



# Cambridge International AS & A Level

**PHYSICAL EDUCATION**

**9396/12**

Paper 1

**October/November 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.

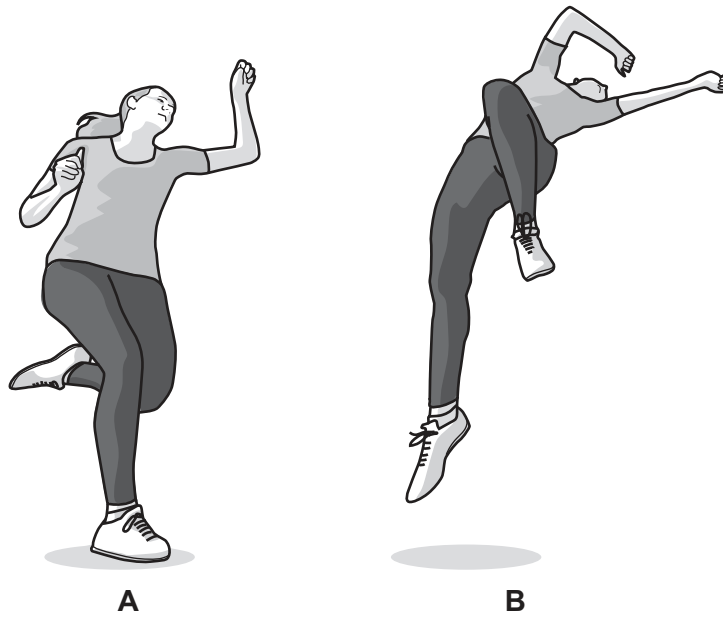
**Section A: Applied anatomy and physiology**

1 (a) Describe the following types of movement using examples that occur at the hip joint:

- flexion
- abduction
- rotation.

[3]

(b) The diagram shows part of a high jumper's technique.



(i) 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 **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 shoulder joint from <b>A</b> to <b>B</b>	1	2	3
performer's right ankle joint from <b>A</b> to <b>B</b>	4	5	

[5]

(ii) During a high jump, a performer may use their fast glycolytic muscle fibres, which are capable of producing a large force and contracting at high speed.

Describe **four** other characteristics of this type of muscle fibre.

[4]

(c) When the body starts to exercise heart rate increases.

Explain the hormonal and intrinsic factors that regulate heart rate.

[5]

(d) When running a performer will experience an increase in venous return.

Describe how the skeletal muscle pump mechanism is assisted by running. [3]

(e) Explain the effects of sub-maximal exercise on blood pressure. [4]

(f) Describe how oxygen is transported to a muscle cell. [2]

(g) Describe the mechanics of breathing during exercise. [4]

[Total: 30]

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

- 2 (a) Skilful performances are learned, aesthetically pleasing and follow a technical model.  
Identify **three** other characteristics of skilful performances. [3]
- (b) Explain how early childhood experiences and environmental exposure can affect the development of motor skills. [3]
- (c) Describe the operant conditioning theory of learning. [4]
- (d) Selective attention is a part of the basic model of the memory process.  
Suggest how a coach could improve a performer's selective attention. [4]
- (e) Schema theory suggests that various sources of information are used to modify and evaluate motor programmes.
- (i) Explain the functions of recall schema. [3]
- (ii) Suggest how a coach may use schema theory to develop a performer's skills. [3]
- (f) Explain, using a practical example, how the psychological refractory period can affect reaction time when performing a movement skill. [3]
- (g) Transfer of learning occurs when one skill affects the learning of another skill.
- (i) Describe a sporting example of positive transfer. [1]
- (ii) Explain how a coach could optimise the effects of positive transfer. [2]
- (h) Explain how excessive extrinsic motivation can have a negative effect on a performer. [4]

[Total: 30]

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

- 3 (a) Outdoor education activities, such as hill walking and sailing, take place in the natural environment and involve an element of risk.
- (i) Explain, using examples from outdoor education, what is meant by the following:
- real risk
  - perceived risk.
- [4]
- (ii) Suggest benefits for an individual of participating in outdoor education activities, such as hill walking and sailing. [4]
- (iii) Sailing is also a competitive sport.
- Other than being competitive, identify **three** characteristics of sport. [3]
- (b) Describe the provision required by a performer in order to achieve excellence in a sport. [5]
- (c) Compare public and private leisure facility provision. [3]
- (d) Suggest ways that more women can be encouraged to take part in physical activity. [4]
- (e) Describe how the ethic of fair play is encouraged and maintained in elite sport. [3]
- (f) Describe possible disadvantages for a performer of being sponsored. [4]
- [Total: 30]





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