ST MARY’S UNIVERSITY

TWICKENHAM, LONDON

BA/BSc Degree Examination students registered for

Level **FIVE**

Title: **Muscle Physiology**

Code: **STC5003**

Semester: **Resit**

Date: **02 July 2019**

Time: **09:30-11:00am**

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. List the five neurological mechanisms that explain adaptations to strength and power training (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. What is meant by the ‘size principle’ and ‘rate coding’ in the context of production and control of force in the neuromuscular system? Describe the adaptations, which occur to these mechanisms as a result of a strength training programme (8 marks). Draw an appropriate diagram to support the answer (2 marks).
5. What is meant by the term ‘DOMS’ and what is the cause? List the potential (primary and secondary) mechanisms that have been purported to explain this phenomenon (10 marks).
6. What adaptations occur in skeletal muscle as a result of chronic endurance training, which might result in an improved performance? (10 marks)
7. Describe the bone structure, and the general response of bone tissue to overloading (strength training). Briefly review why this information may be of particular relevance when coaching young female athletes (10 marks).
8. Briefly outline the metabolic and neuromuscular adaptations to high intensity exercise training (10 marks).
9. Compression garments are frequently used by athletes in training and recovery. Outline the mechanisms by which compression may:
10. Enhance performance (5 marks)
11. Accelerate recovery (5 marks)
12. What role does cAMP have in cell signal transduction and how is it activated? (10 marks).

**END OF EXAMINATION**