



Cambridge International AS & A Level

PHYSICAL EDUCATION

9396/13

Paper 1

May/June 2023

2 hours 30 minutes



You must answer on the enclosed answer booklet.

You will need: Answer booklet (enclosed)

INSTRUCTIONS

- Answer **all** questions.
- Follow the instructions on the front cover of the answer booklet. If you need additional answer paper, ask the invigilator for a continuation booklet.
- You may use a calculator.
- You should show all your working and use appropriate units.

INFORMATION

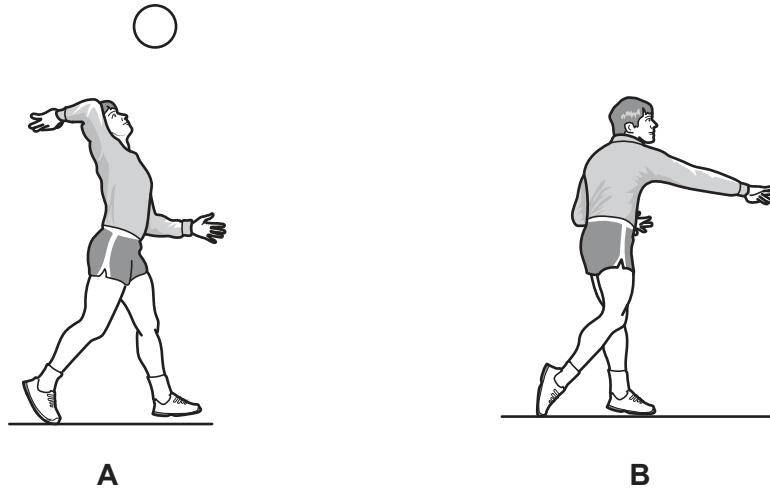
- The total mark for this paper is 90.
- The number of marks for each question or part question is shown in brackets [].

This document has **8** pages. Any blank pages are indicated.

Answer **all** questions.

Section A: Applied anatomy and physiology

- 1 (a) The diagram shows a performance of a volleyball serve.



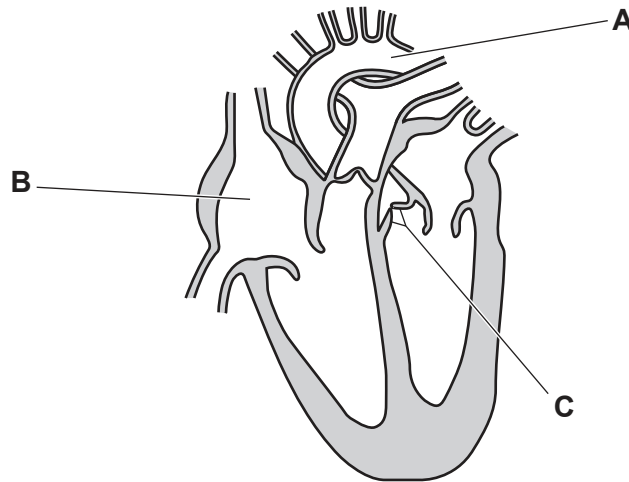
Identify the items 1–5 in the table to describe a movement analysis of the performer's right elbow joint and the performer's right ankle joint from position **A** to position **B**. Your analysis should include the type of movement occurring, the main agonist and the type of muscle contraction.

	type of movement occurring	main agonist	type of muscle contraction
performer's right elbow joint from A to B	1	2	3
performer's right ankle joint from A to B	4	5	

[5]

- (b) State **two** types of movement that are possible at the knee joint. State **two** other types of movement that are possible at the shoulder joint. [2]
- (c) Suggest features of the knee joint that make it more stable than the shoulder joint. [2]

(d) The diagram shows the structure of the heart.



- (i) Identify the structures labelled **A**, **B** and **C**. [3]
- (ii) Explain the role of valves in the heart during the cardiac cycle. [4]
- (e) Describe how intrinsic factors regulate heart rate. [4]
- (f) Explain why the velocity of blood reduces as it travels from the heart to the working muscles. [2]
- (g) (i) Describe how **two** structures of the bronchi assist the functions of the respiratory system. [4]
- (ii) Describe how the pleural membranes assist the functions of the respiratory system. [2]
- (h) Most carbon dioxide is transported in the blood as bicarbonate ions.
Describe **two** other ways carbon dioxide is transported in the blood. [2]

[Total: 30]

Section B: Acquiring, developing and performing movement skills

- 2 (a) Kicking a ball in a team game is a learned sport-specific skill.
Describe the progression from motor abilities to kicking a ball in a team game. [3]
- (b) Outline the benefits of learning skills using operant conditioning. [3]
- (c) In team games, performers complete a variety of skills using motor programmes.
Describe differences between open-loop control of motor programmes and closed-loop control of motor programmes. [4]
- (d) Schema theory involves the modification of motor programmes.
- (i) Explain the features of recognition schema. [3]
- (ii) Suggest how a coach may develop a performer's skills using the principles of schema theory. [3]
- (e) The long-term memory is used in the performance of practical skills.
Describe features of the long-term memory. [4]
- (f) Use examples from **one** named physical activity to describe what is meant by each of the following:
 - concurrent feedback
 - intrinsic feedback
 - negative feedback.
[3]
- (g) Describe each of the following types of transfer of learning:
 - positive
 - proactive
 - bilateral.
[3]
- (h) There are many theories related to arousal levels.
Explain the drive theory of arousal. [4]

[Total: 30]

Section C: Contemporary studies in physical education and sport

- 3 (a)** Children often play for enjoyment and recreation.
Suggest other characteristics and benefits of play. [6]
- (b)** Suggest how the concept of physical recreation differs from the concept of sport. [4]
- (c)** Outline the science support required to develop excellence in sport. [4]
- (d)** Describe the provision of facilities for mass participation by private bodies. [4]
- (e) (i)** Explain why the loss of commercial sponsorship or media deals may lead to major sporting events being cancelled. [4]
- (ii)** Suggest positive influences that increased control by the media may have on sport. [4]
- (f)** Suggest possible causes of violent behaviour by games players during a match. [4]

[Total: 30]

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