



EMBU UNIVERSITY COLLEGE
(A Constituent College of the University of Nairobi)

2015/2016 ACADEMIC YEAR
SECOND SEMESTER EXAMINATION

FIRST YEAR EXAMINATION FOR THE DEGREE OF BACHELOR OF
SCIENCE (MANAGEMENT OF AGROECOSYSTEMS AND ENVIRONMENT)

AEM 102: AGROECOLOGY 1

DATE: APRIL 12, 2016

TIME: 08:30-10:30

INSTRUCTIONS:

Answer Question ONE and ANY Other TWO Questions

QUESTION ONE

- a) i) Define the term agro-ecosystem. (2 Marks)
- ii) State abiotic and biotic components of an agroecosystem. (6 Marks)
- b) Explain three advantages of agriculture to smallholder farmers in the EUC environ? (5 Marks)
- c) i) Explain shift cultivation. (2 Marks)
- ii) State the two reasons why it is difficult to practice such a cropping system in Kenya. (2 Marks)
- d) State five ecological principles that can help us improve the management agro-ecosystems in a sustainable way. (5 Marks)

e) Explain the following terms in relation to interaction of species within an ecosystem, giving an example in each category.

i) Mutualism (2 Marks)

ii) Predators (2 Marks)

iii) Parasitism (2 Marks)

iv) Decomposers (2 Marks)

QUESTION TWO

a) Explain the term ecosystem services. (4 Marks)

b) Discuss the categorization principle of ecosystem services. (8 Marks)

c) Explain the importance of organic carbon matter as an ecosystem service. (8 Marks)

QUESTION THREE

a) Describe the energy flow in a food web. (4 Marks)

b) With the aid of a diagram, illustrate a food chain and food web. (16 Marks)

QUESTION FOUR

a) Discuss the cropping systems used by smallholder farmers within the environs of EUC and their advantages. (10 Marks)

b) Discuss factors that affect crop growth in smallholder farms. (10 Marks)

QUESTION FIVE

a) Discuss the human activities that can accelerate soil erosion. (10 Marks)

b) Explain methods used to prevent soil erosion in smallholder agroecosystems.

(10 Marks)

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