

NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

SSC2206

FACULTY OF APPLIED SCIENCES

BACHELOR OF SCIENCE HONOURS DEGREE EXAMINATIONS

DEPARTMENT OF SPORTS SCIENCE AND COACHING

THEORY: SSC2206: EXERCISE PHYSIOLOGY AND BIOCHEMISTRY

AUGUST 2009

3 HOURS (100 MARKS)

INSTRUCTIONS

Answer **four** 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) Discuss the anthropometric differences between the males and females. (5 marks)
 - b) Suggest physiological reasons for the differences. (5 marks)
 - c) What are the metabolic adaptations for both sexes to endurance training? (15 marks)

2. Write short notes on the following:
 - a) General physiology. (5 marks)
 - b) Exercise physiology (5 marks)
 - c) Sports physiology (5 marks)
 - d) Sport Science (5 marks)
 - e) Acute response to exercise (5 marks)

3. When applied to training, the principle of specificity refers to adaptations in the metabolic and physiologic systems. Discuss: (25 marks)

4. A marathon athlete from the Lowveld of Zimbabwe arrives in the Eastern Highlands for the Africa University Peace Marathon race 20 days before the race date. Discuss:
 - a) What the athlete intends to achieve by training in the Eastern Highlands before the race. (10 marks)
 - b) The three possible maladies he would face if he had just flown from the Lowveld two days before the race. (15 marks)

5. The Department of Sports Science requests you to make a presentation to coaches preparing for the 2009 National Youth games on the following ergogenic aids:
 - a) Anabolic steroids (5 marks)
 - b) Amphetamines (5 marks)
 - c) Erythropoietin (5 marks)
 - d) Caffeine (5 marks)
 - e) Beta blockers (5 marks)Discuss your presentation indicating (a) the sports which abuse the drug (b) its suggested effects and (c) risks

6. Write shorts notes on:
- a) Graded exercise testing (5 marks)
 - b) Testing with bicycle ergometers (5 marks)
 - c) Testing with treadmills (5 marks)
 - d) Single stage Treadmill Jogging Test (5 marks)
 - e) Astrand –Rhyming Bicycle Ergometer Submaximal Test Protocol (5 marks)

END OF EXAMINATION