



Cambridge International AS & A Level

PHYSICAL EDUCATION

9396/13

Paper 1

May/June 2021

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

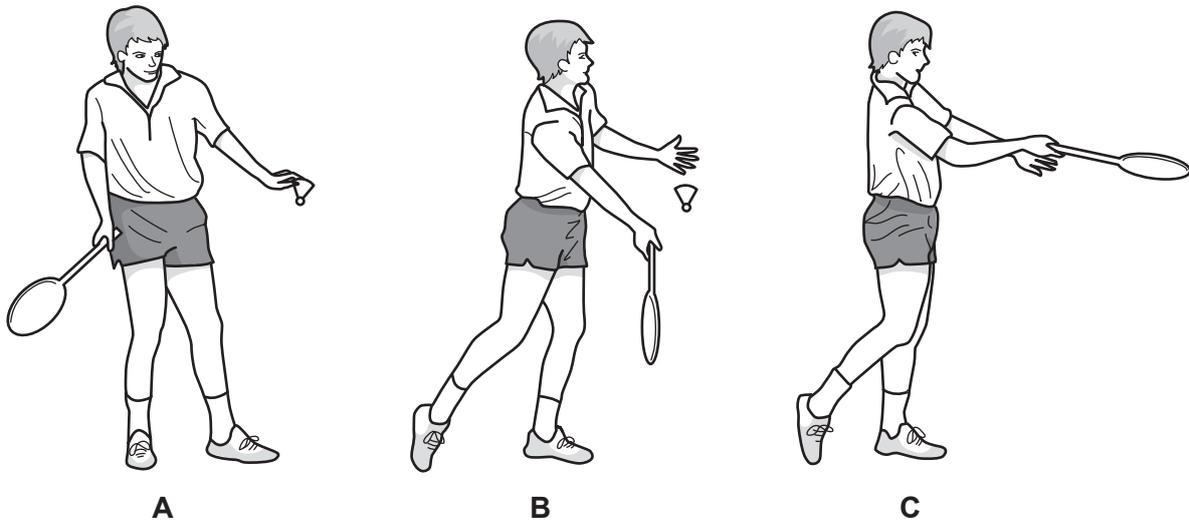
1 (a) Flexion of the spine may occur during sporting movements.

Identify each of the following:

- the type of joint used during flexion of the spine
- an agonist causing flexion of the spine
- an antagonist during flexion of the spine.

[3]

(b) The diagrams show a performance of a badminton serve.



Identify the items 1–5 in the table to describe a movement analysis of the performer's right shoulder joint and the performer's right ankle joint from position **A** to position **C**. 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
right shoulder joint from A to C	1	2	3
right ankle joint from A to C	4	5	

[5]

(c) Explain the functions of **four** features of a synovial joint.

[4]

(d) Heart rate and cardiac output increase during exercise.

(i) Explain how this increase in cardiac output is achieved.

[4]

(ii) Explain the role of the sinoatrial node (SAN) and atrioventricular node (AVN) in the conduction system of the heart.

[3]

(e) Describe **three** different ways that carbon dioxide is transported in the blood.

[3]

(f) (i) The vital capacity of the lungs is made up of the following respiratory volumes:

- tidal volume
- expiratory reserve volume
- inspiratory reserve volume.

Describe the change to each of these **three** respiratory volumes when the body starts to exercise. [3]

(ii) Explain the neural and chemical factors that control the ventilation rate of a performer during exercise. [5]

[Total: 30]

Section B: Acquiring, developing and performing movement skills

- 2 (a) Classify the athletic event of the long jump on each of the following **four** continua. Justify your answer for each classification.
- open and closed
 - discrete, serial and continuous
 - externally and internally paced
 - high and low organisation
- [4]
- (b) Describe the cognitive theory of learning. [4]
- (c) Describe schema theory using a practical example. [5]
- (d) Selective attention is a component of information processing that allows skills to be completed. Suggest strategies that a coach could use to improve a performer's selective attention. [3]
- (e) Explain how the short-term memory and the long-term memory are used when performing practical skills. [5]
- (f) During the development of movement skills, a performer may progress through three phases of learning.
- (i) Identify the second phase of learning. [1]
- (ii) Describe strategies a coach could use to help a performer progress from the second phase of learning to the third phase of learning. [4]
- (g) Explain, using the inverted-U theory, how different levels of arousal may affect the performance of movement skills. [4]

[Total: 30]

Section C: Contemporary studies in physical education and sport

- 3 (a) Describe differences between physical recreation and physical education. [4]
- (b) (i) Describe what is meant by the term *elite sport*. [3]
- (ii) Suggest the provision required by a performer to reach an elite level. [3]
- (c) (i) One benefit for an individual of regular participation in physical activity is increased health and fitness. [4]
- Outline other benefits for an individual of regular participation in physical activity. [4]
- (ii) Describe **two** named initiatives from a country of your choice to increase participation in sport. [4]
- (d) Suggest possible solutions to the problem of increasing violence in sport caused by each of the following: [6]
- players
 - spectators.
- (e) Outline the negative effects that the media may have on sport. [6]

[Total: 30]

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