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Answer only TWO questions in this question paper. Write your answers in the spaces provided.

If you answer Question 1 put a cross in this box .

1. (a) Describe a cool down for a named sport and explain the reason why each activity within the cool down is performed.

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(6)

- (b) (i) Identify and describe the **two** different types of isotonic contraction.

Contraction 1

Description

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Contraction 2

Description

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(4)



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(ii) Identify a sporting example where a named muscle performs both types of contraction.

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(3)

(iii) Identify a sporting movement where an antagonist pair of muscles each take on the role of the prime mover. Name the muscles and the type of isotonic contraction performed.

Sporting example		Type of contraction performed
First identified working muscle		
Second identified working muscle		

(3)

(c) (i) Identify the **three** types of muscle fibre.

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(3)



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If you answer Question 2 put a cross in this box ☒.

2. (a) (i) Identify the structural and functional adaptations required by an athlete in order that they might improve their $\dot{V}O_2$ max.

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(5)

- (ii) Explain why these adaptations would be more effective than simply increasing lung capacity.

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(ii) Identify how the mechanical process of ventilation creates the necessary pressure gradient.

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(4)

(d) Define venous return. Identify and describe mechanisms used by the body to aid venous return.

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(6)

Q2

(Total 25 marks)

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If you answer Question 3 put a cross in this box ☒.

3. (a) (i) Identify **one** fitness test that would be suitable for an aerobic athlete and **one** that would be suitable for an anaerobic athlete. State the component of fitness specifically measured by each test.

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(2)

- (ii) Describe the protocol for each test.

Aerobic test

Protocol

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Anaerobic test

Protocol

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(6)

- (b) (i) Define maximal strength, cardiovascular endurance and reaction time.

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(3)



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(c) Define the respiratory volumes and capacities in the table below.

Volume or Capacity	Definition
Tidal Volume	
Inspiratory Reserve Volume	
Expiratory Reserve Volume	
Residual Volume	
Total Lung Capacity	
Vital Capacity	
Inspiration Capacity	
Functional Residual Capacity	

(8)

Q3

(Total 25 marks)



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(ii) State Karvonen's equation for a named training zone. Explain the benefits of training in this zone.

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(5)

(c) (i) Define the terms **agonist**, **antagonist**, **fixator**, and **synergist**.

agonist

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antagonist

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fixator

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synergist

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(4)



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(ii) Within a named sporting movement identify the muscles that perform the roles of **agonist, antagonist, fixator, and synergist.**

Named sporting movement

agonist

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antagonist

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fixator

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synergist

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(4)

(d) Describe **two** characteristics of circuit training. Identify the benefits associated with this method of training.

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(4)

Q4

(Total 25 marks)

TOTAL FOR PAPER: 50 MARKS

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