

**Thursday 17 January 2013 – Morning**

**A2 GCE PHYSICAL EDUCATION**

**G453/01** Principles and Concepts Across Different Areas of Physical Education

Candidates answer on the Answer Booklet.

**OCR supplied materials:**

- 16 page Answer Booklet  
(sent with general stationery)

**Other materials required:**

- Calculators may be used

**Duration:** 2 hours 30 minutes



**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.
- 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 quality of your written communication will be assessed in questions that are indicated accordingly (\*).
- The total number of marks for this paper is **105**.
- This document consists of **8** pages. Any blank pages are indicated.



**A calculator may  
be used for this  
paper**

## SECTION A

Candidates must answer at least one question from Section A.

**Historical Studies (Option A1)**

- 1 (a) Pedestrianism was a popular pre-industrial activity. This was followed by the emergence of different forms of athletics in 19th century public schools.

Outline the nature and development of pedestrianism.

Identify **one** form of athletics that then emerged in public schools. [5]

- (b) Compare the characteristics of popular recreation with the characteristics of rational recreation.

Explain how **two** late 19th century socio-cultural factors continue to influence sport and recreation today. [5]

- (c) Explain the development and impact of public baths in urban industrial communities in the 19th century.

State **one** factor that is helping to increase participation in swimming in the UK today. [5]

- (d)\* The 'cult' of athleticism in 19th century public schools involved the development of character and values.

Discuss opportunities for developing character and values in 19th century public schools.

Evaluate ways in which character and values can be developed in schools today. [20]

## SECTION A

## Comparative Studies (Option A2)

- 2 (a) Outline geographical factors that can affect involvement in physical activity in both the USA and in the UK. [5]

- (b) The values of a country impact on physical recreation and sport in that country.

With reference to physical recreation and sport in the USA, explain what is meant by each of the following values:

- Lombardianism
- the counter culture ethic
- the radical ethic.

Describe **two** values associated with physical recreation and sport in the UK. [5]

- (c) Compare how mass participation in sport is promoted in Australia and in the UK. [5]

- (d)\* Compare the development and contemporary status of rugby union in Australia and in the UK.

Evaluate the influence of the Rugby World Cup on the game in both countries. [20]

## SECTION B

## Sports Psychology (Option B1)

- 3 (a) Aggression often impacts upon performance and behaviour in sport.

Using practical examples, describe **four** methods that might be used to eliminate aggressive tendencies in sports performers. [4]

- (b) Explain what is meant by 'state anxiety' **and** 'trait anxiety'.

Give a practical example of how anxiety might influence performance in sport. [5]

- (c) Bandura proposes that self-efficacy can arise from four sources as shown in Fig. 1 below.

## Adaptation of Bandura's model of self-efficacy

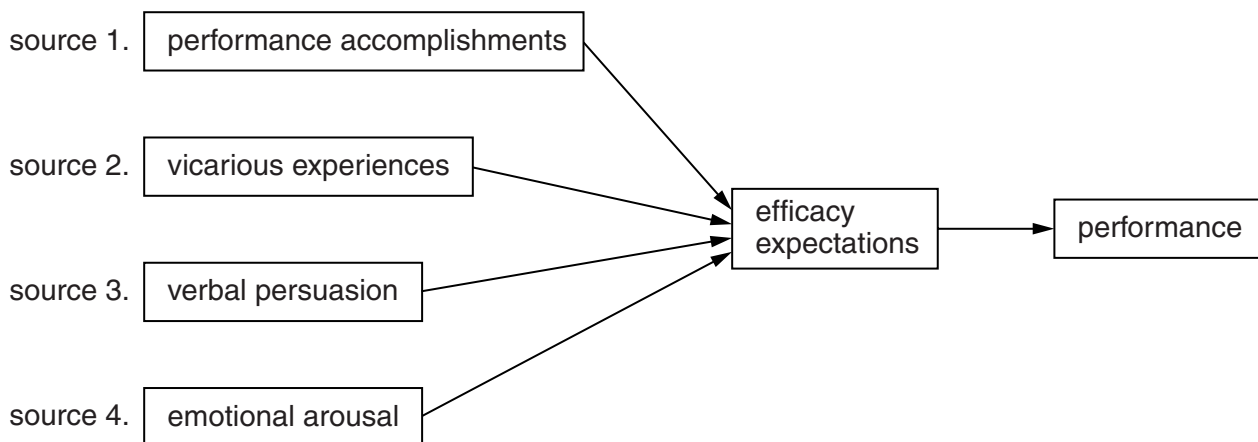


Fig. 1

Using examples from sport, explain how each source can influence performance. [6]

