



KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2011/2012

SECOND SEMESTER EXAMINATION FOR THE DEGREE OF SCIENCE AND BACHELOR OF EDUCATION

SZL 206: PRINCIPLES OF MOLECULAR GENETICS

DATE: Monday 2nd April 2012

TIME: 8.00a.m – 10.00a.m

INSTRUCTIONS

Answer ALL questions from Section A and any ONE Question from Section B. Within a Section, ALL questions carry equal marks. Illustrate your answers with diagrams and give examples wherever appropriate.

SECTION A: Answer ALL Questions.

1. Explain why Gregor Mendel is often considered the ‘father’ of genetics.
2. Distinguish between deletion and insertion mutations.
3. Explain the agarose gel electrophoretic procedure.
4. Describe the three roles of ribonucleic acid in protein synthesis.
5. Explain the term bioinformatics and the role of computers.
6. Describe the future prospects of human gene therapy.
7. Give an account of the mechanism of mitochondrial inheritance.
8. Explain the methods for immunological screening of expressed genes.

SECTION B: Answer ONE question

9. a) Discuss the mechanism of reverse transcription.
b) Outline the life cycle of HIV
10. Give an account of the laboratory requirements in working with nucleic acids.
11. Discuss the regulation of gene expression in the lac operon