



EASTERN UNIVERSITY, SRILANKA
Faculty of Agriculture
External Degree programme

Second year First semester Examination in Agriculture 2005/2006

(External Degree) (JUNE / JULY / AUGUST 2009)

Time: 03 hours

Answer all questions

1. Explain the following with suitable examples.
 - a) Dominance and recessiveness
 - b) Co-dominance
 - c) Semi-dominance

2. a) What is meant by "linkage" and "crossing over"
b) Discuss the procedure of gene mapping of a trihybrid individual in detail

3. Explain the concept of polygenic inheritance with a suitable example.

4. Write brief notes on the following
 - a) Cell cycle
 - b) Tetraploidy
 - c) Translocation in chromosomes

5. a) Describe a "Mendelian Population"
b) A hypothetical population consists of "A" and "a" alleles at frequencies p and q respectively. Show that a genetic equilibrium is maintained if the genotypes formed from random combination of these alleles undergo random mating (Give each step clearly).

6. It is suspected that the excretion of the strong odorous substance "methanethiol" is controlled by a recessive gene "m" in man. If the frequency of "m" is 0.4 in the Batticaloa population. What is the frequency of finding two non-excretor boys and one excretor girl in the families of Batticaloa of size three, where both parents are non-excretors? (Note that non-excretor is governed by the dominant allele M). All steps should be clearly shown.