



SOUTH EASTERN KENYA UNIVERSITY

UNIVERSITY EXAMINATIONS 2016/2017

SECOND SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURE, HORTICULTURE AND DRYLAND AGRICULTURE

SBL 418: MOLECULAR GENETICS

DATE: 11TH APRIL, 2017

TIME: 8.00 -10.00 AM

Instructions: ANSWER ALL QUESTIONS IN SECTION A
ANSWER ANY TWO QUESTIONS IN SECTION B

SECTION A (30 marks):

- 1) Describe four methods of DNA extraction (10 marks)
- 2) Explain the three Mendelian laws of inheritance (10 marks)
- 3) Briefly discuss sex-determination mechanism in humans (10 marks)

SECTION B (40 marks):

- 4) Describe polymerase chain reaction (PCR) (20 marks)
- 5) Briefly explain five non-Mendelian inheritance patterns (20 marks)
- 6) Discuss cell motility under the following topics:
 - a) Single cell movement (10 marks)
 - b) Transport across cell membranes (10 marks)