

**ADVANCED SUBSIDIARY GCE
 PHYSICAL EDUCATION**

2562

The Application of Physiological and Psychological Knowledge to Improve Performance

MONDAY 21 JANUARY 2008

Afternoon

Time: 1 hour 30 minutes

Candidates answer on the question paper

Additional materials: No additional materials are required



Candidate
Forename

Candidate
Surname

Centre
Number

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Candidate
Number

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INSTRUCTIONS TO CANDIDATES

- Write your name in capital letters, your Centre Number and Candidate Number in the boxes above.
- Use blue or 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.
- Answer **all** the questions.
- Do **not** write in the bar codes.
- Do **not** write outside the box bordering each page.
- Write your answer to each question in the space provided.
- Additional answer space is available on the lined pages at the back of this booklet. Answers on these pages **must** be clearly numbered.

INFORMATION FOR CANDIDATES

- The number of marks for each question is given in brackets [] at the end of each question or part question.
- The total number of marks for this paper is **60**.

FOR EXAMINER'S USE

1	
2	
3	
4	
TOTAL	

This document consists of **10** printed pages and **2** lined pages.

Section A

Application of Anatomical and Physiological Knowledge to Improve Performance

1 (a) Fig. 1 shows an athlete in a 110m hurdles race.

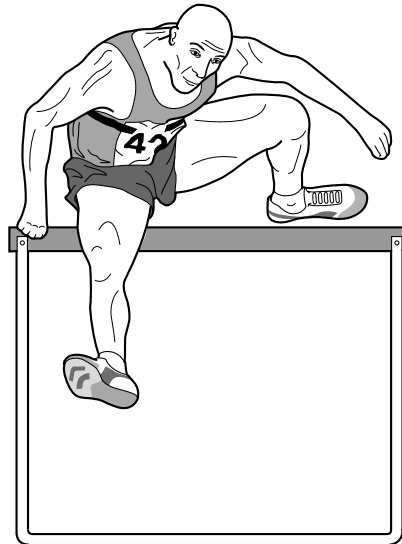


Fig. 1

(i) Complete the joint analysis table below for the athlete's left (trailing) leg. [5]

Joint	Joint Type	Articulating Bones	Movement	Agonist	Antagonist
Left Knee (Trailing)		Femur and Tibia			Rectus Femoris
Left Ankle (Trailing)	Hinge		Dorsi Flexion	Tibialis Anterior	

(ii) Give **one** exercise that could be used to strengthen the rectus femoris and **one** exercise to strengthen the tibialis anterior.

Rectus Femoris

Exercise
 [1]

Tibialis Anterior

Exercise
 [1]

2 (a) Fig. 2 shows the lung volumes of a performer at rest.

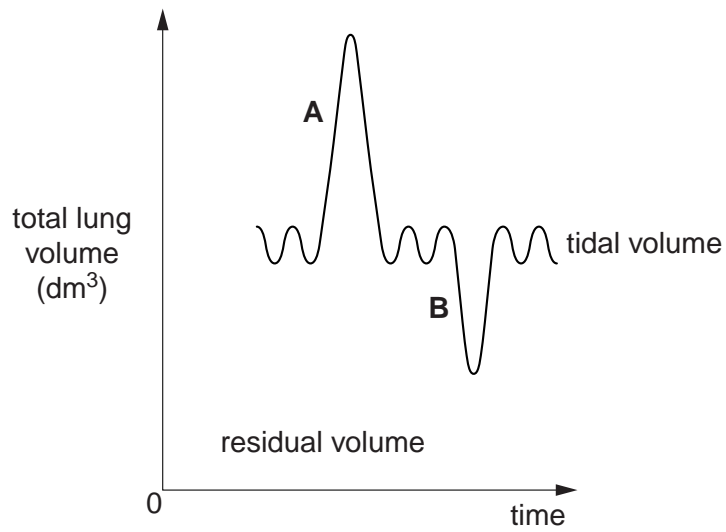


Fig. 2

(i) Name the **two** lung volumes marked **A** and **B**.

A

B [2]

(ii) Describe tidal volume. What would you expect to happen to tidal volume during exercise?

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 [2]

(c) Describe how intrinsic control affects the cardiac output of a performer during exercise.

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..... [4]

(d) Describe how the conduction system of the heart controls the cardiac cycle.

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..... [3]

[Total: 15]

Section B

Acquiring and Performing Movement Skills

3 (a) (i) A skilful performance is fluent and follows a technical model.

Identify **two** other characteristics of skilful performance and give a practical example for **one** of them.

Characteristic 1;

.....

Characteristic 2 (with example);

.....

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..... [3]

(ii) Practical skills can be classified on the environmental influence continuum as being either open or closed.

Use a practical example to explain what is meant by an open skill.

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..... [3]

(b) (i) Selective attention is a feature of information processing.

What is selective attention and why is it important to the short term memory?

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..... [3]

(ii) What strategies can be used to ensure that information is retained and easily retrieved from the long term memory?

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..... [3]

(c) Reaction time can be influenced by the psychological refractory period.

Use a practical example to explain the psychological refractory period.

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..... [3]

[Total: 15]

4 (a) Feedback plays an important part in the learning and performance of movement skills.

Use practical examples to explain both intrinsic and extrinsic feedback.

Intrinsic;

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Extrinsic;

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..... [4]

(b) Use a practical example and Fig. 4 below to explain the Inverted U theory of arousal.

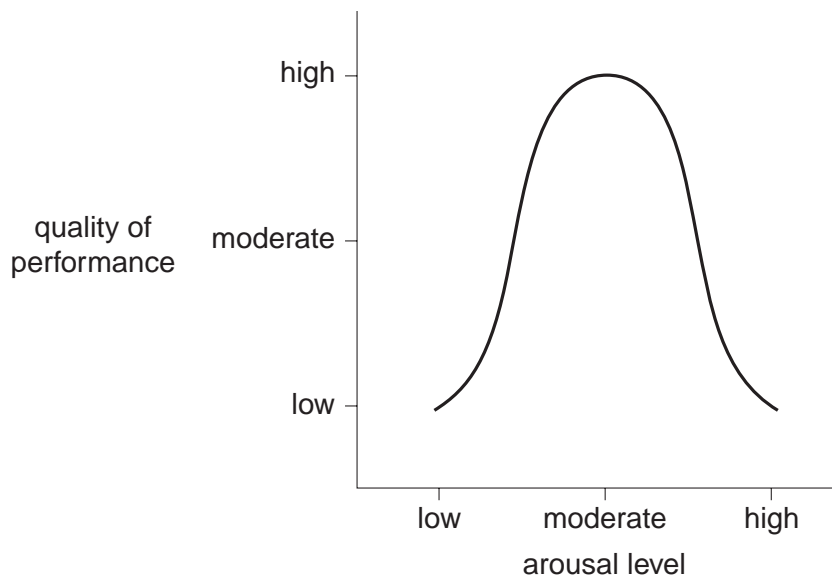


Fig. 4

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..... [3]

(c) (i) Movement can be controlled by motor programmes.

What is a motor programme?

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..... [2]

(ii) Use a practical example to explain what is meant by open loop motor control.

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..... [3]

(iii) Schema can be used as a way of modifying a motor programme. Two of the sources of information in a schema come from the initial conditions and the response specifications.

Use a practical example to explain what is meant by the initial conditions and the response specifications.

Initial conditions;

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.....

Response specifications;

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..... [2]

(iv) Why is variability of practice important to the development of schema?

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..... [1]

[Total: 15]

