NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

SSC4102

FACULTY OF APPLIED SCIENCES

BACHELOR OF SCIENCE HONOURS DEGREE EXAMINATIONS

DEPARTMENT OF SPORTS SCIENCE AND COACHING

THEORY: SSC4102: SPORTS BIOKINETICS

FEBRUARY 2010

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. The Department of Sports Science and Coaching, in an attempt to raise awareness on the value of Physical Activity, intends to make use of a 10 minute ***"Live on Air"*** Exposition on **S-FM** (A local National Radio Station).

   Your tasks as a student of Biokinetics are as follows;

   a) To briefly introduce the Biokineticist's scope of work for the public to understand. (5 marks)

   b) To briefly trace the history of physical activity in treatment of infirmities and injuries. (10 marks)

   c) Outline 6 benefits of Physical Activity. (6 marks)

   d) How would you handle questions that you may not be able to answer on air? (4 marks)

2. "Most injuries in sports can be prevented by adhering to simple precautionary measures on athletes' equipment, facilities, environmental conditions and characteristics of each sport."

   With reference to examples from different sports, discuss the above statement. (25 marks)

3. Shock is a serious sign with most traumatic injuries in extreme sports.

   a) Explain the concept of a Hypovolemic shock in the case of polytraumatic injuries resulting from a fall in a mountaineering expedition. (5 marks)

   b) How would you confirm that the climber in question 3 a), is getting into shock? Give 5 signs. (5 marks)

c) Enumerate steps of your management plan that you would follow until Emergency Medical Service (EMS) arrive. (10 marks)

d) List 5 cases that require immediate referral. (5 marks)

4. a) With examples, briefly explain the following terms as they refer to sports injuries:

i) Acute and chronic injuries. (5 marks)

ii) Lateral Epicondilitis (5 marks)

iii) Myositis Ossificans (5 marks)

b) Make a progressive rehabilitation plan consisting of five graded exercises that you would prescribe for a swimmer who is recovering from a shoulder dislocation ***NB: Application of rehabilitation principles is required.** (10 marks)

5. In preparation for the 2010 World Cup, a Warriors Striker receives a hard tackle from the last man in defense. A popping sound is heard and the footballer complains of severe pain which renders him functionally impotent to continue the game.

a) Identify the likely injury and briefly relate a test that you would use to confirm it. (7 marks)

b) What advice pertaining to the return to activity of this soccer player would you give to the coach? (3 marks)

c) Design a progressive rehabilitation guide for this footballer. Your guide must contain the following elements:
Time Line, Stages of Rehabilitation, Objectives, Exercises and Functional tests where applicable. (15 marks)

6. a) Outline 10 anatomical and physiological differences that exist between women and men. (10 marks)

b) Give 5 Indications and 5 contraindications that you would take into account when directing physical activities for elderly inmates of an old people's home. (10 marks)

c) Design an activity that could be used to maintain a functional cardio-respiratory system for the elderly population in question 6.b). (5 marks)

END OF EXAMINATION