

## JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY SCHOOL OF AGRICULTURAL AND FOOD SCIENCES

# FIRST YEAR FIRST SEMESTER UNIVERSITY EXAMINATION FOR THE DEGREE OF MASTER OF SCIENCE IN FOOD SECURITY AND SUSTAINABLE AGRICULTURE

#### 2020/2021 ACADEMIC YEAR

#### REGULAR

**COURSE CODE: AFB 5113** 

**COURSE TITLE: Agrobiodiversity Management** 

**EXAM VENUE:** STREAM: MSc. Food Security and Sustainable

Agriculture

DATE:16/2/21 EXAM SESSION:9-12.00 NOON

TIME: 3 HOURS

#### **Instructions:**

- 1. Answer question ONE and ANY other 2 Questions
- 2. **Candidates are advised to write on the text editor provided, or to write on a foolscap, scan and upload alongside the question**
- 3. Candidates must ensure they submit their work by clicking "finish and submit attempt" button at the end.

### **QUESTION 1** (Fill in the Missing word or words) a) Nutrient cycling and purification of water are both examples of ------[1 MARK] b) \_\_\_\_\_ biodiversity related to genes [1 MARK] c) Is not generally seen in biodiversity hotspots. [1 MARK] 1. Endemism 2. Species richness **3.** Loss of diversity 4. Lesser interspecific competition d) \_\_\_\_\_\_ is defined as the number of species represented in a specific region, landscape or an ecological community. [1 MARK] 1. Coevolution 2. Commensalism 3. Species richness **4.** Population density e) Global warming can significantly be controlled by \_\_\_\_\_ [1 MARK] 1. Increasing solid waste 2. Reducing water wastage **3.** Burning human-generated waste **4.** Reducing fossil fuel consumption f) Explain how human activities and management is affecting the agricultural biodiversity [5 MARKS]

g) Give three hypotheses for explaining why tropics show greatest levels of species richness

[5 MARKS]

h) How is a stable community identified?

[5 MARKS]

#### **QUESTION 2**

- a) Briefly give the views regarding the reasons for conserving biodiversity [5 MARKS]
- b) What are sacred groves? What is their role in conservation? [5 MARKS]
- c) Among the ecosystem services are control of floods and soil erosion. How is this achieved by the biotic components of the ecosystem? [5 MARKS]
- d) Can you think of a situation where we deliberately want to make a species extinct? How would you justify it? [5 MARKS]

#### **QUESTION 3**

- a) Which components and attributes of biodiversity are important to poor people? [5 MARKS]
- b) Can poor people reap the potential benefits of biodiversity? [5 MARKS]
- c) In what ways is biodiversity relevant to poor people? [5 MARKS]
- d) Can biodiversity conservation actions benefit the poor? [5 MARKS]

#### **QUESTION 4.**

Discuss efforts that has been done to manage biodiversity in agricultural ecosystems

[20 MARKS]