

NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

FACULTY OF APPLIED SCIENCES

BACHELOR OF SCIENCE HONOURS DEGREE EXAMINATIONS

DEPARTMENT OF APPLIED BIOLOGY AND BIOCHEMISTRY

THEORY: GENETICS 1204

JUNE 2004

2 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. Give an account of stages in meiosis and then explain using diagrams how non-distinction occurs.

2. Describe natural ways in which prokaryotic cells can exchange genetic material.

3. Discuss mutations and the effects they produce.

4. Write short notes on:
 - (a) RFLP (9 marks)
 - (b) RAPD (8 marks)
 - (c) PCR (8 marks)

5. Explain the (a) SANGER'S DNA SEQUENCING METHOD (12 marks)
(b) MAXAM GILBERT DNA SEQUENCING METHOD (13 marks)

6. Describe the organization of the genome in eukaryotes.

END OF EXAMINATION