- (d)\* The behaviour of individuals within groups, such as sports teams or friendship groups, can be affected by group dynamics.

Using psychological theories and practical examples, explain why some sports teams seem to be more cohesive and successful than other teams of similar ability.

Explain the negative group influences that can cause individuals to develop dysfunctional behaviour and to avoid a balanced, active and healthy lifestyle. [20]

## SECTION B

## Biomechanics (Option B2)

- 4 (a) A gymnast successfully completes a double somersault.

Define the terms 'angular distance' and 'angular displacement'.

Estimate values for angular distance and angular displacement when the gymnast has completed the double somersault. [4]

- (b) Define the term 'centre of mass'.

Describe how a performer applies an eccentric force to a ball and explain its effect. [5]

- (c) Using Newton's Laws of Motion explain how a sprinter is able to maximise performance during a sprint start.

Draw a free body diagram to show all the forces acting on a sprinter accelerating at the start of a race. [6]

- (d)\* Fig. 2 shows the elbow joint and the position of the triceps brachii when supporting a weight behind the head, as in a throw-in in football. This is an example of a first class lever.

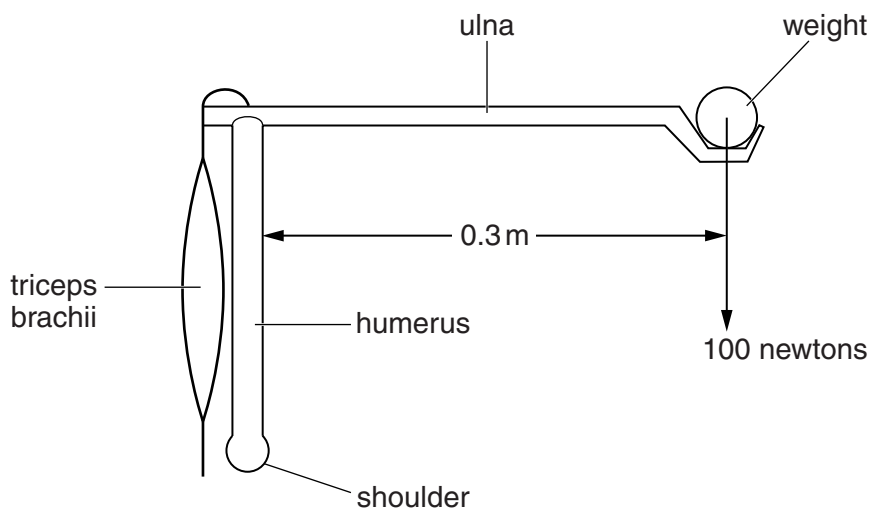


Fig. 2

Explain the components of a first class lever.

Calculate the torque generated by the weight held in the hand.

Using practical examples, critically evaluate the use of the other two types of lever. [20]

## SECTION B

## Exercise and Sport Physiology (Option B3)

- 5 (a) There are several methods of evaluating aerobic capacity such as the multi-stage fitness test and the PWC170 test.

Describe **one** method of measuring aerobic capacity.

Outline **one** advantage and **one** disadvantage of this method. [5]

- (b) Explain the principle of a coupled reaction using the ATP/PC energy system as your example. [4]

- (c) What is meant by gene doping? Critically evaluate the use of gene doping as an ergogenic aid. [6]

- (d)\* State what is meant by the term 'obesity' and describe how it may be measured.

Explain the health implications of being obese and how obesity can affect involvement in physical activity.

Explain how knowledge of energy expenditure and energy intake can help to prevent obesity. [20]

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