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

**UNIVERSITY EXAMINATION FOR DEGREE OF BACHELOR OF SCIENCE**

**IN FOOD SECURITY**

**SECOND YEAR SECOND SEMESTER 2013/2014 ACADEMIC YEAR**

 **REGULAR**

**COURSE CODE: AAS 3223**

**COURSE TITLE:Animal Genetic Resources**

**EXAM VENUE:LR 3 STREAM: BSc (Food Security)**

**DATE:11/12/14 EXAM SESSION: 9.00 – 11.00 AM**

**TIME: 2.00 HOURS**

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**Instructions:**

1. **Answer ALL question in Section A (compulsory) and ANY TWO questions in Section B.**
2. **Candidates are advised not to write on the question paper.**
3. **Candidates must hand in their answer booklets to the invigilator while in the examination room.**

**SECTION A [30 MARKS]**

**Answer ALL questions from this Section**

1. (a) Define the following terms:
2. Biological diversity. [1 mark]
3. Agricultural biodiversity. [1 mark]
4. Animal genetic resources. [1 mark]
5. State and explain any three roles of livestock. [3 marks]
6. i. Is Kenya a signatory to the UN Convention on Biological Diversity? [1 mark]

 ii. If (c) 1. above is yes, indicate the year it became a signatory. [1 mark]

iii. When did the UN Convention on Biological Diversity come into effect? [1 mark]

1. Explain the following terms in the context of management of animal genetic

resources(AnGR):

1. Inventory; [1 mark]
2. Characterization; and [1 mark]
3. Monitoring of population trends. [1 mark]
4. Agricultural biodiversity is a critical component of biodiversity? Explain. [3 marks]
5. Outline the types of information used to construct phylogenetic scheme. [5 marks]
6. Differentiate between *ex situin vivo*and *ex situin vitro* conservation methods. [2 marks]
7. State six factors responsible for loss of animal genetic resources. [3 marks]
8. How are the following livestock species classified in Kenya?
9. Cattle; and [3 marks]
10. Sheep. [2 marks]

**SECTION B[40 MARKS]**

**Answer ANY TWO questions from this Section.**

2. (a) Discuss how the risk of extinction is determined in animal genetic resources. [13 marks]

(b) Risk status can be categorized into various classes. Outline the classes. [10 marks]

3. (a) Animal genetic resources are important multiple roles in many countries. Discuss

 the social, economic and cultural importance of livestock. [10 marks]

 (b) Discuss the relationship between sustainable use and conservation of a breed. [10 marks]

1. (a) Explain the following terms in the context the context of AnGR.
2. A breed. [2 marks]
3. Cryopreservation. [2 marks]
4. Monitoring of population trends. [2 marks]
5. Sustainable use and development of animal genetic resources. [2 marks]
6. Levels of diversity. [2 marks]

(b) Identify and discuss objectives of conservation. [10 marks]