

OXFORD CAMBRIDGE AND RSA EXAMINATIONS
Advanced Subsidiary GCE
PHYSICAL EDUCATION



2562

The Application of Physiological and Psychological Knowledge to Improve Performance

Thursday **25 MAY 2006** Morning 1 hour 30 minutes

Additional materials:
None

Candidate Name

Centre Number

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Candidate Number

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TIME 1 hour 30 minutes

INSTRUCTIONS TO CANDIDATES

- Write your name, Centre number and Candidate number in the boxes above.
- Answer **all** questions.
Two questions from Section A (Application of Anatomical and Physiological Knowledge to Improve Performance).
Two questions from Section B (Acquiring and Performing Movement Skills).
- Write your answers, in blue or black ink, in the spaces provided on the question paper.
- Read each question carefully and make sure you know what you have to do before starting your answer.
- Do not write in the bar code. Do not write in the grey area between the pages.
- **DO NOT WRITE IN THE AREA OUTSIDE THE BOX BORDERING EACH PAGE. ANY WRITING IN THIS AREA WILL NOT BE MARKED.**

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.

FOR EXAMINER'S USE	
1	
2	
3	
4	
TOTAL	

This question paper consists of 11 printed pages and 1 blank page.

Application of Anatomical and Physiological Knowledge to Improve Performance

- 1 (a) Figure 1 below shows an athlete during the take off phase of the long jump.

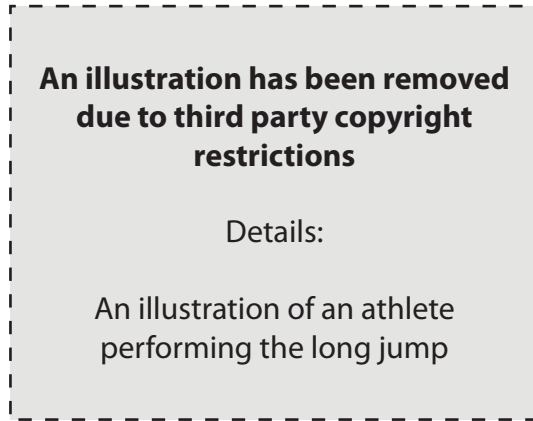


Fig. 1

- (i) Complete the joint analysis below.

Knee joint during extension:

Type of joint:

Articulating bones:

Agonist:

Ankle joint during plantar flexion:

Type of joint:

Agonist: [5]

- (ii) The long jumper would use fast glycolytic fibre type (IIb) during the take off phase. Identify two reasons why this fibre type would be used.

Reason 1

Reason 2 [2]

- (b) Complete the table below, giving an exercise which could be used to strengthen each of the muscles.

Muscle	Exercise
Pectoralis Major	1.
Rectus Abdominus	2.
Bicep Brachii	3.

[3]

- (c) Figure 2 below shows the position of the centre of mass whilst holding a balance. Describe how the position of the centre of mass can affect a balance.



Fig. 2

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..... [3]

- (d) One change to the vascular system during a warm up is the ability of the haemoglobin to release oxygen quicker. Identify two other changes to the vascular system during a warm up.

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..... [2]

[Total: 15]

[Turn over

(iii) During the training run blood needs to be diverted away from non-essential organs to the working muscles. Explain how the vasomotor centre controls this distribution.

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..... [3]

(iv) Describe the mechanisms of breathing which allow the runner to breathe in (inspiration) greater volumes of oxygen during the run.

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..... [3]

(v) Explain how the respiratory centre uses neural control to produce changes in the mechanics of breathing.

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..... [2]

[Total: 15]

[Turn over

Section B

Acquiring and Performing Movement Skills

3 (a) Movement skills can be classified in a number of ways.

(i) Use practical examples to explain each of the three points on the continuity continuum.

- 1.
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- 2.
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- 3.
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..... [3]

(ii) Give **two** characteristics of an open skill.

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- [2]

(b) Drive reduction is one method that can be used to motivate a performer in Physical Education or sport.

Use a practical example to explain Drive Reduction Theory.

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(c) The transfer of learning can have a positive effect on the performance of skills in Physical Education or sport.

(i) What is transfer of learning in Physical Education or sport?

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..... [1]

(ii) Use a practical example to explain bi-lateral transfer.

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(iii) How can a teacher/coach ensure that positive transfer occurs?

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..... [3]

[Total: 15]

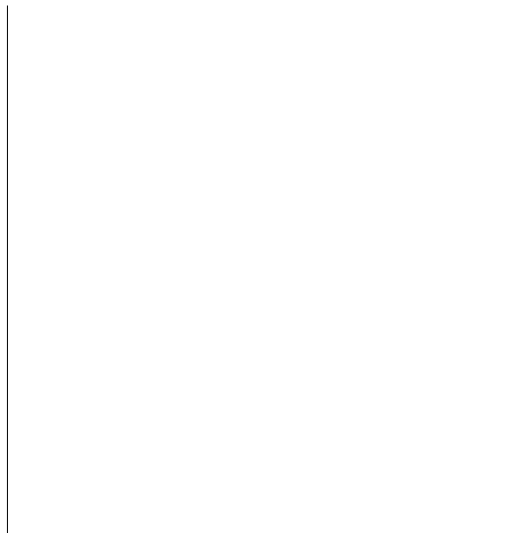
4 (a) Reaction time in sport can affect how efficiently a performer completes a physical task.

(i) Explain what is meant by simple reaction time and give a practical example of simple reaction time in sport.

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..... [2]

(ii) Choice reaction time (Hick's Law) can be explained through the use of a graph.

Sketch a graph to illustrate the effect of choice reaction time on physical performance.



[3]

(iii) Give an example of choice reaction time from Physical Education or sport.

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..... [1]

(b) The strength of the S-R bond can affect how well a movement skill is learned.

(i) Explain what is meant by the term 'S-R bond'.

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(ii) Thorndike suggested three methods (Thorndike's Laws) to strengthen the S-R bond. Use a practical example to explain each of these methods.

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(c) Practice can be massed or distributed.

What is distributed practice, when might it be used and what are the advantages of this type of practice?

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..... [5]

[Total: 15]

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