ST MARY’S UNIVERSITY

TWICKENHAM, LONDON

MSc Degree Examination students registered for

Level **SEVEN**

Title: **Advanced Sport and Exercise Physiology**

Code: **ASE7002**

Semester: **One**

Date: **7th January, 2020**

Time: **9:30am – 11:30am**

TIME ALLOWED: **TWO** HOURS

Answer **TWO** questions, each in a **SEPARATE** answer booklet. Make sure you answer all parts of the question. Calculators can be used during the examination.

1. Pre-cooling and mid-cooling strategies are often used by athletes to enhance performance in the heat. Identify ONE pre-cooling and ONE mid-cooling strategy that you would recommend an athlete use to optimise performance in the heat. Using physiological reasoning, explain: **a)** why environmental heat combined with exercise limits endurance performance (50%) and **b)** how your chosen pre-cooling and mid-cooling strategy can be conducted and how it might counteract the negative effects of heat stress on athletes (50%).
2. High Intensity Training (HIT) is often used by endurance athletes to improve performance. **a)** Explain how HIT is used, including discussion of the adaptations and mechanisms behind this form of training (50%). **b)** Include within your answer how this relates to performance and implications for training programmes for endurance athletes (50%).
3. **a)** Explain the physiological determinants of Marathon performance (50%) and **b)** what the likely causes of fatigue are during this type of event (50%).
4. **a)** Define the Hoffman’s (H)-reflex (20%). **b)** Which pathophysiological observations could a practitioner make by performing a H-reflex test? (20%).   
   **c)** Explain in detail how you would conduct a test to determine the H-reflex and the underlying physiology of the response (60%).

**END OF EXAMINATION**