

Centre Number						Candidate Number				
Surname										
Other Names										
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 2013

# Physical Education

# PHED1

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

Tuesday 15 January 2013 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 3 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** To be more effective in physical activity, performers will consider their lifestyle choices. Diet is one lifestyle choice.

**1 (a) (i)** What do you understand by the term balanced diet?

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*(1 mark)*

**1 (a) (ii)** Briefly explain how **two** different named classes of food in an athlete's diet will aid his/her performance.

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*(2 marks)*

**1 (b)** During physical activity, oxygen is supplied to the muscles through the blood system.

Describe **two** characteristics of veins which assist the transport of blood.

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*(2 marks)*



1 (c) Table 1 shows the redistribution of blood during exercise.

Table 1

Organ	At rest (cm <sup>3</sup> per min)	Maximum effort (cm <sup>3</sup> per min)
Skeletal muscles	1000	26 000
Coronary vessels	250	1200
Skin	500	750
Kidneys	1000	300
Liver/gut	1250	375
Brain	750	750
Other	250	625
Whole body	5000	30 000

1 (c) (i) Explain how redistribution of blood occurs during exercise.

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(3 marks)

1 (c) (ii) Explain why blood flow to the brain remains the same during rest **and** during maximum effort.

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(2 marks)

1 (c) (iii) Using **Table 1**, explain why performers should not eat immediately before exercise.

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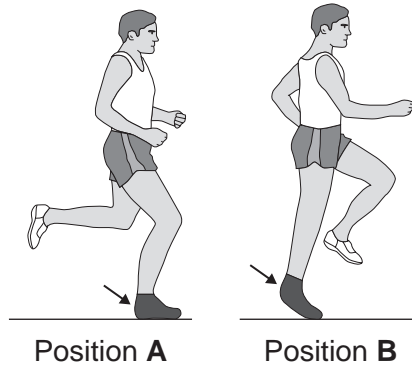
(2 marks)



2 Running is an example of a physical activity that requires an efficient respiratory system.

Figure 1 shows the drive phase of the leg action while running.

Figure 1



2 (a) (i) Using Figure 1, complete Table 2 to identify the main agonist, the joint action and the type of contraction at the right ankle when moving from Position A to Position B.

Table 2

	Right ankle movement from Position A to Position B
Main agonist	
Joint action	
Type of contraction	

(3 marks)

2 (a) (ii) State one mechanical advantage and one mechanical disadvantage of the lever system that is being used at the right ankle as the runner in Figure 1 moves from Position A to Position B.

Mechanical advantage .....

.....

Mechanical disadvantage .....

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(2 marks)



2 (b) While running, a performer will experience changes in lung volumes.

Complete **Table 3** below to show how the tidal volume, inspiratory reserve volume and expiratory reserve volume change during exercise.

**Table 3**

Volume name	Value at rest	Change during exercise
Breathing rate	16 breaths min <sup>-1</sup>	Increases
Tidal volume	500 cm <sup>3</sup>	
Inspiratory reserve volume	3100 cm <sup>3</sup>	
Expiratory reserve volume	1200 cm <sup>3</sup>	
Vital capacity	4800 cm <sup>3</sup>	No change

(3 marks)

2 (c) Explain how the gas exchange system operates at muscles.

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(4 marks)

12
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Turn over for the next question

Turn over ►



**Skill Acquisition**

**3** Performers need to learn skills in order to take part in physical activity. Skilled movements are learned, economic and efficient – they do not waste energy.

**3 (a)** Suggest **three** other characteristics of skill.

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*(3 marks)*

**3 (b) (i)** One way of learning a new skill is through operant conditioning which involves reinforcement to strengthen the stimulus-response bond.

Use examples to distinguish between the different types of reinforcement.

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*(3 marks)*

**3 (b) (ii)** Apart from reinforcement, how else could a coach make sure that operant conditioning is likely to result in the successful learning of a new skill?

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*(3 marks)*



**3 (c)** One way of helping performers to learn is to set suitable goals.  
What are the benefits of goal setting?

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(3 marks)

12

**4** Observational learning involves the stages of attention, retention, motor production and motivation.

**4 (a) (i)** Using examples, name the **two** different types of extrinsic motivation.

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(2 marks)

**4 (a) (ii)** Explain the factors that can influence the effectiveness of attention, retention **and** motor production in observational learning.

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(4 marks)

Turn over ►



**4 (b)** In team games, players will use the skills that they have learned to create a situation where there are two attackers against one defender (2 v 1).

**4 (b) (i)** When the players involved in a 2 v 1 situation are novices, the attack often breaks down. In terms of the input stage of information processing, explain why the attack may break down.

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(3 marks)

**4 (b) (ii)** In terms of the psychological refractory period, explain why a 2 v 1 situation should cause a defender's response time to be slower.

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(3 marks)

12

**Opportunities for Participation**

**5** The development of modern sport began in English public schools.

**5 (a)** What are the similarities **and** the differences between sport and active leisure?

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(3 marks)





**5 (b)** Why were the boys in English public schools encouraged to play sport?

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(4 marks)

**5 (c)** Currently, a national governing body for a sport produces a Whole Sport Plan. How does this benefit a sport?

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(5 marks)

12

Turn over ►



**6** In 1997, the Government published its plan for sport which introduced the idea of Sports Colleges as part of the Specialist Schools Programme in the United Kingdom.

**6 (a)** How does school sport differ from physical education?

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*(3 marks)*

**6 (b)** What were the main aims of Sports Colleges?

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*(4 marks)*



**6 (c)**

The Active People Survey (2010–2011), conducted by Sport England, found that less than 10 per cent of disabled people regularly took part in physical activity.

Discuss the suggestion that disabled participants have equal opportunities to take part in sport.

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(5 marks)

12

**Turn over for the next section**

**Turn over ►**



**Section B**

Answer this question in continuous prose. There are 12 marks for this question.

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 improve the fitness and skill levels of a group of performers within an AS level Physical Education class.

Describe the main parts of a cool-down that should end a session and the benefits of that cool-down.

Massed and distributed practices can be used to develop skills. Explain why you might choose to use massed practice rather than distributed practice.

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

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Turn over ►



