

**OXFORD CAMBRIDGE AND RSA EXAMINATIONS**  
**A2 GCE**  
**G453/01**

**PHYSICAL EDUCATION**  
**Principles and Concepts Across**  
**Different Areas of Physical Education**

**THURSDAY 11 JUNE 2015: Morning**

**DURATION: 2 hours 30 minutes**  
**plus your additional time allowance**

**MODIFIED ENLARGED**

**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 that are indicated accordingly (\*).**

**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) Outline the objectives of the 1933 Syllabus of physical training for state schools.**

**State ONE reason why the 1933 Syllabus was replaced in the 1950s. [4]**

- (b) Outline different types of activities associated with rural pre-industrial community sports festivals.**

**State ONE pre-industrial activity that was taken into the public schools and adapted to a named athletics event. [5]**

- (c) Describe how the technical development and values of football changed from stage one to stage three in nineteenth century public schools. [6]**

- (d)\* Explain how increased free time and improved transport affected the emergence of rational recreations from 1850 to today. [20]**

## **SECTION A**

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

- 2 (a) Outline reasons why Australian Rules Football is so popular in Australia. [5]**
- (b) Outline Australian cultural values that impact on participation in physical activity in Australia. Describe how ONE of these cultural values originates from the country's historical relationship with the UK. [5]**
- (c) Describe strategies to encourage mass participation in physical activity in the USA. Explain why opportunities for mass participation are considered to be fewer in the USA than in the UK. [5]**
- (d)\* Compare how cultural factors impact on excellence in sport in the USA and the UK. [20]**

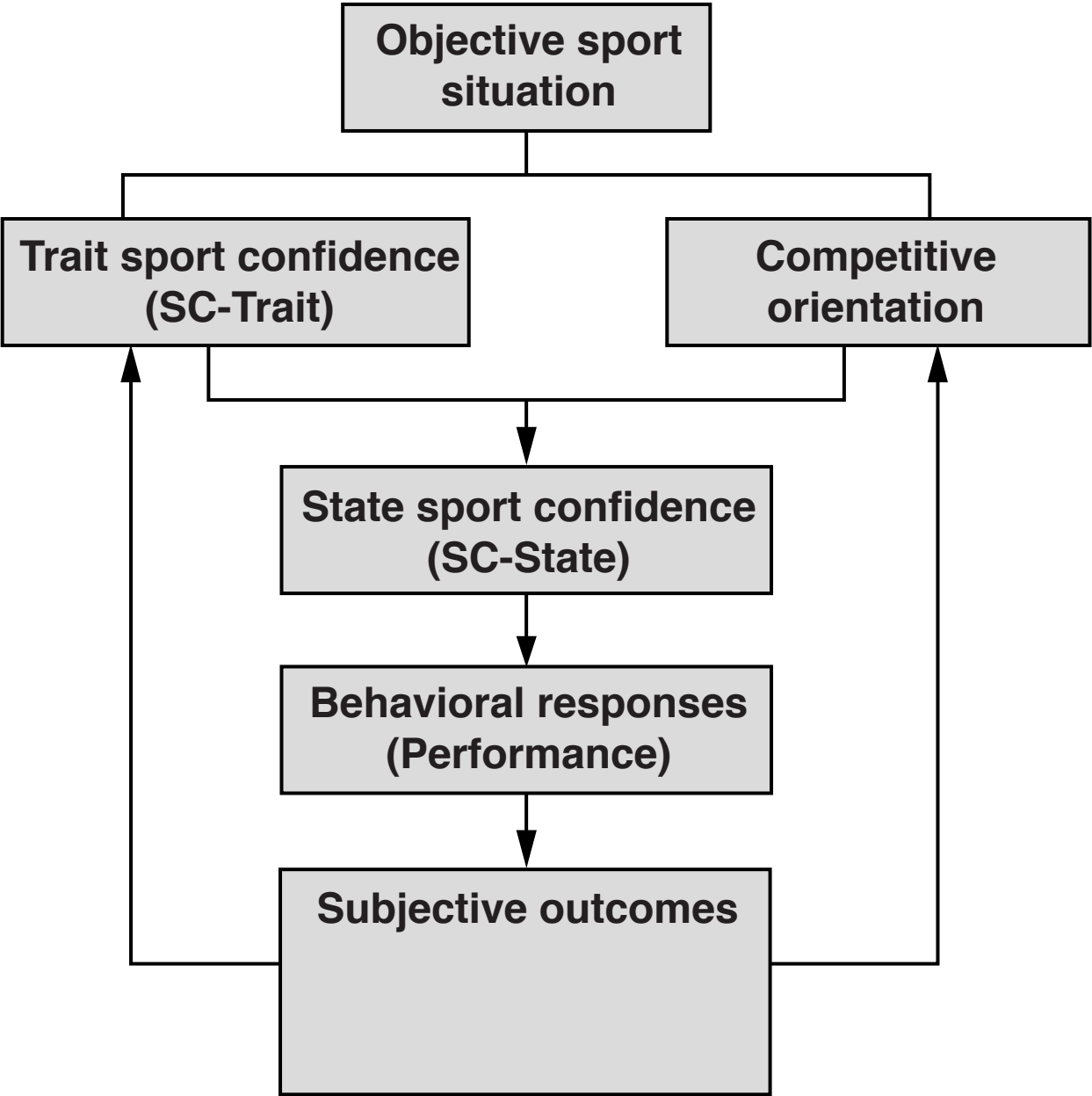
## **SECTION B**

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

- 3 (a) Describe the social learning and interactionist theories of personality. [4]**
- (b) Using practical examples, explain why people adopt different attitudes towards a balanced, active and healthy lifestyle. [5]**
- (c) Using practical examples, describe the possible causes of aggressive behaviour in sport. [6]**
- (d)\* Using ONE example from sport, explain Vealey's model of sport confidence shown in FIG. 1 opposite.**

