



Cambridge International AS & A Level

PHYSICAL EDUCATION

9396/12

Paper 1

October/November 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 **8** pages. Blank pages are indicated.

Answer **all** questions.

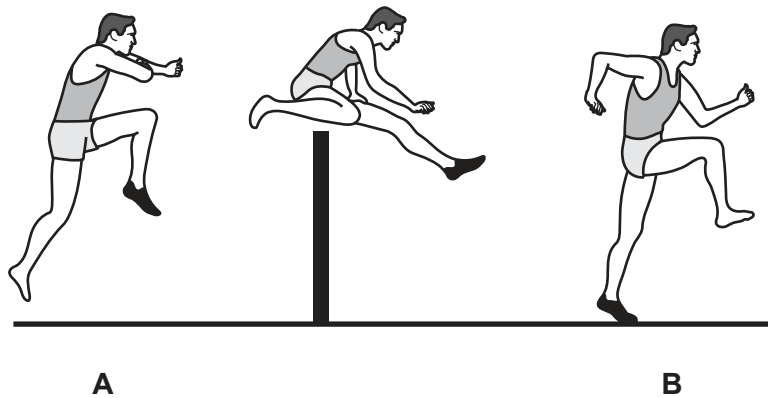
Section A: Applied anatomy and physiology

- 1 (a) Describe the following types of movement that can occur at the ankle joint and identify a main agonist involved in each type of movement.

- plantar flexion
- dorsiflexion

[4]

- (b) The diagram shows some stages in a hurdler's technique.

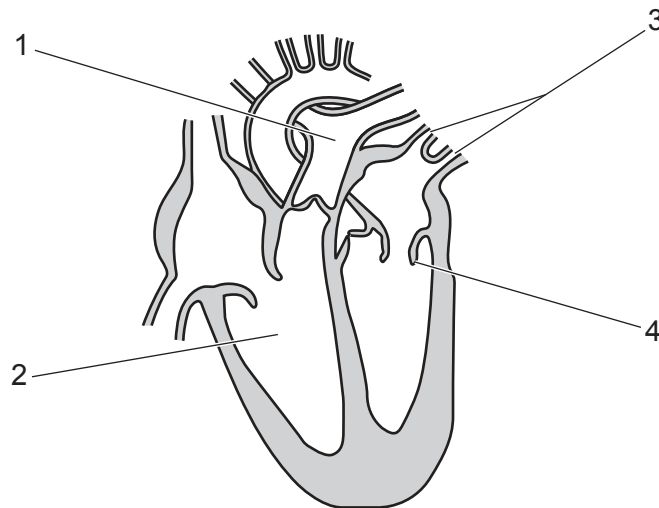


Identify the items 1–6 in the table to describe a movement analysis of the knee joint and the hip joint of the front/lead (left) leg of the athlete (indicated with a black foot) from position **A** to position **B**. Your analysis should include the type of synovial joint, the type of movement occurring and the main agonist.

	type of synovial joint	type of movement occurring	main agonist
knee joint	1	2	3
hip joint	4	5	6

[6]

(c) (i) The diagram shows the structure of the heart.



Identify the structures labelled 1 to 4 in the diagram. [4]

(ii) During a sustained period of exercise a performer's stroke volume will increase.

Explain how this increase is achieved. [4]

(d) During exercise a large percentage of blood is redistributed to the working muscles through the vascular shunt mechanism.

Explain how this redistribution of blood is achieved. [4]

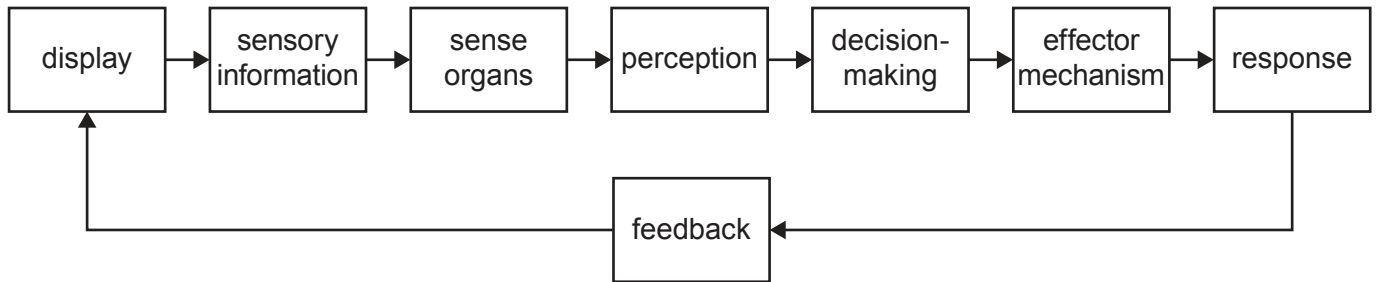
(e) Identify and explain the neural and chemical factors that control the ventilation rate of a performer during exercise. [4]

(f) Describe the effects of exercise on **four** respiratory volumes. [4]

[Total: 30]

Section B: Acquiring, developing and performing movement skills

- 2 (a) Explain, using suitable examples, what is meant by *gross motor ability* and what is meant by *psychomotor ability*. [4]
- (b) Outline the theory of operant conditioning. [6]
- (c) Explain, using an example from a sport-specific skill, open-loop control. [4]
- (d) The diagram shows an example of an information processing model.



Explain the roles of each of the following:

- sense organs
 - decision-making. [4]
- (e) Describe the characteristics and functions of long-term memory. [4]
- (f) Describe, using suitable examples of each, the following types of feedback available to a performer:
- intrinsic
 - knowledge of results
 - concurrent
 - positive. [4]
- (g) Identify and explain the functions of recognition schema. [4]

[Total: 30]

Section C: Contemporary studies in physical education and sport

- 3 (a) Describe the characteristics of play. [3]
- (b) Describe the terms *equal opportunity* and *esteem* in relation to sports participation. [2]
- (c) Describe, using suitable examples of each, the values of physical education in schools. [4]
- (d) Describe, using a country of your choice, the policies and initiatives that are in place to achieve excellence in sport. [5]
- (e) (i) Outline the benefits for society of regular participation in sport. [4]
- (ii) Explain factors that affect participation in sport. [4]
- (f) (i) Describe, using an example of each, the following terms:
- sportsmanship
 - gamesmanship. [4]
- (ii) Suggest how the ethic of fair play is encouraged and maintained in elite sport. [4]

[Total: 30]

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