



MASENO UNIVERSITY
UNIVERSITY EXAMINATIONS 2013/2014

FOURTH YEAR SECOND SEMESTER EXAMINATIONS FOR THE
DEGREE OF BACHELOR OF SCIENCE IN MEDICAL
LABORATORY SCIENCE; MEDICAL BIOTECHNOLOGY AND
PHARMACEUTICAL SCIENCE WITH INFORMATION
TECHNOLOGY
(MAIN CAMPUS)

PMT 446: MEDICAL GENETICS

Date: 10th April, 2014

Time: 2.45 – 5.00 p.m.

INSTRUCTIONS:

- Answer ALL questions in Section A and ANY TWO Questions in Section B.



PMT 446: MEDICAL GENETICS

SECTION A {40 MARKS}

Answer ALL questions. Use illustrations wherever appropriate.

- Q1. Describe how chromosomal rearrangements can lead to cancer. [10 marks]
- Q2. Outline the characteristics of multifactorial diseases. [10 marks]
- Q3. Briefly highlight the 'hallmarks of cancer'. [10 marks]
- Q4. Describe protein augmentation as a procedure for treating genetics defects. [10 marks]

SECTION B {30 MARKS}

Answer any TWO questions. Use illustrations wherever appropriate.

- Q5. Discuss the following phenomena using relevant examples
- a) Autosomal recessive single-gene diseases
 - b) X-chromosome linked dominant single gene diseases
 - c) Y-chromosome linked dominant single gene diseases
- [15 marks]
- Q6. Whole-genome association studies can inform efforts to understand the molecular basis of diseases. Discuss. [15 marks]
- Q7. Describe how gene transfer can be used in gene-based therapy. [15 marks]