



MACHAKOS UNIVERSITY

University Examinations for 2020/2021

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF ELECTRICAL AND ELECTRONIC ENGINEERING

FIFTH YEAR FIRST SEMESTER EXAMINATION FOR

**BACHELOR OF (SCIENCE IN ELECTRICAL AND ELECTRONICS
ENGINEERING)**

EEE 507 ENERGY MANAGEMENT AND ENVIRONMENTAL PROTECTION

DATE: 12/8/2021

TIME: 8:30 – 10:30 AM

INSTRUCTIONS:

Answer Question One and Any Other Two Questions

QUESTION ONE (COMPULSORY) (30 MARKS)

- a) Compare nuclear energy and geothermal energy (6 marks)
- b) What are some of the challenges faced in recycling paper and plastics? (4 marks)
- c) How do primary energy sources differ from secondary primary sources? Give examples of each. (5 marks)
- d) Discuss the 3 main important aspects of nature (6 marks)
- e) What are the control measures of thermal pollution? (6 marks)
- f) Differentiate municipal sanitary landfill from an open dump (3 marks)

QUESTION TWO (20 MARKS)

- a) Outline the courses of ground water pollution (7 marks)
- b) What are the disadvantages of wind Energy? (5 marks)
- c) From an ecological perspective how can pollutants be classified? (8 marks)

QUESTION THREE (20 MARKS)

- a) Outline the EIA guiding principles (8 marks)
- b) Environmental destruction is largely caused by the consumption of the rich. Debate (12 marks)

QUESTION FOUR (20 MARKS)

- a) List 4 control techniques of noise pollution (4 marks)
- b) What are some of the effects of air pollution? (6 marks)
- c) List 6 advantages of bio gas technology (6 marks)
- d) Differentiate solar thermal plants and photovoltaic systems (4 marks)

QUESTION FIVE (20 MARKS)

- a) What are the key things involved in an effective EMS? (9 marks)
- b) What are the steps followed in environmental impact assessment in Kenya? (7 marks)
- c) What role can you play in conserving the environment? (4 marks)