



# **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 305: PRINCIPLES OF GENETICS**

**DATE: 10<sup>TH</sup> APRIL, 2017**

**TIME: 10.30 - 12.30 PM**

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

**Time: 2 hours**

#### **SECTION A (30 marks):**

- 1) Discuss three main features used to identify and classify chromosomes (10 marks)
- 2) Briefly explain four main cell functions (10 marks)
- 3) Briefly discuss five sources of genetic variations (10 marks)

#### **SECTION B (40 marks):**

- 4) Discuss five exceptions to Mendel's principles of inheritance (20 marks)
- 5) Describe the structure and functions of the following:
  - a) Chromosomes (10 marks)
  - b) Genes (10 marks)
- 6) Briefly discuss the following:
  - a) DNA Replication (6 marks)
  - b) RNA Transcription (7 marks)
  - c) RNA Translation (7 marks)