

**W1-2-60-1-6**

## JOMO KENYATTA UNIVERSITY

**OF**

**AGRICULTURE AND TECHNOLOGY**

**UNIVERSITY EXAMINATIONS 2016/2017**

**YEAR THREE SEMESTER TWO EXAMINATIONS**

**SZL 2319: GENOME STRUCTURE AND EXPRESSION**

**DATE: JUNE 2017 TIME: 2 HOURS**

INSTRUCTIONS: ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER TWO QUESTIONS

QUESTION ONE (30 MARKS)

a) Explain the differences between prokaryotic and eukanyotic cells

(6 marks)

b) Explain the variability in genome organization in prokaryotes and eukaryotes (6 marks)

c) Disable the cell cycle with the aide of a diagram (6 marks)

d) Using appropriate illustrations, describe meiosis variations in females and males (6 marks)

e) Discuss briefly the stability of the genome in eukaryotes (6 marks)

QUESTION TWO (20 MARKS)

a) Discuss cell cycle regulation and its signature to the cell (10 marks)

b) Discuss RNA processing in eukaryotes (10 marks)

QUESTION THREE (20 MARKS)

a) Discuss DNA replication process (15 marks)

b) Explain ways through which meiosis generates diversity in organisms

(5 marks)

QUESTION FOUR (20 MARKS)

Discuss the components of eukaryotic genome

QUESTION FIVE (20 MARKS)

a) Describe briefly germ cells (5 marks)

b) Discuss propagation of genetic information to offsprings (10 marks)