

**NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY**

**SSC4209**

FACULTY OF APPLIED SCIENCES

BACHELOR OF SCIENCE HONOURS DEGREE EXAMINATIONS

DEPARTMENT OF SPORTS SCIENCE AND COACHING

**CONVENTIONAL PROGRAMME**

**THEORY:SSC4209: ADVANCED SPORTS STUDIES**

**APRIL 2014**

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. a) Describe the component model and any multi-component models of body composition assessment. **(12marks)**  
b) Which one of the body composition assessment models do you think is the most practically applicable for health and exercise science and why? **(13 marks)**
2. a) Discuss the assumptions for using skinfolds (SKFs) as a measure of subcutaneous fat. **(6 marks)**  
b) Describe the relationship between sum of skinfolds and body density  $D_b$  for homogenous and heterogeneous populations. **(10 marks)**  
c) Discuss ways of reducing measurement error for the SKF method. **(9 marks)**
3. a) Describe the procedure of underwater weighing. **(10 marks)**  
b) Discuss the sources of error in the underwater weighing procedure and explain how you could reduce these errors. **(15marks)**
4. i) What is somatotype? **(6 marks)**  
ii) How is somatotype determined? **(6 marks)**  
iii) Suggest the application of somatotyping in modern sport **(13 marks)**

5. a) Define kin anthropometry. **(5 marks)**  
b) Discuss the application of kinanthropometry in modern health and exercise science. **(20marks)**
6. 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. **(16marks)**  
b) Identify and describe strategies for helping athletes achieve a healthy body composition. **(9marks)**

**END OF EXAMINATION**