



MACHAKOS UNIVERSITY

University Examinations for 2018/2019 Academic Year

SCHOOL OF ENVIRONMENT AND NATURAL RESOURCES MANAGEMENT

DEPARTMENT OF ENVIRONMENTAL SCIENCES

SECOND YEAR SPECIAL/SUPPLEMENTARY EXAMINATION FOR

BACHELOR OF ENVIRONMENTAL STUDIES (RESOURCE CONSERVATION)

EPM 244: WASTE MANAGEMENT PLANNING

DATE: 24/7/2019

TIME: 2.00-4.00 PM

INSTRUCTIONS:

Answer question ONE and any other TWO questions

Use illustrations where necessary.

QUESTION ONE (COMPULSORY – 30 MARKS)

- a) Discuss various factors to consider when developing a waste management plan. (10 marks)
- b) Explain the following concepts as used in waste management
- i. Polluter pays principle (2 marks)
 - ii. Hazardous waste (2 marks)
 - iii. Waste hierarchy (2 marks)
 - iv. Deposit refund systems (2 marks)
 - v. Extended producer responsibility (2 marks)
- c) Outline the environmental impacts of waste management. (5 marks)
- d) Explain the factors you consider when siting a sanitary landfill. (5 marks)

QUESTION TWO (20 MARKS)

Discuss the functions of the following tools and instruments in waste management

- a) Standards (5 marks)
- b) Permit and licenses (5 marks)
- c) Pollution charges (5 marks)
- d) Land and water use control (5 marks)

QUESTION THREE (20 MARKS)

Identify the various stakeholders involved in waste management and explain their roles

QUESTION FOUR (20 MARKS)

Identify and discuss the socio economic and cultural factors that influence waste management

QUESTION FIVE (20 MARKS)

- a) Using relevant examples distinguish, between Biodegradable and Non-Biodegradable solid waste (6 marks)
- b) Explain the three goals of Municipal Solid Waste Management. (14 marks)
- c) Identify and discuss various waste management challenges and their possible solutions (20 marks)