

NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

SSC1108

FACULTY OF APPLIED SCIENCES

BACHELOR OF SCIENCE HONOURS DEGREE EXAMINATIONS

DEPARTMENT OF SPORTS SCIENCE AND COACHING

THEORY: SSC1108: PRINCIPLES OF HUMAN PHYSIOLOGY

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. a) Differentiate between the peripheral and central nervous systems. (10 marks)
- b) Compare and contrast automatic and somatic reflexes. (6 marks)
- c) Describe the nervous control of respiration and heart contraction. (9marks)
2. a) Outline the events that occur in the thorax leading to the inhalation and exhalation of gases. (13 marks)
- b) Explain how oxygen is transported to the tissues and from the tissues. (12 marks)
3. a) Compare and contrast Fast Glycolytic and Slow twitch muscle fibres? (9 marks)
- b) Discuss muscle contraction on the basis of the sliding filament theory. (16 marks)
4. Write an essay on the digestive and absorptive functions of the alimentary canal. (25 marks)
5. a) Describe briefly the physiology of the heart. (9marks)
- b) Discuss briefly the systemic, pulmonary and hepatic circulation. (16 marks)
6. Give a detailed exposition of the hormones produced by the adrenal medulla and how they affect bodily functions. (25 marks)

END OF EXAMINATION