



MACHAKOS UNIVERSITY

University Examinations for 2016/2017 Academic Year

SCHOOL OF AGRICULTURE AND NATURAL RESOURCES MANAGEMENT

DEPARTMENT OF AGRICULTURAL EDUCATION AND EXTENSION

**FOURTH YEAR FIRST SEMESTER EXAMINATION FOR
BACHELOR OF AGRICULTURAL EDUCATION AND EXTENSION AND
THIRD YEAR FIRST SEMESTER EXAMINATION FOR BACHELOR OF
ENVIRONMENTAL STUDIES**

ERC 304: AGROFORESTRY SYSTEMS AND PRACTICES

DATE: 1/8/2017

TIME: 2 HOURS

Instructions:

Answer ALL questions in section A and ANY TWO questions in section B

SECTION A: (COMPULSORY)

QUESTION ONE (30 MARKS)

- a) Explain the differences between the following terms used in agroforestry (6 marks)
 - i) Taungya and shifting cultivation
 - ii) Community forestry and agroforestry
 - iii) Silvo-agropasture and agro-silvopasture
- b) Discuss the three main attributes of agroforestry (6 marks)
- c) Describe three major functions of agroforestry systems (6 marks)
- d) Explain three factors that influence landowner adoption of agroforestry practices (6 marks)
- e) Discuss the six major characteristics used in the selection of tree species for fuelwood production. (6 marks)

SECTION B: ANSWER ANY OTHER TWO QUESTIONS (40 MARKS)

QUESTION TWO (20 MARKS)

- a) As an officer in charge of overseeing the implementation of on-farm activities in the farmers' fields in your area of work, discuss the four guiding criteria you would use to determine whether the practices being implemented are agroforestry in nature or not. (12 marks)
- b) Explain the four broad criteria commonly used in classifying agroforestry systems. (8 marks)

QUESTION THREE (20 MARKS)

- a) Discuss three positive and three negative interactions commonly found at the tree-crop interface in tropical agroforestry. (12 marks)
- b) Explain the four major factors considered in the research and development of agroforestry practices. (8 marks)

QUESTION FOUR (20 MARKS)

Farm families in tropical Africa can benefit from agroforestry in terms of food, nutrition and income security. Discuss. (20 marks)

QUESTION FIVE (20 MARKS)

- a) You have been posted in Machakos as an environment conservation/agricultural extension officer. Describe five agroforestry practices you would recommend to the farmers to use in their croplands. (15 marks)
- b) Discuss five major roles of multipurpose “trubs” in tropical agroforestry systems (5 marks)