Module Title: Applied Physiology for Sport
Level: Five
Time Allowed: Two hours

Instructions to students:

- Enter your student number **not** your name on all answer books.
- Answer **three** questions: **two** from Section A and **one** from Section B.
- All questions are equally weighted.
- Begin each answer on a new page; label each page clearly with the number of the question you are answering.
- Neither books nor notes may be taken into the examination.
- Graph paper can be found at the back of each answer book.

No. of Pages | 3
---|---
No. of Questions | 5
Section A

Answer two out of three questions in this section.

1. Explain the meaning of the term ‘homeostasis’ and critically discuss its significance for sport and exercise, making reference to at least three hormones.

2. The effective transport of oxygen and carbon dioxide are essential processes for sports performance. Specify and explain the partial pressures of these gases throughout different regions of the body. Assess the impact of partial pressure variations on gas transport during exercise, making reference to the ‘Bohr Effect’. You may draw and refer to curves in your answer.

3. Over a period of time the body undergoes adaptations as a result of a training programme. Select a sporting activity or individual and explain the physiological adaptations that would be expected to occur following an eight-week training programme. Analyse how such adaptations would enhance performance.

End of Section A
Section B follows overleaf
Section B

Answer one out of two questions in this section.

4. During exercise, the body requires energy from a variety of sources and mechanisms. ATP is the energy currency used by body cells. Explain and analyse the mechanisms of ATP production during a 10km run. Compare and contrast such mechanisms with a 400m sprint.

5. Explain the ‘Principle of Orderly Recruitment’. Apply knowledge on muscle fibre types to evaluate how this principle can facilitate performance in the context of an 80-minute rugby match.