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University Examinations 2013/2014

SECOND YEAR, FIRST SEMESTER EXAMINATIONS FOR DIPLOMA IN
AGRICULTURE

BIO 0111: GENETICS AND PLANT BREEDING

DATE: APRIL 2014

TIME: 1 ½ HOURS

INSTRUCTIONS: Answer question *one* and any other *two* questions

QUESTION ONE – (30 MARKS)

- (a) Explain the meaning of the following terminologies:
- (i) Genetics (5 Marks)
 - (ii) Homologous chromosomes (3 Marks)
 - (iii) Transgenic plants (7 Marks)
 - (iv) Gene (4 Marks)
 - (v) Cultivers (6 Marks)
- (b) Outline three principles of the cell theory. (5 Marks)
- (c) Describe various types of cultivars. (3 Marks)
- (d) Outline the disadvantages of mass selection in plant breeding. (7 Marks)
- (e) Describe the main players in the control of cell cycle. (4 Marks)
- (f) What are the plant features that facilitate cross pollination? (6 Marks)
- (5 Marks)

QUESTION TWO – (15 MARKS)

Describe mitosis. (15 Marks)

QUESTION THREE – (15 MARKS)

Describe Mendel dihybrid inheritance. (15 Marks)

QUESTION FOUR – (15 MARKS)

Discuss methods for breeding self pollinated crops.

(15 Marks)

QUESTION FIVE – (15 MARKS)

Discuss ways of selecting cross pollinating plants.

(15 Marks)