



**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE &
TECHNOLOGY UNIVERSITY EXAMINATIONS 2012/2013**

**2ND YEAR 1ST SEMESTER EXAMINATION FOR THE DEGREE OF
BACHELOR OF SCIENCE IN FOOD SECURITY**

AGRI-BUSINESS MANAGEMENT

(REGULAR)

COURSE CODE: APT 3214

COURSE TITLE: PLANT GENETIC RESOURCES

DATE: 16 /8/13

TIME: 2.00 – 4.00 PM

DURATION: 2 HOURS

INSTRUCTIONS

- 1. This paper contains five (5) questions.**
- 2. Answer question 1 (compulsory) and ANY other TWO questions.**
- 3. Write all answer in the booklet provided.**

Answer **ALL** questions from **Section A** and **ANY TWO** questions from **Section B**.

SECTION A **[30 MARKS]**

1. Briefly explain the following terms, giving examples where necessary: [3 Marks]
 - a) Genetic resources
 - b) Genetic material
 - c) Biological resources

2. Differentiate between: [4 Marks]
 - a) In situ and ex situ conservation
 - b) Biotic and abiotic resources
 - c) Landraces and cultivars
 - d) Inventory and characterization of plant genetic resources

3. Give **four** (4) reasons why genebanks are considered to be an insurance policy for future agriculture. [4 Marks]

4. Explain why indigenous plant genetic resources are important to the attainment of food security in Africa. [5 Marks]

5. State any **three** (3) international centers involved in the management of plant genetic resources. [3 Marks]

6. State **six** (6) most common types of genebanks. [3 Marks]

7. Although the grain harvests have greatly increased over the last 60 years, this increase has been at the cost of substantial environmental damage. State and briefly explain any **four** forms of such environmental damages. [4 Marks]

8. Define the term conservation of plant genetic resources. [1 Mark]

9. Explain briefly the fundamental problem that conservation of genetic resources seeks to address. [2 Mark]

10. Why is genetic diversity important? [1 Mark]

SECTION B [40 MARKS]

11. To a greater extent than other parts of the world, Africa depends on biological resources, including plant genetic resources for its livelihoods. Discuss the importance of plant genetic resources in the socio-economic development of Africa. [20 Marks]
12. Schematically, present and discuss the global structure for the management of plant genetic resources for food and agriculture. [20 Marks]
13. Inventory, monitoring and characterization are of fundamental importance for sustainable use and development of national plant genetic resources. Discuss. [20 Marks]
14. Genebanks play a major role in the conservation of plant genetic resources. Discuss briefly the following genebank procedures: [20 Marks]
 - a) Collection
 - b) Registration
 - c) Sample processing
 - d) Seed drying
 - e) Seed packaging