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**PHYSICAL EDUCATION**

**9396/11**

Paper 1

**October/November 2017**

**2 hours 30 minutes**

No Additional Materials are required.

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**READ THESE INSTRUCTIONS FIRST**

An answer booklet is provided inside this question paper. You should follow the instructions on the front cover of the answer booklet. If you need additional answer paper ask the invigilator for a continuation booklet.

Answer **all** questions.

Electronic calculators may be used.

You may lose marks if you do not show your working or if you do not use appropriate units.

The number of marks is given in brackets [ ] at the end of each question or part question.

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This document consists of **5** printed pages, **3** blank pages and **1** Insert.

Answer **all** questions.

**Section A: Applied anatomy and physiology**

- 1 (a) Muscles often work in antagonistic pairs.

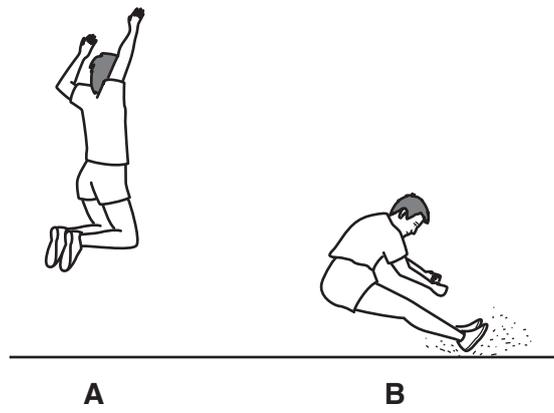
Using the elbow joint as an example, explain the term *antagonistic pair*. [4]

- (b) There are different types of muscle contractions.

(i) Distinguish between isokinetic and isometric muscle contractions. [1]

(ii) Distinguish between concentric and eccentric muscle contractions. [1]

- (c) The diagram shows a performer completing the long jump.



Identify the items 1 to 5 in the table to describe a movement analysis of the hip and shoulder joints from position **A** to the finishing position **B**. Your analysis should include the type of muscle contraction, the type of movement occurring and the main agonist.

	type of muscle contraction	type of movement occurring	main agonist
hip joint	1	2	3
shoulder joint		4	5

[5]

- (d) The physical demands of exercise are met by increasing blood flow to some areas of the body.

(i) Define the terms *cardiac output* and *stroke volume*, and state the relationship between them. [3]

(ii) State the effects of training on resting cardiac output and stroke volume. [2]

(iii) During a sustained period of exercise a trained performer's stroke volume will increase.

Explain how this increase is achieved. [4]

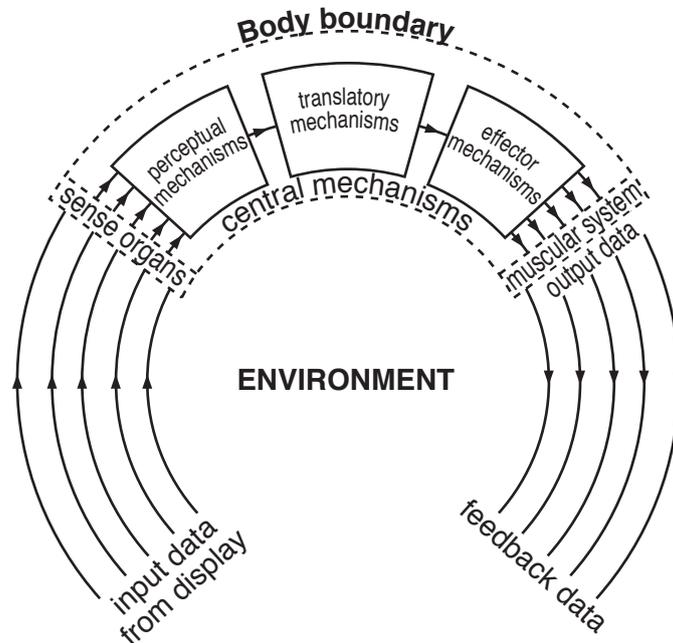
- (e) Describe how oxygen and carbon dioxide are transported by the blood. [3]

- (f) When exercising, the respiratory system plays an important role in the gaseous exchange process.
- (i) Describe the changes that occur to the mechanics of breathing during exercise. [3]
- (ii) Describe the effects of long-term endurance training that help make the gaseous exchange process more efficient. [4]

[Total: 30]

### Section B: Acquiring, developing and performing movement skills

- 2 (a) Explain, using suitable examples for each, the terms: *open skill*, *serial skill*, *complex skill* and *high organisation skill*. [4]
- (b) (i) Define the term *ability*. [1]
- (ii) Give an example of a gross motor ability and an example of a psychomotor ability used in sports-specific movements. [2]
- (c) Performers often have to complete a variety of skills.
- Using a practical example, explain the term *executive motor programme*. [4]
- (d) Describe schema theory in relation to modifying a motor programme. [6]
- (e) The diagram shows an example of an information processing model.



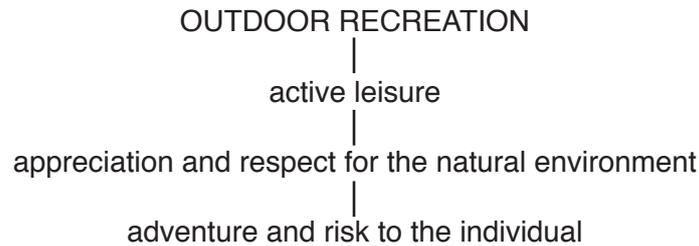
Explain the different stages of perceptual mechanisms, translatory mechanisms and effector mechanisms when learning or performing a movement skill. [6]

- (f) Feedback can be an important aspect of the learning of movement skills.
- (i) Identify **three** main functions of feedback in the learning of movement skills. [3]
- (ii) Using examples, explain the terms *knowledge of performance* and *knowledge of results* in the learning of movement skills. [4]

[Total: 30]

### Section C: Contemporary studies in physical education and sport

- 3 (a) The diagram illustrates three of the characteristics of outdoor recreation.



- (i) Explain the meaning of the terms:  
 • *active leisure*,  
 • *adventure and risk*. [4]
- (ii) Identify factors that have allowed outdoor recreational activities to be more readily available to people with disabilities. [4]
- (b) (i) Describe what is meant by the term *elite performer*. [2]
- (ii) Suggest what provision an elite performer requires in order to achieve high levels of performance in their chosen sport. [5]
- (c) Describe how organisations such as national governing bodies can encourage mass participation in their sport. [6]
- (d) (i) Suggest possible causes of violent play by players during a sporting event. [5]
- (ii) Describe strategies that national governing bodies have used to attempt to reduce player violence. [4]

[Total: 30]





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