

EASTERN UNIVERSITY, SRI LANKA

SECOND YEAR FIRST SEMESTER EXAMINATION IN AGRICULTURE – 2005/2006 (Mar. 2015)

AGB 2102 - PRINCIPLES OF GENETICS (3: 45/00)

EXTERNAL DEGREE

END SEMESTER EXAMINATION (RE-REPEAT)

Answer **all** questions

This paper should be answered in **English**

Time: **Three hours**

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1. a) Define the principles put forward by Father of Genetics, Mendel. (40 marks)
- b) What are the characteristics of polygenes? (30 marks)
- c) How is the pattern of inheritance of polygenes? (30 marks)
  
2. Explain the following with suitable examples;
  - a) Dominant and recessive genes (40 marks)
  - b) Co-dominance (30 marks)
  - c) Incomplete dominance (30 marks)
  
3. a) Describe “Mendelian Population”. (30 marks)
- b) Define Hardy-Weinberg Equilibrium. (30 marks)
- c) Briefly explain the conditions required for population in genetic equilibrium. (40 marks)
  
4. a) Explain: Linkage and Crossing Over”. (40 marks)
- b) What are the aspects considered in gene mapping? (30 marks)
- c) A trihybrid is test crossed to determine gene mapping;
  - i) Name the test cross genotype used.
  - ii) What are the different genotypes found in the progeny of the test cross? (30 marks)

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5. Briefly discuss the following:

- a) Tetraploidy (30 marks)
- b) Trisomics (30 marks)
- c) Polyploids (40 marks)

6. Write short notes on the following:

- a) Cell Cycle (30 marks)
- b) Prophase I of meiosis (40 marks)
- c) Interference and coincidence (30 marks)

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