progressive overload appropriately and effectively to **develop muscular power**. Write your answers in the table and explain your decisions.

**Resource 2**

Weeks	Weight	Repetitions
Weeks 1–3	40 kg	5
Weeks 4–6		
Weeks 7–9		

[4]

The explanation for my decisions:

---



---



---



---



---



---



---



---



---



---

[4]

Examiner Only	
Marks	Remark

14 For fitness test results to be **valid** and **reliable** there are certain principles that must be followed.

**(a) Principle 1**

The tests selected (or designed by you) should be suitable for the purpose.

Using an example explain this principle with regard to the fitness test results being valid.

---



---



---



---



---



---



---

[3]

**(b) Principle 2**

The protocol (procedures and rules) for the tests must be followed strictly.

Using an example explain this principle with regard to the fitness test results being reliable.

---



---



---



---



---



---



---

[3]

Examiner Only	
Marks	Remark

- 15** When a person starts to exercise vigorously the muscles demand more oxygen to allow them to work at this higher work rate.

The **circulatory system** responds to ensure that the working muscles get more oxygen. Explain **two** of its **immediate** responses.

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

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

- 16** Exercise is an important part of a healthy lifestyle, but it must be done safely for people to benefit. It is important to be aware of hazards and to be able to deal with them.

**(a)** What do you understand a hazard to be?

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

**(b)** Give an example of a hazard whilst participating in a sport.

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

Examiner Only	
Marks	Remark





(c) From the information given in the table in **Resource 4**, choose **two** exercises where you think the resistance is definitely **too high** to effectively develop muscular endurance. Explain your choice.

---

---

---

---

[2]

Examiner Only	
Marks	Remark





(c) **Explain** how you judge whether the principle of **rest/recovery** has been applied safely and appropriately.

---

---

---

---

---

---

---

---

---

---

[3]

(d) **Explain** how you judge whether the principle of **peaking** has been applied safely and appropriately.

---

---

---

---

---

---

---

---

---

---

[3]

---

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

---

Examiner Only

Marks

Remark







Permission to reproduce all copyright material has been applied for.  
In some cases, efforts to contact copyright holders may have been unsuccessful and CCEA  
will be happy to rectify any omissions of acknowledgement in future if notified.



General Certificate of Secondary Education  
2011

---

**Physical Education**

**[G9741]**

**TUESDAY 24 MAY, AFTERNOON**

---



**RESOURCE BOOKLET**

**Do not write your answers on this Resource Booklet**

**Resource 3**

**FOR USE WITH QUESTION 17**

**Do not write your answer on this insert**

John has just finished school. He has taken a job at a local petrol station near his home. The petrol station is open 24 hours each day and he can be flexible about when he works.

John, his parents and older brother are members of the golf club which is next door to his home. His parents and brother play regularly. John played golf each weekend with some of his friends. While at school John's parents paid his golf fees.

Also while at school he played on the school volleyball team. This involved two practice sessions per week and one match. Now that he has left school, some of his friends, who live beside the volleyball club but twenty miles from him, want him to play volleyball for the club. The club uses the leisure centre as its base and he would be required to attend two set training sessions per week and to play a match each Saturday night.

## Resource 4

## FOR USE WITH QUESTION 18

**Do not write your answer on this insert**

**ORGANISATION OF THE CIRCUIT**

The purpose or objective of the circuit training programme is **to develop muscular endurance** in the major muscles of the body.

The group consists of 14 boys and 6 girls who are all between 16 to 18 years old and in good health.

The venue booked for the group is a purpose-built fitness gym which has a good range of fixed stations as well as free weights.

The group is organised into pairs and each pair works around the circuit where at each station they perform as many repetitions as they can in 30 seconds. Each person can choose a suitable weight/resistance for themselves. One works and the other counts the repetitions and records the number.

They then swap roles for that station. After each of the pair does the three sets, they move to the next station.

The table below shows one person's average number of repetitions done in each of the sets over the first two weeks of the training programme.

<b>Order of Exercises</b>	<b>Average Reps for 1<sup>st</sup> Set</b>	<b>Average Reps for 2<sup>nd</sup> Set</b>	<b>Average Reps for 3<sup>rd</sup> Set</b>
1 Upper body – shoulder and arm exercise	28	29	28
2 Upper body – chest and arm exercise	17	16	16
3 Upper body – back and arm exercise	29	27	30
4 Upper body – upper arm (front) exercise	8	7	4
5 Upper body – upper arm (back) exercise	30	30	29
6 Trunk – upper stomach exercise	15	14	13
7 Trunk lower stomach exercise	14	14	13
8 Trunk – left side exercise	17	15	14
9 Trunk – right side exercise	15	15	15
10 Trunk – back exercise	15	15	14
11 Lower body – hip exercise	26	27	28
12 Lower body – upper leg (front) exercise	18	12	6
13 Lower body – upper leg (back) exercise	28	27	30
14 Lower body – lower leg (back) exercise	16	15	14
15 Lower body – upper and lower leg exercise	8	5	3

