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# **UNIVERSITY OF KABIANGA**

**UNIVERSITY EXAMINATIONS**

**2014/2015 ACADEMIC YEAR**

**THIRD YEAR SECOND SEMESTER EXAMINATION**

**FOR THE DEGREE OF BACHELOR OF SCIENCE IN FORESTRY**

**COURSE CODE: FOR 322**

**COURSE TITLE: TREE GENETICS AND IMPROVEMENT**

***DATE: 24TH APRIL, 2015* *TIME: 2 P.M- 5 P.M***

**INSTRUCTIONS:**

***ANSWER ALL QUESTIONS IN SECTION A AND ANY OTHER TWO QUESTIONS IN SECTION B.***

**SECTION A: (30 marks)**

**Answer ALL questions**

1. Define the following terms:
2. Variations. (1.5 marks)
3. Inbreeding. (1.5 marks)
4. Genetic advance. (1.5 marks)
5. Provenance. (1.5 marks)
6. Write short notes on the following sources of variations:
7. Mutations. (1.5 marks)
8. Recombination. (1.5 marks)
9. Migration. (1.5 marks)
10. Ploidy levels. (1.5 marks)
11. Distinguish between the following terms;
12. Heritable and non-heritable variations. (2 marks)
13. Biotic and abiotic resistance. (2 marks)
14. Heterosis and inbreeding. (2 marks)
15. State the basic principles of selection. (6 marks)
16. Give reasons for planting native trees and shrubs of local provenance. (6 marks)

**SECTION B: (40 marks)**

**Answer Any Two Questions**

1. Outline and discuss the objectives of tree breeding. (20 marks)
2. Discuss breeding methods in tree improvement. (20 marks)
3. Describe the various methods of vegetative propagation. (20 marks)