Examination Period 3: 2016/17

SPO200517N

Module Title: Biomechanical Basis of Sport and Exercise
Level: Five
Time Allowed: Two hours

Instructions to students:
• Enter your student number not your name on all answer books.
• Answer two out of four questions.
• All questions are equally weighted.
• Begin each question in a separate book; label each answer book clearly with the number of the question you are answering.
• The same material should not constitute a substantial part of more than one question.
• Neither books nor notes may be taken into the examination.

No. of Pages 2
No. of Questions 4
Answer two questions.

1. Explain in detail, the neurophysiology controlling the principle of ‘orderly recruitment’ of motor units. Then discuss the mechanisms underpinning increases in strength following strength training.

2. Compare and contrast the expected differences in ground reaction forces between the squat and countermovement jump techniques. Then discuss the mechanisms underpinning the greater performance during countermovement jumps.

3. Explain in detail, the force-length characteristics of skeletal muscle. Then discuss the benefits to performance that lower-limb muscles operate only on the ascending limb of the force-length curve.

4. Explain in detail, force production during the stretch shortening cycle (SSC). Then discuss the influence of tendon stiffness on aerobic and power performance during SSC exercise.

End of Paper