



MACHAKOS UNIVERSITY

University Examinations for 2016/2017 Academic Year

SCHOOL OF AGRICULTURE AND NATURAL RESOURCES MANAGEMENT

DEPARTMENT OF ENVIRONMENTAL STUDIES

THIRD YEAR FIRST SEMESTER EXAMINATION FOR BACHELOR OF ENVIRONMENTAL STUDIES (ENVIRONMENTAL RESOURCE CONSERVATION)

ERC 316: MULTIPLE USE FOREST MANAGEMENT

Date:

Time:

Instructions: Answer question ONE and any other TWO

SECTION A (30 Marks)

1. (a) Differentiate between the following terms:

- i. Forest and forest ecosystem *(2 marks)*
- ii. Forest management and sustainable forest management *(2 marks)*

(b) Outline the roles of the following institutions in management of the forest sector in Kenya

- i. Kenya National Museums *(3 marks)*
- ii. Kenya Wildlife Service *(3 marks)*

(c) While managing Mt. Elgon forest ecosystem, Mr. Lubalo decided to eradicate forest fires from the ecosystem. Explain why his actions may end up detrimental to the ecosystem in the long run *(5marks)*

(d) In a typical rural set up, forests play a critical role in maintaining rural livelihoods. Explain *(5marks)*

(e) After managing Mt. Kenya forest ecosystem for 20 years, Mr. Katelevuli observed the following:

- i. A decrease in plant species was accompanied by a decline in animal diversity.
Explain this phenomena *(3 marks)*
- ii. An increase in forest stratification resulted to increased animal diversity. Explain
(2 marks)
- (f) Write explanatory notes on conditions required for forest fires to occur *(5 marks)*

SECTION B: (40 marks)

2. In the 21st century, forests are managed for critical uses other than timber. Use Mau forests complex to discuss this statement *(20 marks)*
3. Use illustrations to explain the global carbon status *(20 marks)*
4. Explain the following concepts in relation to forest fires
- (a) Prescribed burning *(10 marks)*
- (b). Fire dependence *(10 marks)*
5. Discuss the role of forests in mitigation of global warming *(20 marks)*