



## SECOND EXAMINATION FOR MEDICAL DEGREE

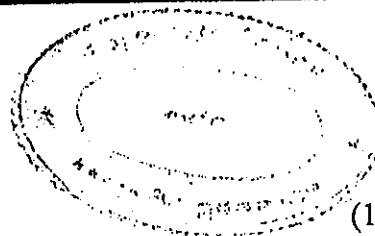
## PHYSIOLOGY II

December 2003

TIME: THREE HOURS

*Answer all five questions**Answer part A & B in separate answer books*

## PART A



- 1.0
- 1.1 Explain the terms (10 marks)
- 1.1.1. osmosis. (10 marks)
- 1.1.2. active transport. (10 marks)
- 1.1.3. secondary active transport. (10 marks)
- 1.2. Explain (20 marks)
- 1.2.1 how polyuria occurs in uncontrolled diabetes mellitus. (20 marks)
- 1.2.2 why proton pump inhibitors are useful in the treatment of peptic ulcers. (30 marks)
- 1.2.3 why glucose is an important ingredient in oral rehydration solutions. (20 marks)
2. Give physiological explanations for the following:
- 2.1 Presence of an ejection systolic murmur in patients with atrial septal defect. (25 marks)
- 2.2 Presence of hypertension in patients with coarctation of the aorta. (25 marks)
- 2.3 Development of respiratory distress syndrome in premature babies. (25 marks)
- 2.4 Development of polycythaemia in people who live in high altitudes. (25 marks)
- 3.0
- 3.1 List five conditions that lead to the reduction in extracellular fluid volume. (20 marks)
- 3.2 Describe how water is conserved by the (20 marks)
- 3.2.1 proximal convoluted tubule. (20 marks)
- 3.2.2 loop of Henle. (20 marks)
- 3.2.3 distal convoluted tubule. (20 marks)
- 3.2.4 collecting ducts. (20 marks)
- PART B
- 4.0
- 4.1 Explain the term osteomalacia. (15 marks)
- 4.2 List three causes for osteomalacia. (15 marks)
- 4.3 Explain the physiological basis for the development of osteomalacia by two of the causes mentioned in 4.2. (70 marks)
- 5.0 Write short notes on (25 marks)
- 5.1 Functions of the colon (25 marks)
- 5.2 Conditioned reflex (25 marks)
- 5.3 Hearing defects (25 marks)
- 5.4 Endemic goitre (25 marks)