MAASAI MARA UNIVERSITY

REGULAR UNIVERSITY EXAMINATIONS
2017/2018 ACADEMIC YEAR
THIRD YEAR FIRST SEMESTER

SCHOOL OF TOURISM AND NATURAL RESOURCE MANAGEMENT
BACHELOR OF FOREST ECOSYSTEMS MANAGEMENT

COURSE CODE: FOR 314
COURSE TITLE: FOREST ENTOMOLOGY

DATE: 20TH APRIL, 2018 **TIME: 0830 – 1030HRS**

INSTRUCTIONS TO CANDIDATES

Answer **ALL** questions in section **A,** and any other **THREE** in section **B.**

This paper consists of 3 printed pages. Please turn over.

SECTION A. (25 marks): Answer ALL questions

1. Define forest entomology and highlight its scope **(5 marks)**
2. You have been appointed in Kenya as the head of Forest Entomology division in a public forestry enterprise whose activities cover the whole country. Briefly highlight what you would expect to be the likely goals of the division you are to head **(4 marks)**
3. Both forest entomologists and forest managers play very important roles that contribute to the achievement of the goals you have highlighted in question 2 above. Identify the roles of;
    i. Forest entomologist **(3 marks)**
    ii. Forest managers **(3 marks)**

4. Highlight four parameters of forest insects that are largely influenced by biotic and abiotic attributes of a forest habitat **(4 marks)**

5. Explain the following terms with reference to severity of forest insect pest attack;
    i. Host Stress **(3 marks)**
    ii. Food quality **(3 marks)**

SECTION B (45 marks): Answer ANY THREE questions

6. a) Explain the term "diapause" as used in forest entomology and highlight its cause and importance **(7 marks)**

b) Describe different kinds of damage caused by insects and their impacts on forestry development in Kenya **(5 marks)**

c) Explain how insect populations can influence the structure of forest communities **(3 marks)**

7. Discuss the term 'biological control of forest insect pests' with particular focus on;
    i. Definition of the term **(1 mark)**
    ii. Merits and demerits of the pest control method (4 marks)
    iii. Examples of the most successful insect taxonomic orders and families as biological control agent **(6 marks)**
    iv. At least two cases where biological control method has been used to control forest insect pests in Kenya **(4 marks)**

8. Discuss the biology, ecology and control of any one of the following forest insects **(15 Marks)**
    i. *Pineus pini* Gmelin (Homoptera: Adelgidae).
    ii. *Leptocybe invasa* L Salle (Hymenoptera: Eulophidae).

9. Discuss forest insect pest outbreaks with reference to their types, causes and consequences **(15 marks)**

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