



Cambridge International AS & A Level

PHYSICAL EDUCATION

9396/13

Paper 1

May/June 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) Describe each of the following:

- supination at the wrist
- dorsiflexion at the ankle
- flexion at the shoulder.

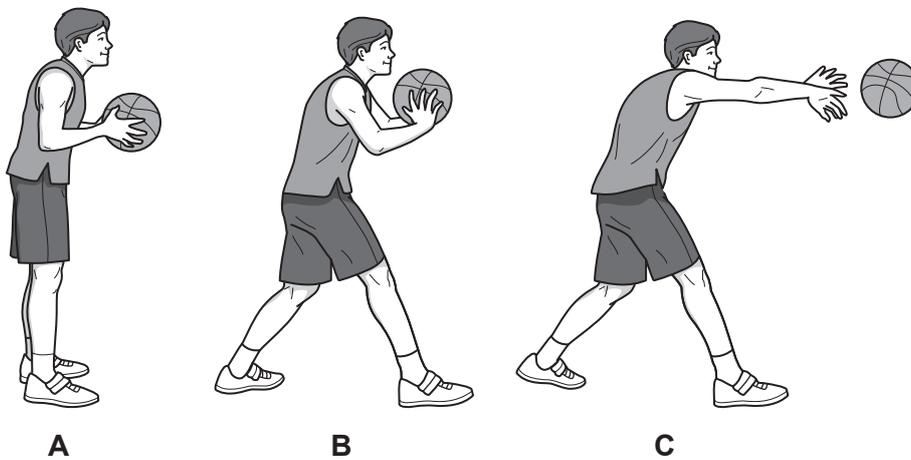
[3]

(b) Slow-twitch muscle fibres contract slowly and are resistant to fatigue.

Describe **three** other characteristics of slow-twitch muscle fibres.

[3]

(c) The diagram shows a basketball chest pass.



(i) Identify the items 1–4 in the table to describe a movement analysis of the performer's right hip joint from position **A** to position **B** and the performer's right elbow joint from position **B** to position **C**. Your analysis should include the type of movement occurring and the main agonist.

	type of movement occurring	main agonist
performer's right hip joint from A to B	1	2
performer's right elbow joint from B to C	3	4

[4]

(ii) Identify the bones that articulate at each of the following joints:

- hip
- elbow.

[2]

(d) The cardiac output of a performer depends on their stroke volume and their heart rate.

(i) Use the table to calculate values for **A** and **B**. State the unit for **C**.

	value at rest	value during exercise	unit
stroke volume	A	150	millilitres
heart rate	70	B	beats per minute
cardiac output	4900	22 500	C

[3]

(ii) During physical activity cardiac output increases.

Explain how changes in blood acidity cause cardiac output to increase.

[5]

(e) Describe why blood pressure changes as blood moves around the systemic circulatory system. [2]

(f) Describe the role of the internal intercostal muscles and the external intercostal muscles:

- when breathing at rest
- when breathing during exercise.

[6]

(g) The alveoli in the lungs have very thin walls and provide a large surface area for gaseous exchange.

Describe **two** other structural features of the alveoli that assist gaseous exchange.

[2]

[Total: 30]

Section B: Acquiring, developing and performing movement skills

- 2 (a) Skilful performances are aesthetically pleasing, learned, and efficient.
Identify **three** other characteristics of skilful performances. [3]
- (b) (i) State **two** characteristics of abilities. [2]
- (ii) Identify an example of each of the following:
- gross motor ability
 - psychomotor ability. [2]
- (c) (i) Describe the associationist theory of operant conditioning. [4]
- (ii) Suggest **two** advantages and **two** disadvantages of using operant conditioning to develop skilful performers. [4]
- (d) Bandura's theory of observational learning includes the four elements of attention, retention, motor reproduction and motivation.
Describe how each of these elements affect the learning of a movement skill. [4]
- (e) Identify the **two** rules of recall schema. [2]
- (f) Suggest **three** effective types of feedback for a performer in the cognitive phase of learning. Justify each of your answers. [3]
- (g) Describe each of the following types of transfer of learning:
- bilateral
 - proactive. [2]
- (h) (i) State **two** different examples of extrinsic motivation. [2]
- (ii) Explain why intrinsic motivation may be considered to be more effective than extrinsic motivation in the learning of movement skills. [2]

[Total: 30]

Section C: Contemporary studies in physical education and sport

- 3 (a) Adventure and risk to the individual are characteristics of outdoor recreation.
- (i) Identify **two** other characteristics of outdoor recreation. [2]
- (ii) Explain, using examples from outdoor education, what is meant by each of the following:
- real risk
 - perceived risk.
- [4]
- (b) (i) Describe what is meant by elite sport. [2]
- (ii) Using a named country, describe how potential elite performers are identified and developed. [4]
- (c) (i) Suggest how organisations, such as National Governing Bodies, could encourage mass participation. [5]
- (ii) Suggest how a community could benefit from regular participation in physical activity. [4]
- (d) Describe the advantages and disadvantages of sponsorship for performers. [5]
- (e) Describe ways that modern elite sport tries to maintain the ethic of fair play. [4]

[Total: 30]

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