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**PHYSICAL EDUCATION**

**9396/12**

Paper 1

**October/November 2016**

**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.



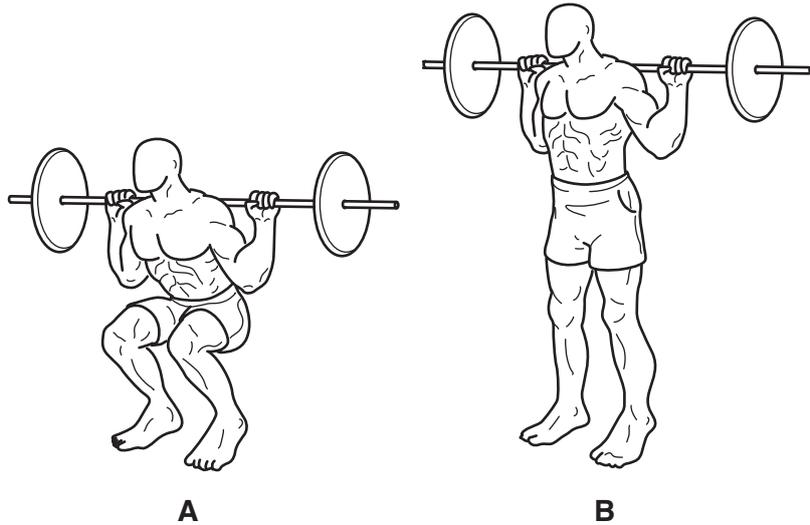
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This document consists of **4** printed pages and **1** insert.

Answer **all** questions.

**Section A: Applied anatomy and physiology**

- 1 (a) Identify **four** types of movement that can take place at the hip joint. [2]
- (b) Identify the items 1–5 in the table below to describe a movement analysis of the upward phase of a squat from position **A** to position **B** (Fig. 1.1) for both the **knee** and the **hip** joints. Your analysis should include the type of muscle contraction, the movement occurring and the main agonist muscles. [5]



**Fig. 1.1**

	type of muscle contraction	movement occurring	agonist muscle(s)
<b>knee joint</b>	1		2 and 3
<b>hip joint</b>		4	5

- (c) (i) Describe the cardiac cycle of the heart. [4]
- (ii) How does the cycle change as heart rate increases? [2]
- (d) Pocket valves in veins assist venous return. Name and describe **two** other mechanisms that assist venous return during exercise. [4]
- (e) During exercise a large proportion of the blood leaving the heart is redistributed to the working muscles through the vascular shunt mechanism. Explain how this is achieved. [4]
- (f) (i) Explain how the structure of the bronchi aids the functions of the respiratory system. [4]
- (ii) Identify and explain the neural and chemical factors that control the respiratory rate of a performer during exercise. [5]

[Total: 30]

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

- 2 (a) Skills are classified by their placement on a continuum.

Using a practical example for each, explain the terms *simple skill* and *complex skill*. [4]

- (b) During a match, games players receive different forms of reinforcement.

(i) Explain the terms *negative reinforcement* and *punishment*, giving examples of each from a team game. [4]

(ii) Using examples, explain how a coach could use positive reinforcement to improve the performance of their players. [3]

- (iii) Reinforcement is a feature of operant conditioning.

Which other methods may be used by a coach to allow a performer to learn through operant conditioning? [3]

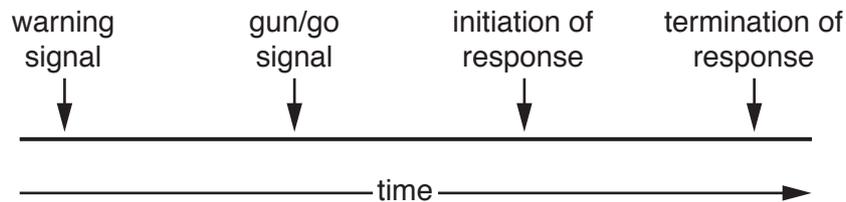
- (c) Using a suitable example, explain what is meant by closed loop control when performing movements. [4]

- (d) Schema theory was proposed by Schmidt to explain the learning of motor skills.

Explain what schema are and describe the components of Schmidt's theory. [5]

- (e) Describe the role of perception during information processing when performing a motor skill. [3]

- (f) Fig. 2.1 shows the various stages that occur before, during and at the end of a sprint start.



**Fig. 2.1**

Explain the terms *movement time* and *reaction time*, giving examples of each in relation to the performance of the sprint start. [4]

[Total: 30]

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

- 3 (a) Hill walking is an example of an outdoor recreation activity.

What are the benefits to an individual of participating in outdoor recreation activities? [4]

- (b) Many people think that physical education is just another name for sport that is played in schools.

Outline the differences between sport and physical education. [4]

- (c) (i) State the characteristics of elite sport. [4]

- (ii) Fig. 3.1 shows the sport performance pyramid. Explain the four levels of the sport performance pyramid. [4]



**Fig. 3.1**

- (iii) Describe the personal qualities and social factors needed for a performer to stay at the elite level. [5]
- (d) Outline the possible barriers to participation in sport for people with disabilities. [5]
- (e) Suggest possible reasons why an elite performer may show dysfunctional behaviour. [4]

[Total: 30]

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