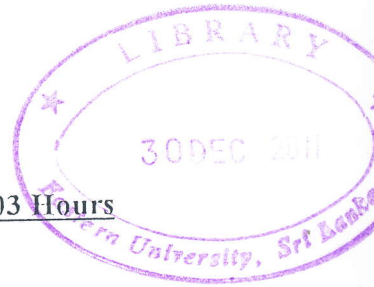


Eastern University, Sri Lanka
Second year First Semester Examination in Agriculture 2005/2006
(External Degree)
(February/March/April 2011)

AGB 2102 Principles of Genetics

Answer All Questions.

Time: 03 Hours



- Q1. Explain the following with suitable examples.
- Dominance and recessive genes
 - Co-dominance
 - Semi-dominance
- Q2. a) Define "Mendelian population"
b) A hypothetical population consists of the genotypes AA, Aa and aa at frequencies p^2 , $2pq$ and q^2 respectively. Show that this population is in genetic equilibrium if there is random mating taken place in this population. (Each step should be given clearly).
- Q3. Describe
- Process of crossing over
 - Procedure to determine the linkage relationship of genes in a tri hybrid genotype.
- Q4. Briefly discuss
- Prophase I of meiosis
 - Cell cycle
 - Interference and coincidence
- Q5. Describe the following
- Polyploidy and their characteristics
 - Translocation in chromosomes and its consequences
 - Polygenes and their behaviour
- Q6. It is suspected that the excretion of the strong odorous substance methanethiol is controlled by a recessive gene "m" in human population. If the frequency of "m" is 0.4 in Batticaloa human population, what is the frequency of finding two non-excretor boys and one excretor girl in the Batticaloa families of size three where both parents are non-excretors?
(Note that non-excretor is governed by the dominant allele "M")