SUMMER EXAMINATIONS 2015

SPO200315N

MODULE TITLE  Physiological Basis of Sport and Exercise
LEVEL      Five
TIME ALLOWED  Two hours

Instructions to students:

• Enter your student number not your name on all answer booklets.
• Answer TWO of the five questions.
• All questions are equally weighted.
• Begin each answer in a separate booklet; label each booklet 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.
• You may not remove this examination paper from the examination room. For all purposes the examination paper remains the property of The University of Northampton.

<table>
<thead>
<tr>
<th>No. of Pages</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Questions</td>
<td>5</td>
</tr>
</tbody>
</table>
ANSWER TWO OF THE FOLLOWING QUESTIONS

1. The large increase in carbon dioxide produced, via energy metabolism, during exercise greatly increases the partial pressure of this gas within the exercising muscle fibres. Give a detailed explanation of how gas partial pressures affect diffusion gradients and oxygen’s saturation of haemoglobin. Then describe in detail how carbon dioxide is transported within the blood.

2. Over a period of time the body undergoes specific central and peripheral adaptations relating to the type, duration and intensity of a training programme. Explain in detail the chronic central adaptations that take place due to aerobic endurance training and discuss how they may facilitate an improvement in performance.

3. From the moment the athlete leaves the block to the dip at the finish line the 200m athlete utilises all of their energy systems. Describe in detail the two main energy pathways used then discuss in detail which energy system is dominant at which particular stage of the race.

4. During a one day Netball tournament teams taking part in the final must first play and win five half hour games. Evaluate the effect of this intense schedule on energy substrate availability. Then discuss the nutritional strategies that may be employed before and during the competition to aid performance.

5. The two primary hormones which affect blood glucose levels are insulin and glucagon. Explain in detail how these hormones work together to maintain glucose levels within the blood and active muscles. Also discuss how the cells sensitivity to these hormones are regulated during exercise.

END OF PAPER