



UNIVERSITY OF EMBU

2016/2017 ACADEMIC YEAR

FIRST SEMESTER EXAMINATION 2016/2017

FOURTH YEAR EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE
IN AGROECOSYSTEM MANAGEMENT

AEM 403: PRINCIPLES OF ENVIRONMENTAL AND INDUSTRIAL TOXICOLOGY

DATE: NOVEMBER 30, 2016

TIME: 11:00AM-1:00PM

INSTRUCTIONS:

Answer Question ONE and ANY Other TWO Questions.

QUESTION ONE (30 MARKS)

- a) Explain the difference between bioaccumulation and bioconcentration (5 marks)
- b) Compare the functionality of organochloride and organophosphates (5 marks)
- c) Explain how biodiversity acts as an indicator of ecosystem health (5 marks)
- d) Explain five elements of a healthy ecosystem (5 marks)
- e) Describe health hazards that may exist indoors (5 marks)
- f) Explain the most commonly measured endpoints in a toxicity test: (5 marks)

QUESTION TWO (20 MARKS)

- a) Describe a typical dose response curve (10 marks)
- b) Explain the adverse effects of mercury as a pesticide (10 marks)

QUESTION THREE (20 MARKS)

- a) Discuss the primary benefits of using pesticides (15 marks)
- b) Explain the functions of the different categories of Biopesticides (5 marks)

QUESTION FOUR (20 MARKS)

- a) Discuss environmental effects of toxins (10 marks)
- b) Analyze the various routes taken by industrial toxicants into the environment (10 marks)

QUESTION FIVE (20 MARKS)

- a) Using an example describe how biomagnification occurs (5 marks)
- b) Discuss the general requirements for choosing a test species for use in a toxicity test (15 marks)

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