

Centre Number						Candidate Number				
Surname										
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Candidate Signature										

For Examiner's Use	
Examiner's Initials	
Question	Mark
1	
2	
3	
4	
5	
6	
7	
TOTAL	



General Certificate of Education  
Advanced Subsidiary Examination  
January 2011

# Physical Education

# PHED1

## Unit 1 Opportunities for and the Effects of Leading a Healthy and Active Lifestyle

Tuesday 18 January 2011 9.00 am to 11.00 am

You will need no other materials.

### Time allowed

- 2 hours

### Instructions

- Use black ink or black ball-point pen. Pencil should only be used for drawing.
- Fill in the boxes at the top of this page.
- Answer **all** questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book. Cross through any work you do not want to be marked.

### Information

- The marks for part questions are shown in brackets.
- The maximum mark for this paper is 84.
- In **Section B**, you should answer in continuous prose.
- In **Section B**, you will be marked on your ability to:
  - use good English
  - organise information clearly
  - use specialist vocabulary where appropriate.



J A N 1 1 P H E D 1 0 1

**Section A**

Answer **all** questions in the spaces provided.

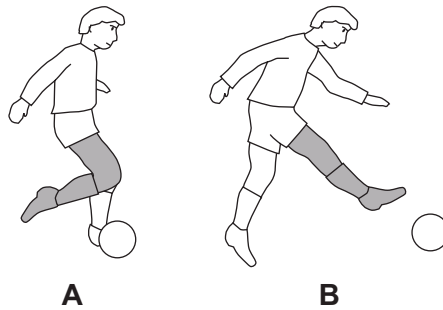
There are 12 marks for each question.

**Applied Exercise Physiology**

**1** In some games, players kick a ball to keep possession and/or to gain territory.

**1 (a)** **Figure 1** shows a footballer kicking a ball.

**Figure 1**



**1 (a) (i)** What are the names of the ‘articulating bones’ of the knee joint?

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 (2 marks)

**1 (a) (ii)** In **Figure 1**, what ‘joint action’ takes place at the knee of the kicking leg in the movement from position **A** to position **B**?

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 (1 mark)

**1 (a) (iii)** What is the name of the main ‘agonist’ that causes this action in **Figure 1**?

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 (1 mark)



**1 (b)** Footballers need 'stamina' to play the game effectively.

State **two** classes of food that are most suitable for players who require stamina **and** why they are needed in their diet.

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*(3 marks)*

**Question 1 continues on the next page**

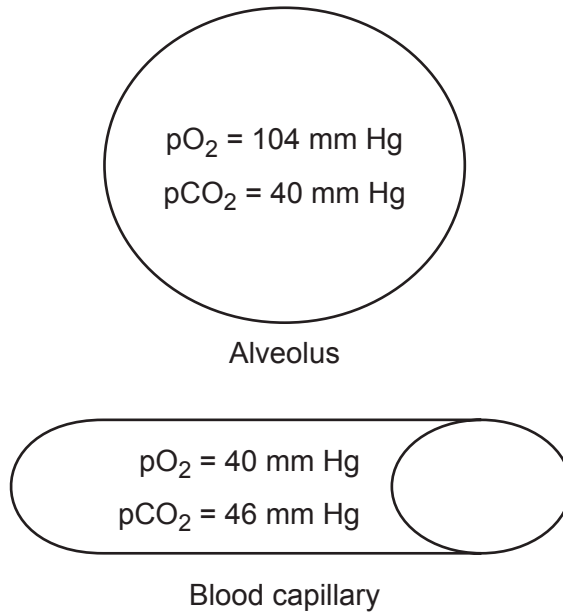
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1 (c) In order to make use of their stamina, footballers need to take in oxygen.

Figure 2 shows values for the partial pressure of oxygen and carbon dioxide at two different locations in one gas exchange system.

Figure 2



1 (c) (i) Use the information in Figure 2 to explain how oxygen and carbon dioxide move between the two locations.

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(3 marks)



12

**1 (c) (ii)** The alveoli provide the lungs with a large surface area for diffusion.

Name **two** other structural features of the lungs that assist diffusion.

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(2 marks)

**2** Sports performers need to be fit. One possible limit to fitness in some activities is body fat. A high 'Body Mass Index' (BMI) indicates a high percentage body fat and possibly obesity.

**2 (a) (i)** How is Body Mass Index (BMI) calculated?

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(2 marks)

**2 (a) (ii)** How may 'obesity' affect performance in different activities?

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(2 marks)

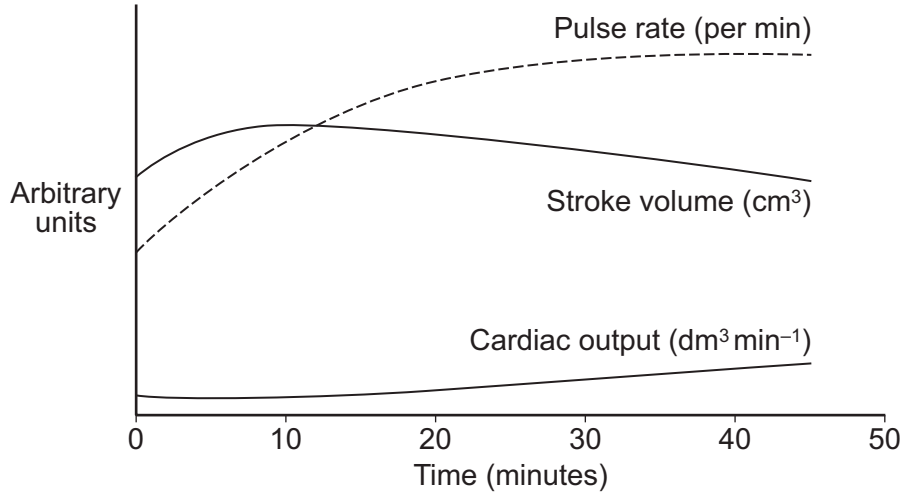
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2 (b) During exercise, the pulse rate of a performer will change. **Figure 3** shows the stroke volume, pulse rate and cardiac output of a performer completing a 45-minute run, at sub-maximal pace, on a treadmill.

