



# Cambridge International AS & A Level

**PHYSICAL EDUCATION**

**9396/12**

Paper 1

**May/June 2020**

**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

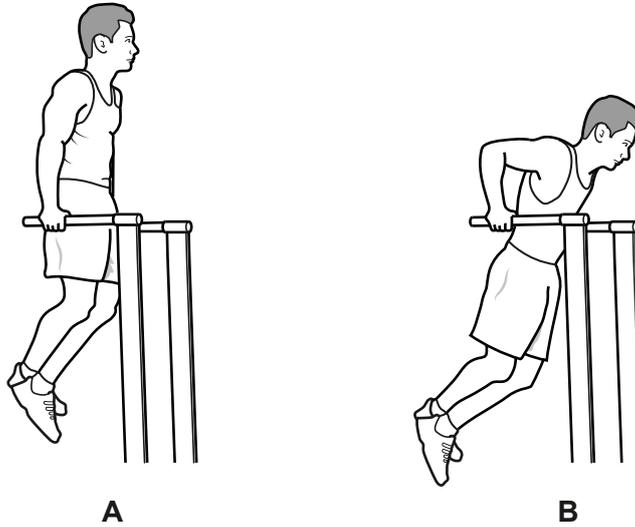
- The total mark for this paper is 90.
- The number of marks for each question or part question is shown in brackets [ ].

This document has **4** pages. Blank pages are indicated.

Answer **all** questions.

**Section A: Applied anatomy and physiology**

- 1 (a) The diagrams show a performance of a dip.



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

	type of movement occurring	main agonist	different type of muscle contraction
elbow joint from <b>A</b> to <b>B</b>	1	2	3
elbow joint from <b>B</b> to <b>A</b>	4		5

[5]

- (b) Describe **two** benefits of fast glycolytic muscle fibres and **one** benefit of fast oxidative glycolytic muscle fibres. [3]

- (c) During exercise, a performer's heart rate will vary.

Describe how the parasympathetic and the sympathetic neural pathways control heart rate during exercise. [5]

- (d) (i) State the effect of exercise on venous return. [1]

(ii) Explain factors that assist venous return. [3]

- (e) Describe how oxygen and carbon dioxide are transported in the blood. [3]

- (f) Define each of the following respiratory volumes and describe the change, if any, in each respiratory volume during exercise:

- minute ventilation
- residual volume
- inspiratory reserve volume.

[6]

- (g) Explain the immediate effects of moving to high altitude on the respiratory system. [4]

[Total: 30]

**Section B: Acquiring, developing and performing movement skills**

- 2 (a) Suggest how a coach would identify a skilful performance. [3]
- (b) Skills can be classified using various continua.

The diagram shows a putting stroke in golf.



Classify a putting stroke in golf using each of these **three** continua. Justify your answer for each classification.

- open and closed
- discrete, serial and continuous
- externally paced and internally paced

[3]

- (c) When learning skills, a performer progresses from motor abilities through fundamental motor skills to sport-specific skills.

Explain this progression using a practical example.

[3]

- (d) Explain the cognitive theory of learning movement skills. [3]

- (e) Outline the theory of operant conditioning and explain the benefits of using this approach to develop skilful performers. [6]

- (f) When teaching new skills, coaches will often implement the principles of Schmidt's schema theory.

State and explain the functions of recall schema.

[3]

- (g) The memory process plays an important part in acquiring and performing motor skills.

Describe the basic model of the memory process when performing motor skills.

[5]

- (h) Explain, using practical examples of each, proactive and retroactive transfer of learning. [4]

[Total: 30]

**Section C: Contemporary studies in physical education and sport**

- 3 (a)** Rock climbing and canoeing are examples of outdoor recreation.
- (i) Suggest the benefits of participation in outdoor recreation. [3]
- (ii) Explain, using examples from outdoor recreation, what is meant by each of the following:
- real risk
  - perceived risk.
- [4]
- (b) (i)** Describe, using a country of your choice, how elite performers can be funded. [4]
- (ii)** Suggest why many countries invest heavily to achieve Olympic success. [4]
- (c) (i)** Outline the benefits for an individual of regular participation in sport. [5]
- (ii)** Explain factors that may affect an individual's opportunity to participate in sport. [6]
- (d)** Discuss the suggestion that an increase in the commercialism of sport has been beneficial for performers. [4]

[Total: 30]

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