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

1. (a) (i) Explain why an athlete would warm up prior to exercise.

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(ii) Describe a warm up for a named activity, and identify the different stages involved. State the aims of each stage and describe how they are achieved.

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(c) (i) Define the terms *anatomical dead space*, *tidal volume* and *inspiratory reserve volume*.

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(ii) Explain why athletes rarely target improvements in respiratory capacities in their efforts to improve performance.

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(Total 25 marks)

Q1

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

2. (a) (i) Define the term *flexibility* and identify **two** main limiting factors.

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(ii) Name and describe **three** different methods of stretching.

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(c) (i) Define the terms *cardiac output* and *venous return* and explain their relationship, known as *Starling's Law*.

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(ii) Identify and explain the different mechanisms used by the body to enable venous return.

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

3. (a) (i) Explain how muscles work with bones to enable movement.

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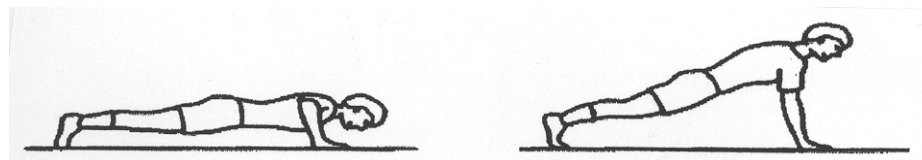
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(4)

(ii) Figure 1 shows an athlete performing a press-up. Name the muscles involved, and the roles they fulfil as the athlete moves from Position A to Position B.



Position A

Position B

Figure 1

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(7)

(iii) Identify the type of contractions performed by the agonist while moving from position A to position B.

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(b) (i) Define partial pressure of oxygen and explain why it is lower at altitude than at sea level.

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(ii) Identify the physiological effects this will have for an unacclimatised endurance athlete when first performing at altitude.

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(ii) Outline the structural and functional adaptations that will occur in an endurance athlete as a result of training at altitude.

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(6)

(Total 25 marks)

Q3



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If you answer Question 4 put a cross in this box .

4. (a) (i) Muscles can perform *isometric*, *isotonic* and *isokinetic* contractions. Describe each type of contraction.

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- (ii) Explain the difference between *eccentric* and *concentric* contractions. Provide a sporting example where the biceps brachii performs both types of contraction. Identify each phase of your example.

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(b) (i) Describe the role of fitness testing in an athlete's training programme.

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(ii) Identify a specific fitness test for a named athlete and describe the protocol for that test.

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(4)

(c) (i) Identify and define **three** components of physical fitness.

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(ii) For each of the components identified in your answer to c(i) explain why a named sport would benefit from that component.

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Q4

(Total 25 marks)

TOTAL FOR PAPER: 50 MARKS

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