NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

SSC4209

FACULTY OF APPLIED SCIENCES

BACHELOR OF SCIENCE HONOURS DEGREE EXAMINATIONS

DEPARTMENT OF SPORTS SCIENCE AND COACHING

THEORY: SSC4209: ADVANCED SPORTS STUDIES

MAY 2011

3 HOURS (100 MARKS)

INSTRUCTIONS

Answer 4 questions only. Each question carries 25 marks. Where a question contains subdivisions, the mark value for each subdivision is given in brackets. Illustrate your answer where appropriate with large clearly labeled diagrams.

1. Skinfolds (SKFs) are widely used in estimating percentage body fat for athletes and the general population:

   a) Discuss the assumptions for using SKFs as a measure of subcutaneous fat. [6 marks]

   b) Describe the relationship between sum of skinfolds and Db for homogenous and heterogeneous populations. [10 marks]

   c) Discuss ways of reducing measurement error for the SKF method. [9 marks]

2. a) Compare and contrast Behnke's reference man and woman. [12 marks]

   b) Show the difference between fat-free body mass (FFM) and lean body mass and discuss how they impact on the whole body density of male and female athletes. [13 marks]

3. Densitometry is the most popular criterion method in Sports Science research.

   a) Describe the underlying principles and basic assumptions of the underwater weighing method. [6 marks]

   b) Describe and discuss the underwater weighing procedures. [19 marks]

4. a) Discuss ways in which body composition data can be used by athletes, coaches and sports medicine professionals with special reference to a long distance runner and a boxer. [16 marks]

   b) Identify and describe strategies for helping athletes to achieve a healthy body composition. [9marks]

5. (i) Define somatotype. [6 marks]

(ii) Discuss the use of somatotyping in sport talent identification and development. [19 marks]

6. Discuss the role of kinanhropometry in modern sport. [25 marks]

END OF EXAMINATION