**Figure 3**



2 (b) (i) Briefly explain the terms 'cardiac output' and 'stroke volume', **and** the relationship between them.

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(3 marks)



2 (b) (ii) **Figure 3** shows 'cardio-vascular drift'.

Use **Figure 3** to explain the term cardio-vascular drift.

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(3 marks)

2 (b) (iii) Explain how it is possible for a trained performer and an untrained performer to have the same cardiac output for a given workload.

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(2 marks)

12

**Skill Acquisition**

3 When learning to long jump, athletes will use their abilities to perform this skill.

3 (a) (i) Briefly explain the terms 'ability' **and** 'skill'.

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(2 marks)

**Question 3 continues on the next page**

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**3 (a) (ii)** What are the characteristics of a skilled performance?

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*(3 marks)*

**3 (b)** Explain the term 'insight learning' **and** suggest how this approach could have a positive effect on learning to long jump.

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*(3 marks)*

**3 (c)** Describe how the type of feedback being used by a long jumper differs between the early stage of learning **and** the final stage of learning.

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*(4 marks)*

12





**4** Many physical activities require a performer to throw an object, either at a target or for distance.

**4 (a) (i)** The action of throwing can be transferred from one activity to another.

Describe what is meant by the term 'positive transfer of learning'.

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(1 mark)

**4 (a) (ii)** Name **and** explain **three** other forms of transfer of learning that can take place.

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(3 marks)

**4 (a) (iii)** How can a coach make sure that successful transfer of learning takes place?

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(3 marks)

**Question 4 continues on the next page**

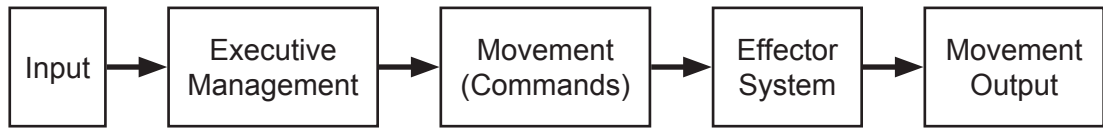
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**4 (b)** During activities that involve throwing, performers will use open and closed loop control systems to control the movement.

**Figure 4** shows an 'open loop control system'.

**Figure 4**



**4 (b) (i)** What are the characteristics of an open loop control system?

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*(2 marks)*

**4 (b) (ii)** Explain why an open loop control system is not applicable to all types of skills.

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*(3 marks)*



**Opportunities for Participation**

**5** The way sports are played and the structure of physical education lessons have changed over time.

**5 (a)** **Figure 5** shows a football match between England and Scotland at the Oval in 1875. It is an example of 'rational recreation'.

**Figure 5**



Using **Figure 5** and your own knowledge, outline the characteristics of rational recreation.

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*(4 marks)*

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5 (b)

**Figure 6** shows children taking part in a physical education lesson based on the programme Moving and Growing, which was designed for primary schools in the 1950s.

**Figure 6**



Using **Figure 6** and your knowledge of the programme Moving and Growing, describe the similarities **and** differences between this programme and the concept of 'play'.

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(4 marks)



**5 (c)** The UK Government is encouraging organisations to increase participation in sport and active leisure.

How can schools and community sports clubs work together to increase participation in physical activity?

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(4 marks)

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**6** Participation in sporting physical activities has often been dependent on the opportunities available to individuals within society.

**6 (a) (i)** The UK Government, through the Department for Culture, Media and Sport, funds Sport England to promote and invest in grassroots and community sport.

What are the **three** key aims of Sport England?

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(1 mark)

**Question 6 continues on the next page**

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**6 (a) (ii)** Why has the UK Government become increasingly involved in developing specific policies to encourage participation in sport?

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*(4 marks)*

**6 (b)** During the past decade there has been an increase in membership of private fitness clubs.

What are the advantages **and** the disadvantages for the general public of more private fitness clubs opening?

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*(4 marks)*



**6 (c)** Some groups in society are less involved in sport and physical activity than other groups.

Give **three** reasons for the lower participation rates among some ethnic minority groups.

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(3 marks)

12

**Turn over for the next section**

**Turn over ►**



**Section B**

Answer this question. There are 12 marks for this question.

This question should be answered in continuous prose.

In order to maximise your marks you are advised to give equal weighting to all areas of the question.

**7** You have been asked to develop a training programme to improve the fitness and skills of a group of AS level Physical Education students.

Identify the main reasons for conducting fitness tests and discuss the possible limitations of fitness testing.

In addition, describe the factors that you would consider when deciding whether to use 'massed practice' or 'distributed practice' to develop skills.

**You may use this space to plan your answer**

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(12 marks)

**END OF QUESTIONS**

<b>12</b>



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**DO NOT WRITE ON THIS PAGE  
ANSWER IN THE SPACES PROVIDED**

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Figure 6: © OPSI. Reproduced under the terms of the Click-Use Licence

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