



General Certificate of Education

**Physical Education 1580
PHED1**

Report on the Examination

2010 examination – June series

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PHED1

Opportunities for and the Effects of Leading a Healthy and Active Lifestyle

General

The AQA Specification for AS Physical Education (PE) has a single examination, PHED1. The exam paper for this unit is divided into Section A and Section B. Section A contains six 12 mark questions, two on each of the topic areas of Applied Exercise Physiology, Skill Acquisition and Opportunities for Participation. Section B contains a single 12 mark question covering Applied Exercise Physiology and Skill Acquisition in a practical situation. The June 2010 paper contained a number of questions that provided excellent opportunities for differentiation, and allowed the more able candidates to score higher marks. This paper was the first to provide spaces for the candidate's responses in the form of a combined question paper and answer booklet, and also the first time that it has been marked on-line. As is usual with an AS examination paper, there was a large range in the quality of answers from candidates. Instances of maximum marks for a question were quite rare, although it appeared that the majority of the candidature was able to achieve marks on most parts of the paper. In general, the topic areas of Applied Exercise Physiology and Opportunities for Participation were where candidates scored the most marks, whereas conversely, the Applied Exercise Physiology and Skill Acquisition, and Skill Acquisition questions achieved the least marks.

Question One

This question was concerned with muscle actions during a push-up, lever systems and cardiac output.

- a) i) The majority of candidates correctly identified triceps as the main agonist in this question.
- a) ii) The majority of candidates provided answers for this question although the range of marks, and responses, varied between centres. Many candidates failed to distinguish between the two phases that the question required and so relied on examiners to make the distinction between the stationary and upward phases. This was achieved by taking the first answer as being related to the first part of the question, the stationary phase. Many candidates 'hedged their bets' by naming different types of muscle contractions for each phase. Again, examiners took the first answer as the candidates' intended answer; otherwise the candidate who writes down every type of muscle contraction in the hope that one of them might be correct will get a mark, when they don't know the answer. It appeared that many candidates could identify the isometric contraction in the stationary phase, but fewer were able to correctly identify the concentric contraction during the upward phase. Weaker responses identified joint actions (extension) rather than types of muscle contractions.
- a) iii) The vast majority of candidates attempted this question and most gained credit for identifying fulcrum, load and effort as the main components of a lever system. Far fewer managed to name the lever system or put the components in the correct positions on their diagram.
- b) i) In this question, a large proportion of candidates incorrectly suggested that both cardiac output and stroke volume are affected in the same way by training, in that they both increase, rather than correctly suggesting that stroke volume increases, but cardiac output remains the same.

- b) ii) This question was generally well-answered, with the more able candidates easily achieving maximum marks. Weaker candidates struggled with this question as it required some fairly detailed physiological knowledge.

Question Two

This question asked for details about gas transport by blood, the role of vitamins and minerals, and the mechanics of breathing. The anatomy of running and the control of heart rate were also linked in to this question.

- a) i) This question was generally well answered, with many candidates able to suggest two of three ways that carbon dioxide is transported by the blood. Use of incorrect terminology was the downfall of many candidates, with terms such as 'carried in blood' and 'in plasma' two generalised to be worthy of credit.
- a) ii) There were many GCSE level answers to this question, with candidates talking about oxygenated and deoxygenated blood moving around the body, rather than precise terms. The idea that oxygen was 'taken up by haemoglobin' was in the question and therefore not credited. The expected response was the formation of oxyhaemoglobin. However, many candidates did manage to identify the differences in partial pressure across the alveola/capillary and muscular/capillary boundaries that permits diffusion to occur. Although the correct physiological term for diffusion of gases is partial pressure, it should be noted by centres that for the purposes of this examination, 'concentration' is accepted as an equivalent term.
- b) The reasons provided for why aerobic training improves oxygen transport in this question invariably revolved around cardiac physiology, rather than vascular physiology. Few candidates correctly identified the idea of increased blood volume and therefore more haemoglobin, and even fewer considered the idea of increased capillarisation. The idea of an increase in a VO_2 difference was hardly ever mentioned.
- c) In this question, only the minority of candidates had a clear understanding of the detailed roles of vitamins and minerals. There were many generalisations about vitamins and minerals being required to maintain good health. A number of candidates failed to identify the key role/relevance to sport and performance.
- d) The majority of the candidates were able to achieve several marks in this question, correctly identifying the effects of the diaphragm and intercostal muscles on the volume of the thorax through the ribs being moved upwards and outwards, and in doing so, reducing the pressure within the lungs.

Question Three

This question required candidates to present details of the knowledge of skill and ability, the classification of the skill of triple jumping, and the observational model of learning.

- a) Most candidates were able to gain some credit for this question, with many gaining full marks. Some lost a mark by attempting to write Knapp's definition, but left out the word 'learned'.
- b) The majority of candidates were able to gain some marks for this question. But there was the perennial problem of candidates mistakenly confusing the idea of open-closed continuum being determined by the weather instead of the environment. Another problematic area appeared to be the discrete-continuous continuum, where many candidates suggested that triple jumping was a continuous skill, or failed to justify it as a serial or discrete skill.
- c) This question proved once again that learning theories are taught to many, but understood by only a few. For those who did manage to correctly identify the four stages in Bandura's model there was the added problem of trying to explain the terms using alternative language rather than using the word from the term. Suggesting that 'attention' was concerned with 'paying attention to' or 'retention' was about 'retaining the information', did not gain credit. Many candidates incorrectly identified 'motor production' as performing the skill rather than have the capability to perform the skill.
- d) Many candidates misinterpreted this question making suggestions as to what factors concerning the observer should be considered by the coach, rather than factors concerning the demonstration. When the candidates did talk about aspects of the demonstration, then responses such as 'perfect demonstration', 'highlight cues' and 'use of imagery' were sufficient for full marks.

