

Examiners' Report/
Principal Examiner Feedback

Summer 2012

Principal Learning Sport and Active
Leisure (SL303)

Science and Technology in Sport and
Active Leisure

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General Comments

June 2012 was the third exam session for Unit 3, and the performance of candidates was similar to the previous two series. Most candidates were able to respond effectively to most questions. There was evidence that most candidates had been effectively prepared, with the exception of question 6. That question aside, the majority responded positively to the tasks set, offering valid answers.

Candidates appeared to manage their time effectively and did not produce lengthy passages of irrelevant information. The vast majority of candidates appeared to complete the paper in the time available, with little evidence of rushed work towards the end.

The emphasis in this paper, and future ones, will inevitably be to ensure that papers are applied. Students must be able to apply their knowledge to a variety of practical situations. The higher marks, particularly in levels of response questions, will be characterised by the ability to demonstrate application of theory to the stimulus material. It will be important for candidates to practise doing this in their preparation for the assessment. They should also ensure that they apply it in regard to the question actually being posed.

There will always be a number of longer questions on this paper that have a levelled response mark scheme. Candidates must be able to use the stimulus material (if applicable) if they are to access the higher grades with ease, rather than repeat pre-learnt generic responses.

Examiner's Report

Question One: This question required candidates to label muscle groups on an individual performing a resistance training exercise (squat) and then apply their knowledge of muscle groups. Candidates also had to describe how resistance training can be used to improve strength and muscular endurance.

Q1(a) ii Responses to this question were better than the previous two series, with many candidates achieving 3 or more marks out of a possible 4. It was clear from candidates' responses that they were familiar with different types of contraction (concentric, isometric and eccentric) and the different roles that muscle groups may perform during activity (prime mover/agonist, fixator, synergist) and that many could apply this knowledge to the stimulus material.

Q1(b)i Most candidates could accurately describe how resistance training can be used to develop strength, referring to resistance and repetitions accurately. Some candidates described how resistance training leads to adaptations that facilitate increases in strength, this was acceptable.

Q1(b)ii Most candidates could accurately describe how resistance training can be used to develop muscular endurance, referring to resistance and repetitions accurately. Some candidates described how resistance training leads to adaptations that facilitate increases in muscular endurance, this was acceptable.

Q1(b)iii Most candidates were able to simply describe that muscles became bigger and stronger. Better responses described the process of hypertrophy. In the majority of responses, candidates focused solely on the response of skeletal muscle and didn't mention the effects on bone or connective tissue.

Question Two: This question required candidates to describe how the structures of the respiratory system work to change air pressure within the thoracic cavity during breathing.

Q2 Many candidates answered this question effectively. Candidates were aware of the role that structures such as diaphragm and muscles play in increasing and decreasing the volume of the thoracic cavity.

Question Three: This question required candidates to demonstrate a knowledge of testosterone and its effects on performance.

Q3a Nearly every candidate successfully identified the graph showed that testosterone levels decline with age in adult males.

Q3b Most candidates were able to describe what testosterone is and describe at least one of its effects.

Q3c Most candidates were able to access some marks by briefly describing one or two ways in which testosterone levels would influence performance, typically talking about increased size and strength. However, those

candidates scoring lowly failed to really develop their response to include a description of how increased size or strength could improve performance. Many candidates also failed to describe the influence on levels of aggression and how might influence performance. Few candidates described the link between testosterone levels and the ability to train and recover after training and/or competition.

Question Four: This question required candidates to demonstrate a knowledge of the effects of centre of gravity on performance and apply it to the stimulus material.

Q4a This required candidates to describe how the athlete's body position had influenced the position of his centre of gravity. A significant number of candidates were unable to describe how the position of his body had determined the position of his centre of gravity.

Q4b This question required candidates to describe how the fact that the athlete's centre of gravity was outside of his base of support, affected his ability to change direction. Many candidates were unable to do this.

Question Five: This question required candidates to explain the training methods that an athlete could use to prepare for a charity walk. Candidates were required to apply their knowledge of training methods to the scenario in the stimulus material. This was a levelled response question.

Q5 The responses to this question were varied with responses in all three mark bands. Weaker responses (MB1) merely described that a heat chamber or heat acclimatisation camp, could be used to prepare for the hot conditions. Similarly, MB1 responses typically stated that a hypoxic chamber or altitude training could be used to prepare for the altitude. Some responses described general endurance training that could be used to prepare, but these responses did not receive credit, as they were not specific to the environmental conditions in the stimulus. Better responses (MB2) included an explanation of how the training method worked and some explanation of how its use would lead to improved performance. Where candidates achieved MB3, there was a detailed explanation of the adaptations that would occur through the use of the training methods, and how the adaptations could lead to improved performance.

Question Six: This question required candidates to evaluate the use of quantitative and qualitative methods by coaches to improve performance. This was a levelled response question.

Q6 Responses to this question were generally poor. Many candidates seemed unclear about the use of qualitative coaching methods and many responses were almost entirely focused on objective methods. Most responses also failed to be evaluative, with candidates merely describing different methods. To access MB3, candidates' responses were expected to

evaluate when specific methods might be particularly useful or the advantages and disadvantages of different methods.

Question Seven: This question required candidates to evaluate how the use of technology has led to improved performance in a sport of the candidate's choice. This was a levelled response question.

Q7 Candidates generally performed well on this question, and many responses achieved marks bands 2 and 3. Those responses that only achieved MB1 described in very simple or general terms how performance had been improved, and there was little explanation of how different technologies have actually allowed or facilitated improved performance. MB2 responses used specific examples of how technology has improved performance with clear explanation of how performance is improved (e.g. increased power, reduced air resistance etc.). MB3 responses included technical detail of how the technology worked. For example, when explaining air resistance, some candidates explained how turbulent flow could be reduced by cycling helmets and how this reduction leads to increased speed or reduced work.

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