

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

**JOMO KENYATTA UNIVERSITY**

**OF**

**AGRICULTURE AND TECHNOLOGY**

**UNIVERSITY EXAMINATIONS 2014/2015**

**YEAR 1 SEMESTER II EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN BIOTECHNOLOGY AND MICROBIOLOGY**

**SBT 2175: INTRODUCTION TO GENETICS**

**DATE: APRIL 2015 TIME: 2 HOURS**

**INSTRUCTIONS: Answer Question One and Any Other Two Questions**

**QUESTION ONE (30 MARKS)**

1. Define the following terms:
2. Test cross (2marks)
3. Dihybrid (2marks)
4. Pleiotrophy (2marks)
5. Non-disjunction (2marks)
6. Genome (2marks)
7. Giving examples, differentiate between
8. Co-dominance and incomplete dominance (4marks)
9. Recessive and dominant alleles (4marks)
10. Describe three types of RNA’s found in the cell. (6marks)
11. In Drosophila, gray body color (G) is dominant to ebony color (g) while long wings (W) are dominant to vestigial wings (w). Work out the cross through to F2 generation and determine the genotypic and phenotypic ratios for each generation, from the parent individual homozygous gray body color with long wings crossed with ebony color with vestigial wings. (6marks)

**QUESTION TWO (20 MARKS)**

Discuss the process of meiosis in Eukaryotes (20marks)

**QUESTION THREE (25 MARKS)**

Discuss chromosomal basis of sex determination. (20marks)

**QUESTION FOUR (20 MARKS)**

Discuss the basis of Mendel’s success in explaining inheritance of characters. (20marks)