

General Certificate of Education
January 2006
Advanced Subsidiary Examination



SPORT AND PHYSICAL EDUCATION
Unit 1

PED1

Friday 20 January 2006 1.30 pm to 3.00 pm

For this paper you must have:

- 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.
- 3 of these marks will be awarded for the Quality of Written Communication.
- The marks for questions 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.

Physiological and Psychological Factors which Improve Performance

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

1

Total for this question: 18 marks

During a floor routine, a gymnast will demonstrate a range of movements which they will have perfected by acting on the guidance given to them by their coach.

(a) **Figure 1** shows the gymnast in a press-up position.



Position A

Position B

Source: www.torq.ltd.uk/exercise

Figure 1

- (i) Name the main *agonist* and main *antagonist* acting at the elbow joint as the gymnast moves from position A (up position) to position B (down position).
(2 marks)
- (ii) Name the types of muscle contraction that occur at:
- position A (up position) whilst the performer is stationary and;
 - as the performer moves from position A (up position) to position B (down position).
- (2 marks)
- (iii) Using **Figure 1**, identify through what plane and about which axis the elbow action takes place.
(2 marks)



Source: www.netfit.co.uk/football-program-webwen.htm

Figure 2

- (iv) **Figure 2** shows a wide arm press-up. What joint action will take place at the shoulder when moving from the up position to the down position in **Figure 2** and what is the name of the main *agonist* in this movement? (2 marks)
- (b) (i) Name and explain, using examples, the **three** main methods of guidance which a coach could use to help the gymnast. (3 marks)
- (ii) Name the **three** stages of learning **and** describe how the method of guidance might change as the gymnast moves from one stage of learning to the next. (3 marks)
- (iii) As a performer moves from the early stage of learning through to the final stage of learning, the type of feedback they use changes. Describe how feedback should differ at these two stages. (4 marks)

Turn over for the next question

Games players need to have an efficient cardio-respiratory system and they need to process the information they receive during the game, to enable them to meet the demands of the match.

- (a) Describe **three** structural features of the lungs that assist the diffusion of respiratory gases. (3 marks)
- (b) **Figure 3** shows the spirometer trace of a games player.

Figure 3 is not reproduced here due to third-party copyright constraints.

- (i) What lung volumes are represented by **A**, **B** and **C**? (2 marks)
- (ii) What would be the effect of a period of continuous running on the spirometer trace for lung volume **A**? (2 marks)
- (c) For effective performance, games players need to be agile. Identify **two** other key components of fitness required by a games player. Give an example of how **one** of these components is used within a game. (3 marks)
- (d) (i) To be effective, games players will need to use selective attention.
Explain the term *selective attention* **and** give examples of its use from a game of your choice. (4 marks)
- (ii) How can a coach improve a player's *selective attention*? (4 marks)

3

Total for this question: 18 marks

When a person is participating in a sporting activity, the physical demands of exercise are met by increasing blood flow to some areas of the body.

- (a) (i) Explain the terms *cardiac output* and *stroke volume* **and** the relationship between them. (3 marks)
- (ii) What are the effects of training on resting *cardiac output* and *stroke volume*? (2 marks)
- (iii) During a sustained period of exercise, a trained performer's stroke volume will change compared with their resting stroke volume. How is this achieved? (4 marks)
- (b) (i) In order for a performer or team to succeed, they normally need to be motivated.
- What do you understand by the term *intrinsic motivation*? (2 marks)
- (ii) Using examples, explain the advantages of using *intrinsic motivation* and the disadvantages of using *extrinsic motivation* to motivate an individual. (3 marks)
- (iii) How could a coach motivate a group of runners of differing abilities who regularly train together? (4 marks)

Turn over for the next question

Weightlifters will follow a strength training programme to ensure that they perform to their optimum level in a competitive performance.

Figure 4 shows a weightlifter performing a squat.



Source: www.search.empics.co.uk/urn/186585.html

Figure 4

- (a) With reference to **Figure 4**, copy and complete **Table 1** in your answer book and identify the *joint action*, *main agonist* and the *type of muscle contraction* at the hip **and** ankle joint in the upward phase of the squat.

	Hip	Ankle
Joint action		
Main agonist		
Type of muscle contraction		

(6 marks)

Table 1

- (b) The squat may be used as a maximal test for measuring strength.

What are the principles of a maximal test?

(3 marks)

- (c) (i) This weightlifter learned the correct technique to perform a squat by observational learning.

What do you understand by the term *learning*? (2 marks)

- (ii) Bandura's model of observational learning is shown in **Figure 5**.

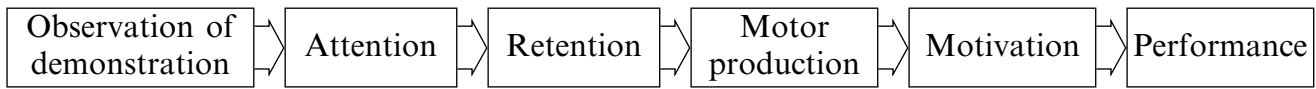


Figure 5

Using **Figure 5**, explain how the terms *attention*, *retention*, *motor production* and *motivation* help the process of learning. (4 marks)

- (d) Explain the term *insight learning* and suggest how this approach to learning could have a positive effect on performance. (3 marks)

Turn over for the next question

5

Total for this question: 18 marks

During a match, games players receive different forms of reinforcement and use several components of fitness such as agility.

- (a) Explain the terms *negative reinforcement* and *punishment*, giving examples of each from a team game. (4 marks)
- (b) Using examples, explain how a coach could use *positive reinforcement* to improve the performance of his players. (2 marks)
- (c) Reinforcement is a feature of *operant conditioning*. What else does the coach need to consider for *operant conditioning* to be effective? (3 marks)
- (d) Using an example from a game of your choice, explain the term *agility* **and** suggest how it can be measured. (3 marks)
- (e) As part of their training programme, players undergo regular fitness testing. One of the players performs a standard agility test in a controlled environment.

Discuss whether this is likely to be a *valid* **and** *reliable* measure of the player's agility in an invasion game. (4 marks)

- (f) During a match, a coach makes subjective and objective observations of the game. What do you understand by the terms *subjective* and *objective*? (2 marks)

END OF QUESTIONS

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Question 1 Source: www.torg.ltd.uk/exercise, January 2005
www.netfit.co.uk, January 2005

Question 2 Source: Wesson, Wiggins, Thompson and Hartigan, *Sport and PE*, Hodder & Stoughton, 2002

Question 4 Source: Empics, www.empics.co.uk, January 2005

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