

**MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY**

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**University Examinations 2015/2016**

FOURTH YEAR, FIRST SEMESTER EXAMINATION FOR BACHELOR OF SCIENCE IN BIOLOGICAL SCIENCES

**SZL 2411: POPULATION ECOLOGY**

**DATE: NOVEMBER, 2015 TIME:** $2 $**HOURS**

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

**QUESTION ONE – (30 MARKS)**

1. Explain briefly the key determinants to the upper level of population density. (4 Marks)
2. Differentiate between exponential and logistic growth model of populations. (4 Marks)
3. Explain the ‘Shelfords law of Torelance’. (6 Marks)
4. Explain briefly two types of competition. (6 Marks)
5. Differentiate the terms ‘habitat’ and ‘niche’. (4 Marks)
6. Outline two main reproductive strategies that have evolved through natural selection for most organisms. (8 Marks)

**QUESTION TWO (20 MARKS)**

a) Explain and illustrate the types of survisorship curves. (10 Marks)

b) Discuss the key elements of demographic process. (10 Marks)

**QUESTION THREE (20 MARKS)**

a) Discuss the concept of interspecific competition giving examples among different species.

(10 Marks)

b) Explain the concept of carrying capacity. (10 Marks)

**QUESTION FOUR (20 MARKS)**

1. Discuss the concept of limiting factors. (10 Marks)
2. Explain the evolutionary and ecological significance of character displacement (10 Marks)