ST MARY’S UNIVERSITY

TWICKENHAM, LONDON

BA/BSc Degree Examination students registered for

Level **FIVE**

Title: **Muscle Physiology**

Code: **STC5003**

Semester: **TWO**

Date: **May 16th 2019**

Time: **09.30-11.00 AM**

TIME ALLOWED: **ONE AND A HALF** HOURS

Attempt **ALL** ten questions. Questions carry 10 marks each. Answer each question in the same answer booklet.

1. Explain the neural and structural adaptations that occur in response to a long-term resistance training programme. As part of your explanation, identify the functional significance of each adaptation. (10 Marks)
2. Provide brief notes outlining potential factors that might signal a hypertrophy response in muscle, as well as their proposed mechanism of effect, following strength training (10 marks).
3. Define the term neuroplasticity and outline the levels where CNS adaptations occur (10 marks).
4. Describe the key features of the graph in Figure 1 (4 marks) and the reasons for the change in lactate response as a result of endurance training (6 marks).



Figure 1. Blood lactate response to increasing exercise intensity.

1. Following a bout of heavy eccentric exercise, muscle fibres are often damaged resulting in soreness for 48-72 hours. Describe the likely mechanisms of the repeated bout effect that are observed in response to loading of this nature. (10 marks)
2. What adaptations occur in skeletal muscle as a result of chronic endurance training, which might result in an improved performance? (10 marks)
3. Exercise induced muscle damage occurs following an unaccustomed bout of mainly eccentric exercise. Give a short overview of the symptoms associated with it (10 Marks).
4. List five enzymes that have been reported to change with repeated sprint training (10 marks).
5. Compression garments are frequently used by athletes in training and recovery. Outline the mechanisms by which compression may:
6. Enhance performance (5 marks)
7. Accelerate recovery (5 marks)
8. How does pennation angle change following a long-term strength training programme? Include a diagram to support the answer (10 marks).

**END OF EXAMINATION**