

# NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

FACULTY OF APPLIED SCIENCES

BACHELOR OF SCIENCE HONOURS DEGREE EXAMINATIONS

DEPARTMENT OF APPLIED BIOLOGY AND BIOCHEMISTRY

## **THEORY: ADVANCED BIOCHEMISTRY SBB 4101**

May 2006

3 HOURS (100 marks)

### **INSTRUCTIONS**

Answer Four (4) Questions. 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 labelled diagrams.

1. Describe the Phillips mechanism of lysozyme action and give some evidence that has been gathered on the validity of Asp52 and Glu 35 involvement in this mechanism.
  
- 2.(a) What do you understand by the following in xenobiotic metabolism.
  - (i) lethal synthesis (1 mark)
  - (ii) conjugation (1 mark)
  
- (b) List factors that affect toxicity of a given compound. (3 marks)
  
- (c) Using appropriate examples, give an account of bioactivation inactivation of xenobiotics. (20 marks)
  
- 3.(a) Define the following terms;
  - (i) protein targeting (1 mark)
  - (ii) apoptosis (1 mark)
  
- (b) Give an account of the repair of DNA which has been damaged by alkylating agents. (15 marks)
  
- (c) Write notes on membrane assembly. (8 marks)
  
4. Describe the structural organization of a striated muscle and how contraction is accomplished
  
5. Write an account on gene rearrangement.
  
6. At any given time all the genes are present in all cells but only a few are expressed at a particular location. How then is gene expression achieved?

**END OF EXAMINATION**