**Describe the methods that might be used to raise self-efficacy in sports performance. [20]**

**FIG. 1**

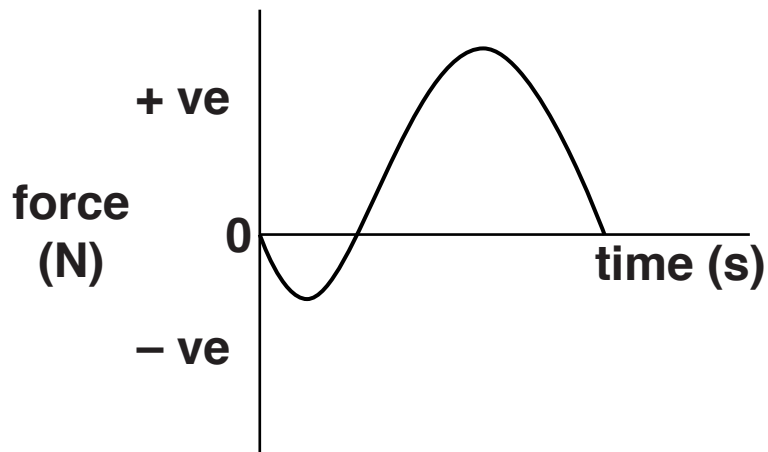


## SECTION B

### Biomechanics (Option B2)

- 4 (a) FIG. 2 shows a force/time graph of a single foot plant during the early stage of a 100 metre sprint.

FIG. 2

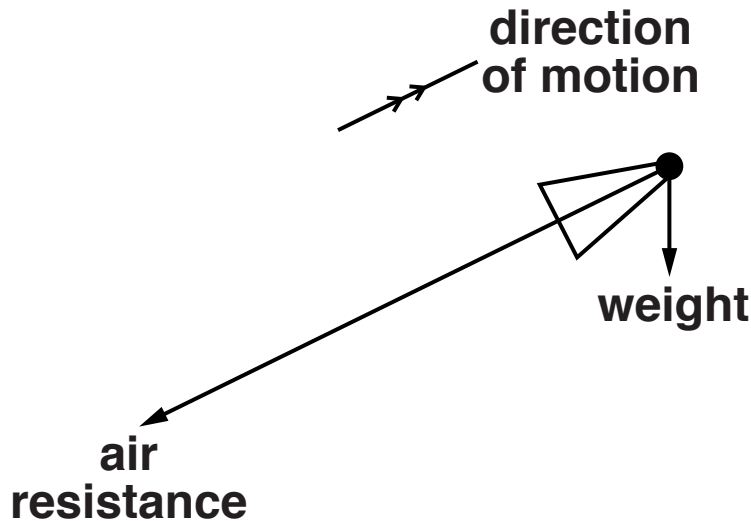


Define impulse and explain the shape of the force/time graph in FIG. 2. [5]



- (b) FIG. 3 shows the forces acting on a fast moving shuttle during flight.

**FIG. 3**



Using the information in FIG. 3, draw a parallelogram of forces diagram to show how to resolve the net force acting on a fast moving shuttle during this phase of its flight. Explain how this net force causes a deviation in the normal flight path of a fast moving shuttle. [5]

- (c) Define moment of inertia and explain the factors that affect the moment of inertia of a rotating body in sport. Explain why a runner has a flexed knee during the recovery phase of the stride action. [5]

**(d)\* FIG. 4 shows the speed of a swimmer at set times after pushing off from the side of a pool at the start of a race.**

**FIG. 4**

<u>Time / secs</u>	<u>Speed / ms<sup>-1</sup></u>
0	0
0.5	3.0
1.0	2.5
1.5	2.0
2.0	2.0
2.5	2.0
3.0	2.0
3.5	2.0
4.0	2.0

**Sketch a graph of speed against time for the swimmer.**

**The mass of the swimmer is 80 kg. For the first 0.5 seconds after pushing off from the side of the pool, calculate:**

**the average acceleration of the swimmer**

**the average net force acting on the swimmer.**

**Use Newton's Laws of Motion to help explain the shape of the graph.**

**Analyse the methods used by performers to minimise air resistance, fluid friction or drag. [20]**

## **SECTION B**

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

**5 (a) Define the term aerobic capacity.**

**Age and gender are two factors that affect  $\text{VO}_2$  max. Identify THREE other factors that affect an individual's  $\text{VO}_2$  max. [4]**

**(b) Describe an interval training session aimed at improving aerobic capacity.**

**Explain how THREE physiological adaptations resulting from interval training contribute to a balanced, active and healthy lifestyle. [6]**

**(c) Discuss the use of RhEPO (recombinant erythropoietin) as a method of enhancing performance. [5]**

**(d)\* Explain factors that affect explosive strength.**

**Devise a six week training programme to improve explosive strength.**

**Explain how the programme would improve health and fitness. [20]**

**END OF QUESTION PAPER**

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