Question Four

This question posed the candidates with problems concerning selective attention and response time.

- a) i) This topic was generally well-answered, with many candidates explaining the role of selective attention. Some candidates incorrectly located selective attention occurring prior to short-term sensory storage, or in either long-term memory or short-term memory.
- a) ii) This was a more discriminatory question, with the full range of marks being awarded to the candidature. Simplistic responses such as 'practice' or 'repetition' did not achieve credit, but many candidates correctly identified factors such as intense stimuli and motivation as well as the more obvious ones of select what to attend to and ignore distractions.
- b) i) Surprisingly large numbers of candidates failed to identify the relationship between the three named time phases.
- b) ii) 'Concentration', 'fitness levels' and 'number of choices' were commonly identified as factors affecting response time. The idea of age and gender having an influence needed to be explained in terms of that its old age and the female gender whose response time suffers.

Question Five

This question required candidates to identify urban adaptations of outdoor and adventurous activities, distinguish between perceived and real risk, and to explain why participation rates in physical activity by disabled people is quite low, yet there is increasing levels of competitive participation.

- a) This question was generally well-answered. There were a number of weird and wonderful activities identified, some of which the examiners had never heard of! Climbing walls were easily the most popular form of urban adaptation. Because of the image in the question paper, skiing and snow-boarding were not acceptable answers.
- b) Many candidates found it hard not to repeat the question as their answer, eg 'real risk is where there is a real risk'. Weaker candidates were unable to explain the concepts in appropriate alternative language.
- c)
 - i) Candidates found it relatively easy to gain marks on this question, with responses such as 'stereotyping', 'lack of confidence', 'discrimination' and 'lack of media coverage' all being worthy of credit. Non-specific answers such as 'lack of facilities/coaches' were considered too generalised.
 - ii) As with the previous question, responses such as the role of various Governing Bodies, adaptations of various activities and increases in the number of clubs, enabled many candidates to obtain marks. But simplistic responses of more funding/coaches were not given credit.

Question Six

This question was concerned with Sport England and Governmental involvement in sport, and how school provision can influence participation.

- a) Although Sport England has been quite busy in terms of its policies, knowledge about these policies was scant. Many candidates simply identified one policy, often 'stay start succeed', rather than the three that were required. Many candidates erroneously suggested Youth Sport Trust was a policy.
- b) This question was well-answered overall. By far the most popular responses were some ideas about participation reducing crime, links to health and fitness and reducing costs to the NHS. Many candidates failed to clearly explain the concept of the development pyramid, whereby increased participation should enable an increase in potential medal winners.
- c) What a school provides in terms of facilities, range of activities, teams/clubs and traditions all influence what it may offer its pupils and therefore participation. Many candidates lost marks with this question because they put the same point down in different ways, eg they referred to PESSCL's, then talked about developing school club links and then about SSCO's.

Question Seven

This question asked candidates about the benefits of a warm up and the use of progressive part practice.

The banded mark scheme used for this stretch and challenge aspect of the examination requires candidates to do more than simply put down 12 creditworthy points to gain maximum marks. Marks are awarded for the whole of the response, based on what might be expected of a typically bright AS student's response, ie range and depth of knowledge, addressing both areas of the question using good technical language and grammar. As was the case in the summer 2009 examination, most responses lacked any real depth of knowledge. Superficial answers from candidates would suggest that warm-ups prevented injury and increased blood flow to muscles. Many candidates decided to describe in detail how to warm-up, with detailed descriptions of the exercises involved. Many candidates tended to talk about a warm-up literally warming up the muscles or the body. This superficial type of answer was considered to be too vague to receive credit. Concepts such as increasing release of synovial fluid, increased metabolic activity, and increased sensitivity of nerve receptors were rarely offered as responses. Many candidates referred to the psychological benefits of warming up, and its potential to reduce stress, arousal and/or anxiety. Simplistic responses such as 'get the mind right' or 'prepare the brain' were considered to be too vague for credit, and as an extension of this, the idea of 'mentally prepare' was also considered too vague.

Candidate knowledge of progressive part practice appeared to be slightly worse than that of warm-up benefits. Surprisingly, only a minority of candidates could define the term accurately enough to distinguish it from part practice. In general terms, responses to these types of questions need to be concerned about the nature of the task, the situation, and the nature of the learner. The nature of the task rather depends on its complexity and coherence. The situation depends largely of whether an element of danger may be involved and how time-consuming progressive part practice is. The nature of the learner depends on the stage of learning and whether the performer is capable of remaining motivated for the duration of the instruction.

Many candidates seemed restricted in their responses because the stem to the question involved a group of AS PE students. Candidates may have then made the assumption that such a group of subjects could not possibly be beginners or learners and therefore failed to use these thoughts in their responses. The use of a group of AS PE students as a group of subjects will be the norm for this question. Such a group of subjects can easily be novices when it comes to any aspect of the Applied Exercise Physiology and Skill Acquisition in a practical situation question, especially when it comes to the Skill Acquisition component. AS PE students can easily be being taught things that they have never encountered before, or that they have yet to clearly grasp.

Mark Ranges and Award of Grades

Grade boundaries and cumulative percentage grades are available on the [Results Statistics](#) page of the AQA website www.aqa.org.uk/over/stat.