



KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2010/2011

**FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF
SCIENCE**

SZH 200: MOLECULAR BIOLOGY

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DATE: MONDAY 22ND NOVEMBER 2010 TIME: 8.00 A.M. - 10.00 A.M.

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INSTRUCTIONS

Answer All questions in section A and one question in Section B.

Illustrate your answers with diagrams and give examples wherever appropriate.

SECTION A

Answer ALL Questions (40 marks)

1. Explain the meaning of the following:
 - a) Continuous replication
 - b) Okazaki fragments
 - c) DNA double helix
 - d) Hairpin loops in RNA
 - e) Base stacking in nucleic acids

2. Explain the experiments and findings of Griffith 1928, that gave pioneer evidence of genetic material.

3.
 - a) Explain the meaning of DNA complementary strands.
 - b) For the DNA strand, 5' - TACGATCATTAC - 3' work out the complementary strands.
4.
 - a) Outline the structure and functions of mRNA.
 - b) Give 3 examples of stop codons in DNA and state their function.
5. Explain briefly RNA processing in eukaryotic cells.
6. Briefly describe the process of transcription.
7. Explain possible roles of plasmid DNA in pathogenic bacteria.
8. Outline natural mechanisms of DNA mutation and repair.

SECTION B

Answer any one question (30 marks)

9. Discuss applications of recombinant DNA technology in disease management.
10. Discuss causes of DNA mutations in living cells.
11. Write an essay on protein synthesis.