

**OXFORD CAMBRIDGE AND RSA EXAMINATIONS  
A2 GCE  
G453/01  
PHYSICAL EDUCATION  
Principles and Concepts Across  
Different Areas of Physical Education  
FRIDAY 16 JUNE 2017:  
Morning  
DURATION: 2 hours 30 minutes  
plus your additional time allowance  
MODIFIED ENLARGED 24pt**

**Candidates answer on the Answer Booklet.**

**OCR SUPPLIED MATERIALS:**

**12 page Answer Booklet (OCR12)  
(sent with general stationery)**

**OTHER MATERIALS REQUIRED:**

**Calculators may be used**

<p><b>A CALCULATOR MAY BE USED FOR THIS PAPER</b></p>
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**READ INSTRUCTIONS OVERLEAF**



## **INSTRUCTIONS TO CANDIDATES**

**Write your name, centre number and candidate number in the spaces provided on the Answer Booklet. Please write clearly and in capital letters.**

**Use black ink. HB pencil may be used for graphs and diagrams only.**

**Answer THREE questions, at least one of which must be from Section A.**

**Read each question carefully. Make sure you know what you have to do before starting your answer.**

## **INFORMATION FOR CANDIDATES**

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

**The quality of your written communication will be assessed in questions marked with an asterisk (\*).**

**The total number of marks for this paper is 105.**

**Any blank pages are indicated.**

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## **SECTION A**

**Candidates must answer at least one question from Section A.**

### **Historical Studies (Option A1)**

- 1 (a) Describe the objectives and methodology of the 1902 Model Course, and the role of Colonel Malcolm Fox in its implementation. [5]**
- (b) Explain the social and cultural factors that influenced the nature and development of popular recreation. [5]**
- (c) Dr Thomas Arnold was Headmaster of Rugby School from 1828 until his death in 1842.**

**Explain the impact of Dr Arnold as the school's reforming Headmaster. [5]**

- (d)\* Describe the factors that have helped in the development of cricket in the UK and evaluate the impact of these factors on contemporary participation in cricket. [20]**

## **SECTION A**

### **Comparative Studies (Option A2)**

- 2 (a) Outline the structure and function of the Australian Institute of Sport (AIS). [5]**
- (b) Explain how social and cultural values in Australia influence mass participation in sport among young people. Compare how ONE of these values influences mass participation in sport among young people in the UK. [5]**
- (c) Explain how the history of the USA has impacted on the development of sports in that country. Discuss how the history of the development of sport in the UK differs from the USA. [5]**
- (d)\* For most elite sports performers in the USA the pathway to excellence begins in the college system.**

**Describe how the college system in the USA promotes sporting excellence and compare this system with the pathways to excellence which exist in sport in the UK. [20]**

## **SECTION B**

### **Sports Psychology (Option B1)**

- 3 (a) Describe the following attentional styles used by sports performers:**

**Broad external  
Narrow internal.**

**Give ONE practical example of a sports performer using a narrow external attentional style. [5]**

- (b) Describe the characteristics of an effective leader in sport and explain the difference between an emergent leader and a prescribed leader in sport. [5]**

- (c) Explain how group negative influences can result in group members adopting dysfunctional lifestyle behaviour. [5]**

- (d)\* Attribution can affect the levels of motivation in sports performers.**

**Outline Weiner's Attribution model and use practical examples to evaluate the different types of attribution that affect motivation in sports performers. [20]**

## **SECTION B**

### **Biomechanics (Option B2)**

- 4 (a) The angular velocity of a trampolinist performing a back somersault changes from  $5 \text{ rads s}^{-1}$  to  $15 \text{ rads s}^{-1}$  in 0.2 seconds.**
- (i) Calculate the trampolinist's average angular acceleration during the 0.2 seconds. [2]**
- (ii) Explain how this angular acceleration occurs during the somersault. [3]**
- (b) Explain how the Bernoulli principle can be applied to the flight path of a javelin. [5]**
- (c) Explain what is meant by 'streamlining' and describe how a swimmer might achieve streamlining. [5]**
- (d)\* Using Newton's Laws of Motion, explain the effects of the resultant vertical force acting on a high jumper at take-off.**

**Sketch a free body diagram showing the forces acting on a high jumper during flight and describe their effect on the flight path.**

**Explain why the 'Fosbury Flop' is the preferred technique for modern day high jumpers and how the use of the safety bed has influenced this preference. [20]**

## **SECTION B**

### **Exercise and Sport Physiology (Option B3)**

**5 (a) Define the terms energy, work and power.**

**Explain why ATP plays such an important role during physical activity. [5]**

**(b) Within the first few minutes following exercise, explain how the body starts the recovery process. [5]**

**(c) A weight lifter has been training to improve maximum strength for eight weeks.**

**Define maximum strength.**

**Explain the physiological adaptations that the weight lifter would expect to take place following the eight week training period. [5]**

**(d)\* A football player uses all the different energy systems to resynthesise ATP during a game.**

**Critically evaluate the energy systems that the footballer would use to resynthesise ATP during the game.**

**Explain the factors that might affect when each energy system is used by the footballer. [20]**

**END OF QUESTION PAPER**

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