



Cambridge International AS & A Level

PHYSICAL EDUCATION

9396/12

Paper 1

October/November 2022

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

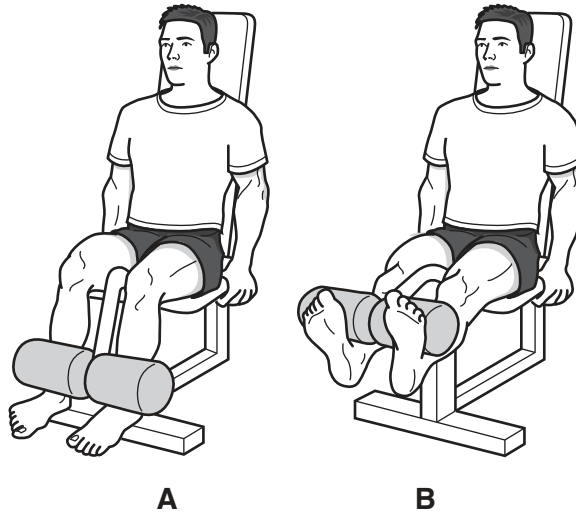
- The total mark for this paper is 90.
- The number of marks for each question or part question is shown in brackets [].

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

Answer **all** questions.

Section A: Applied anatomy and physiology

- 1 (a) (i) State the names of **three** bones that articulate at the elbow joint. [3]
- (ii) Describe the function of **four** named features of a synovial joint. [4]
- (b) The diagrams show a performer completing a leg exercise.



Identify the items 1–6 in the table to describe a movement analysis of the knee joints 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
knee joints from A to B	1	2	3
knee joints from B to A	4	5	6

[6]

- (c) Describe the route taken by blood as it travels from the lungs to the aorta. [4]
- (d) Describe the changes to the cardiac cycle as heart rate increases. [3]
- (e) Other than being dissolved in plasma, describe **two** ways that carbon dioxide is transported in the blood. [2]
- (f) The lungs contain many alveoli, which are surrounded by capillaries. This provides a large surface area for gaseous exchange.

Explain how **two** other structural features of the alveoli assist gaseous exchange. [2]

(g) (i) The table shows information about some respiratory volumes.

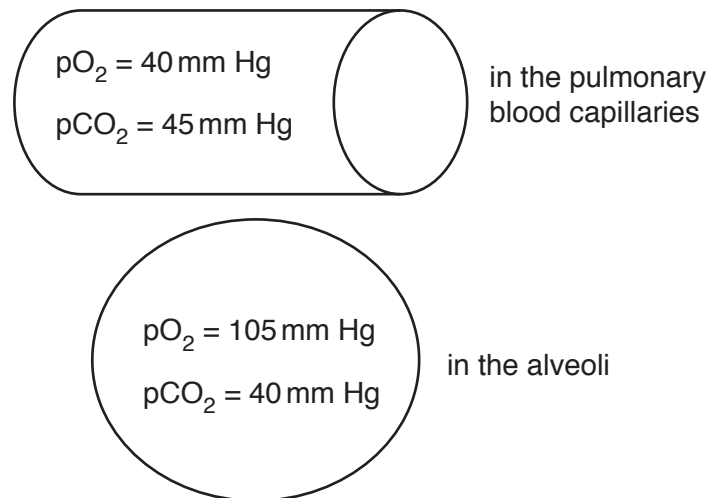
respiratory volume	definition	immediate effect of exercise on respiratory volume
tidal volume	A	increases
B	the maximal volume of additional air that can be breathed in after a normal breath	decreases
residual volume	the volume of air left in the lungs at the end of a maximal expiration	C

Identify the missing components in the table to show:

- **A**, a definition of tidal volume
- **B**, the missing respiratory volume
- **C**, the immediate effect of exercise on residual volume.

[3]

(ii) The diagram shows values for the partial pressures of oxygen and the partial pressures of carbon dioxide in the pulmonary blood capillaries and in the alveoli.



Use the information in the diagram to explain gaseous exchange at the alveoli. [3]

[Total: 30]

Section B: Acquiring, developing and performing movement skills

2 (a) (i) The skill of taking a penalty in a team sport, such as football or hockey, may be classified as:

- a closed skill
- a discrete skill.

Justify each of these classifications. [2]

(ii) One coach may classify the skill of taking a penalty in a team sport as internally paced. Another coach may classify this skill as externally paced.

Explain why both coaches could be correct. [2]

(b) Retention and motor reproduction are elements of Bandura's observational learning theory.

Explain how a coach can use each of these elements to assist the process of learning when performers are watching a demonstration. [4]

(c) Reinforcement may be used as a method to strengthen the stimulus–response (S/R) bond.

Describe other ways of strengthening the S/R bond. [4]

(d) Explain the **two** rules of recognition schema. [4]

(e) The memory process plays an important part in acquiring and performing movement skills.

(i) Explain the basic model of the memory process. [4]

(ii) Suggest strategies a coach could use to improve the memory process. [4]

(f) When learning skills, a performer will progress through various phases of learning.

(i) Explain how the type of feedback used may differ between a performer in the cognitive phase of learning and a performer in the autonomous phase of learning. [4]

(ii) Other than the type of feedback used, describe a characteristic of each of the following phases of learning:

- cognitive
- autonomous.

[2]

[Total: 30]

Section C: Contemporary studies in physical education and sport

- 3 (a) Describe the characteristics of play. [3]
- (b) (i) Explain what is meant by elite sport. [3]
- (ii) Describe, using a country of your choice, named policies or initiatives that exist to help performers achieve excellence in their sport. [4]
- (c) (i) Apart from increased health and fitness, outline the benefits for an individual of regular participation in sport. [5]
- (ii) Socioeconomic status, age and disability are factors that affect participation in sport.
Explain how **five** other factors may affect participation in sport. [5]
- (d) Describe, using examples, how sport and politics have been linked. [4]
- (e) Explain, using examples, how the media has benefited sport. [6]

[Total: 30]

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