

NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

SSC1220

FACULTY OF APPLIED SCIENCES

BACHELOR OF SCIENCE HONOURS DEGREE EXAMINATIONS

DEPARTMENT OF SPORTS SCIENCE AND COACHING

THEORY: SSC1220: FUNCTIONAL ANATOMY

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. Write notes on flexor and extensor muscles that act on the pectoral girdle when volleying above forehead. (25 marks)
2. Explain the process of muscular contraction. (25 marks)
3. List the roots of each of the spinal plexus and describe where each is located and the nerves, which originate from them. (25 marks)
4.
 - a) Describe the anatomical movement of the knee and hip joint. (13 marks)
 - b) Describe **any** two injuries that the knee joint is susceptible to in sports. (6 marks)
 - c) Describe isotonic and isometric contraction giving sporting examples in each case. (6 marks)
5.
 - a) Describe the mechanics of breathing. (16 marks)
 - b) Describe which respiratory volumes are being used during:-
 - i) a deep inspiration prior to jumping into a swimming pool. (3 marks)
 - ii) maximum ventilation during running. (3 marks)
 - iii) expiration after a 100m sprint. (3 marks)
6.
 - a) Write notes on the following:-
 - i) pulmonary circulation (5 marks)
 - ii) systemic circulation (5 marks)
 - iii) coronary circulation (5 marks)
 - b) What are the functions of blood? (10 marks)

END OF EXAMINATION