

General Certificate of Education  
January 2005  
Advanced Subsidiary Examination



**SPORT AND PHYSICAL EDUCATION**  
**Unit 1**

**PED1**

Thursday 20 January 2005 Afternoon Session

**In addition to this paper you will require:**  
a 12-page answer book.

Time allowed: 1 hour 30 minutes

**Instructions**

- Use blue or black ink or ball-point pen. Pencil should only be used for drawing.
- Write the information required on the front of your answer book. The *Examining Body* for this paper is AQA. The *Paper Reference* is PED1.
- Answer **four** from **five** questions.
- Do all rough work in the answer book. Cross through any work you do not want marked.

**Information**

- The maximum mark for this paper is 75.
- Mark allocations are shown in brackets.

**Advice**

- You will be assessed on your ability to use an appropriate form and style of writing, to organise relevant information clearly and coherently, and to use specialist vocabulary, where appropriate.
- The degree of legibility of your handwriting and the level of accuracy of your spelling, punctuation and grammar will also be taken into account.
- Up to 3 marks will be awarded for the quality of your written communication.

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**Physiological and Psychological Factors which Improve Performance**

Answer **four** from **five** questions.

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**1****Total for this question: 18 marks**

Rowing is an example of an activity that requires a high level of fitness and motivation.

- (a) (i) What do you understand by the term *local muscular endurance*? (2 marks)
- (ii) Describe a suitable test for measuring *local muscular endurance*. (3 marks)
- (iii) Explain the advantages **and** disadvantages of using such a test to measure *local muscular endurance*. (4 marks)

In order to maintain their training, rowers need a high level of motivation.

- (b) (i) What do you understand by the term *motivation*? Explain the different types. (4 marks)
- (ii) How could a coach motivate a group of rowers who train regularly? (5 marks)

2

Total for this question: 18 marks

Physical performance is achieved by using information to control body systems.

Figure 1 shows a typical Information Processing model.

Figure 1 is an information processing model taken from Wesson, Wiggins, Thompson and Hartigan, Sport and PE, A complete guide to advanced level study, Hodder and Stoughton.

- (a) Use **Figure 1** to explain the functions of each of the following stages:
- (i) *Perceptual mechanism*; (3 marks)
  - (ii) *Translatory mechanism*. (3 marks)
- (b) Selective attention is an important part of the information processing system.

Use **Figure 1** to identify where selective attention occurs and explain how it aids performance. (3 marks)

During physical performance, the nervous system controls the body's responses.

- (c) A 17-year-old runs 400 metres with maximum effort in 60 seconds. Describe the variations in heart rate and how these changes are achieved during the:
- (i) rest period immediately prior to the start of the 400 metres; (2 marks)
  - (ii) 400 metre race (exercise period); (4 marks)
  - (iii) five-minute recovery period after the 400 metres. (3 marks)

Turn over ►

3

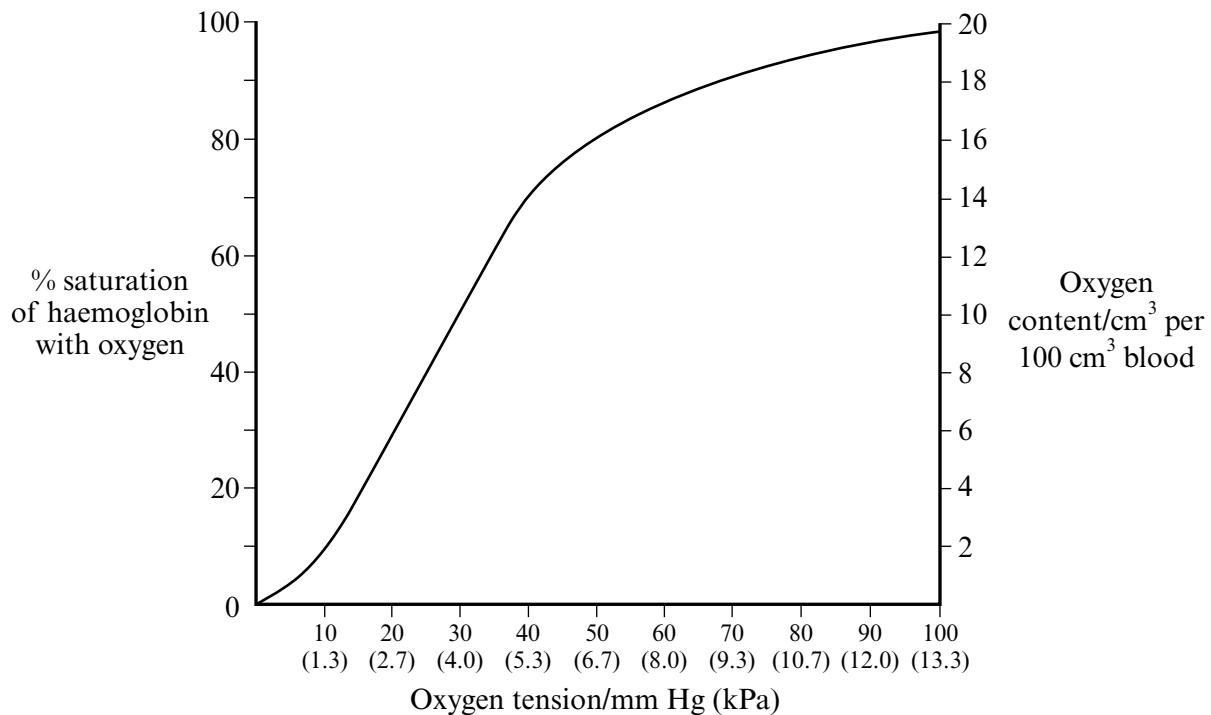
Total for this question: 18 marks

During games, performer's body systems have to adapt to continually changing environments.

