

**ADVANCED GCE****PHYSICAL EDUCATION****2566**

Exercise and Sport Physiology and the Integration of Knowledge of Principles and Concepts Across Different Areas of Physical Education

Candidates answer on the Answer Booklet

OCR Supplied Materials:

- 8 page Answer Booklet

Other Materials Required:

None

Wednesday 23 June 2010
Morning

Duration: 1 hour 30 minutes

**INSTRUCTIONS TO CANDIDATES**

- Write your name clearly in capital letters, your Centre Number and Candidate Number in the spaces provided on the Answer Booklet.
- Use black ink. Pencil may be used for graphs and diagrams only.
- Read each question carefully and make sure that you know what you have to do before starting your answer.
- There are two sections in this paper.
- Answer the compulsory questions in Section A and **one** question from Section B.
- Do **not** write in the bar codes.

INFORMATION FOR CANDIDATES

- The number of marks is given in brackets [] at the end of each question or part question.
- The total number of marks for this paper is **60**.
- You are advised to spend no longer than 30 minutes on Section A.
- There is a total of 45 marks available in Section B.
 - 26 marks will be available for knowledge content, 19 marks are available for your ability to critically analyse and link your knowledge across different areas of PE, making connections between them and practical performance. The quality of written communication will also be taken into account.
 - Your answers should be in continuous prose and you are advised to link the two parts of the question you have chosen.
 - You are advised to spend no longer than one hour on Section B.
- This document consists of **8** pages. Any blank pages are indicated.

Section A

Answer the question in this section.

You are advised to spend no longer than 30 minutes on this section.

Exercise and Sport Physiology

- 1 (a) (i) Define two components of fitness that are important to a 100m sprinter. [2]
- (ii) What is meant by the term specificity? How does a 100m sprinter use specificity in their training programme? [3]
- (b) Use your knowledge of ATP/PC systems to explain what is meant by a coupled reaction. [4]
- (c) Identify and explain three physiological adaptations that take place after a strength training programme. [6]

[Total: 15 marks]

Section B

Answer **one** question only, **either** Question 2 (Scientific Focus)
or Question 3 (Socio-cultural Focus)

Question 2 (Scientific Focus)

You must answer from both Part One **and** Part Two.

Part One: answer either (a) or (b).

Either

(a) (Application of Anatomical and Physiological Knowledge to Improve Performance)

Fig. 1 shows a performer carrying out a maximal leg press exercise to improve the strength of their quadriceps.

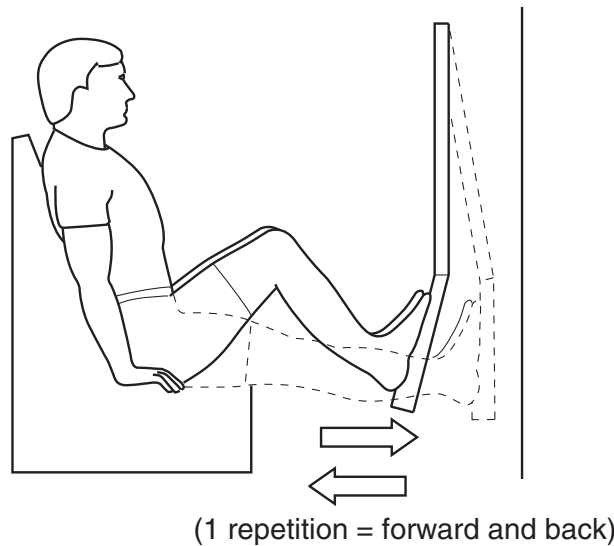


Fig. 1

Describe the anatomy of the knee joint and explain how the muscles surrounding this joint work together to produce one repetition of a **maximal** leg press.

Use your knowledge of Newton's Laws to explain how the performer carries out this exercise.

Or

(b) (Acquiring and Performing Movement Skills)

The memory process enables information that is needed for movement skills to be stored and used when required.

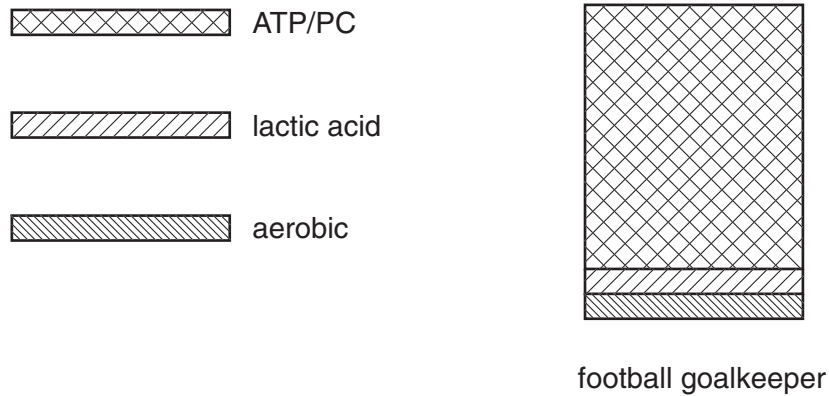
Describe the characteristics of the **short-term** memory process and explain the strategies that could be used to retain information in the **long-term** memory.

The learning of movement skills is often achieved by observing others perform or demonstrate those skills.

Using Bandura's Model of Observational Learning, explain how the effective learning of a movement skill can be achieved.

Part Two: answer either (c) or (d) or (e)**Either****(c) (Exercise and Sport Physiology)**

Fig. 2 represents the energy systems used by a goalkeeper in football.

**Fig. 2**

Sketch a similar model to show the energy systems used by a team player, other than a goalkeeper, in a team game of your choice. Using examples from a match situation, explain when and why your chosen performer uses each of the three energy systems.

After a match, a player needs time to recover to enable their body to return to its pre-exercise state.

Outline the physiological processes that occur during the recovery process.

Or**(d) (Biochemical Analysis of Human Movement)**

The concept of Centre of Mass is very important for the successful performance of many techniques in sport.

Explain how performers manipulate the position of their Centre of Mass at take off **and** during flight.

Describe the role of the Second Class Lever system at take off.

Or

(e) (Psychology of Sport Performance)

The performance of a sports team is affected by each team member's motivation and effort as well as good leadership.

What is social loafing when related to team performance and how is it caused?

Explain how you might improve the cohesiveness of a sports team.

Describe Fiedler's Contingency Model of Leadership and explain the situations in which you might use the task style and person-orientated style of leadership in sport.

[Total: 45 marks]

Question 3 (Socio-cultural Focus)

You must answer from Part One **and** Part Two.

Part One**(a) (Contemporary Studies in Physical Education)**

Although opportunities for sports participation should be available to all, in reality not everyone can take part in sport or in the sport of their choice.

Explain different factors that might affect an individual's opportunity to take part in regular sport or physical recreation in the UK.

Part Two: Answer either (b) or (c)**Either****(b) (Historical Studies in Physical Education)**

Compare the characteristics of popular recreations in pre-industrial Britain with the characteristics of rational recreations in post-industrial Britain.

Explain why the changes from popular to rational recreation occurred.

Discuss the influence of social class on participation in sports and pastimes in both pre-industrial and post-industrial Britain.

Or**(c) (Comparative Studies in Physical Education)**

Outline the strategies used in the USA to increase mass participation in physical activities.

Compare the promotion of mass participation in the UK with either France or Australia. Your comparisons should include strategies and environmental influences.

[Total: 45 marks]

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