For effective performance games players require oxygen to be delivered to the muscles and carbon dioxide to be removed.

- (a) (i) State **two** ways in which carbon dioxide is transported in the blood. (2 marks)
- (ii) Explain how oxygen is taken up by haemoglobin from the lungs and released at the muscle site. (3 marks)

**Figure 2** shows the *oxyhaemoglobin dissociation curve*.



**Figure 2**

- (iii) Use **Figure 2** to explain how exercise affects the shape of the curve and the effect this has on oxygen delivery to the muscles. (4 marks)

QUESTION 3 CONTINUES ON THE NEXT PAGE

During game activities, players will use open loop and closed loop control systems to control movement.

Figure 3 shows an open loop control system.



Figure 3

- (b) (i) What are the characteristics of an *open loop control system*? Give an appropriate example of its use in sport. (3 marks)
- (ii) Describe how a *closed loop control system* differs from an *open loop control system*. (3 marks)
- (iii) Explain why a *closed loop control system* is not applicable to all skills. (3 marks)

4

Total for this question: 18 marks

Learning enables performers to develop skilled use of their bodies.

- (a) (i) Demonstrations are a form of visual guidance. Identify **two** other forms of guidance. (2 marks)
- (ii) What could a coach do to make demonstrations as **effective** as possible? (4 marks)
- (b) Performers learn in a variety of ways. Explain the term *insight learning* and suggest how this approach could have a positive effect on performance. (3 marks)
- (c) Skilled performance is made possible through the effective use of lever systems.
- (i) Sketch and label a *3rd class lever system* and state an example of its use in sport. (3 marks)
- (ii) In your diagram, draw and label the *effort arm* and the *resistance arm*. (2 marks)
- (iii) What are the advantages **and** disadvantages of *3rd class levers* over the other types of lever systems? (4 marks)

Turn over ►

5

Total for this question: 18 marks

The analysis of movement and teaching styles helps teachers to plan effective lessons. **Figure 4** shows a goalkeeper taking a goal kick.

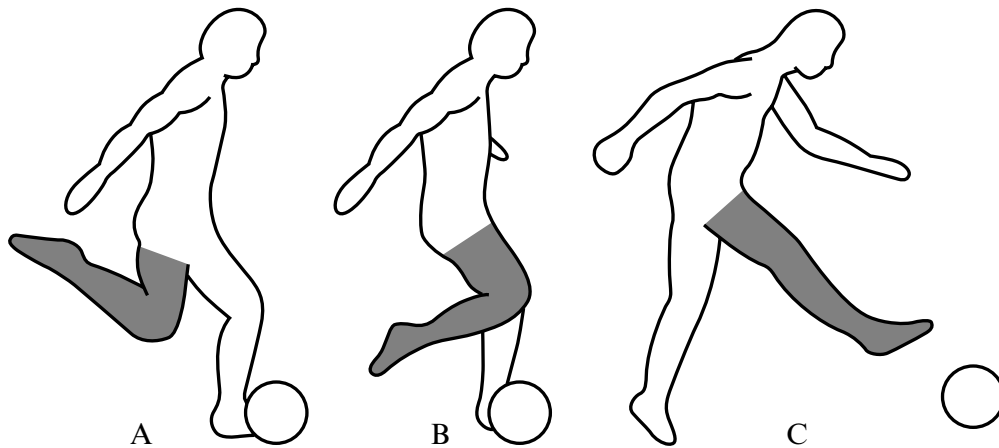


Figure 4

- (a) (i) With reference to the movement of the shaded leg in **Figure 4**, copy and complete **Table 1** in your answer book.

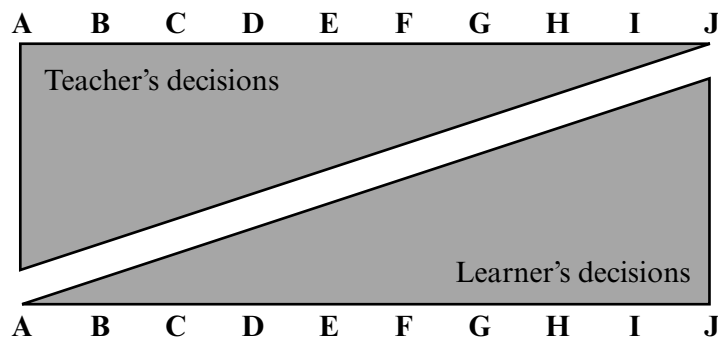
	Preparatory phase (A)		Kicking phase (B–C)	
	Main agonist	Joint action	Main agonist	Joint action
Hip				
Knee		Flexion		

Table 1

(7 marks)

- (ii) In which *plane* and about what *axis* does this kicking action take place? (2 marks)

- (b) Mosston identified a range of teaching styles, each represented by a letter on the model shown in **Figure 5**. The teaching style at **A** is the *command style*, whilst **J** is the *problem solving style*.



**Figure 5**

- (i) Explain the factors which a teacher, who is planning a football lesson should consider before choosing a particular teaching style. (4 marks)
- (ii) Discuss the advantages **and** disadvantages of **either** the *command style* **or** the *problem-solving style* of teaching. (5 marks)

**END OF QUESTIONS**

**THERE ARE NO QUESTIONS PRINTED ON THIS PAGE**