MACHAKOS UNIVERSITY

SCHOOL OF ENGINEERING AND TECHNOLOGY

UNIVERSITY EXAMINATIONS – 2024

FIFTH YEAR FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN ELECTRICAL AND ELECTRONICS ENGINEERING

EEE 507 ENERGY MANAGEMENT AND ENVIRONMENTAL PROTECTION

Question 1 (30 marks)

a) Compare nuclear energy and geothermal energy **(6 marks)**

b) Highlight four 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 2 (20 marks)

a) Outline the courses of ground water pollution **(6 marks)**

b) Wind and Solar energy are both renewable energy sources, why would one choose one over the other? Discuss both cases. **(6 marks)**

c) From an ecological perspective how can pollutants be classified? **(8 marks)**

Question 3 (20 marks)

a) Outline the EIA guiding principles **(8 marks)**

b) Environmental destruction is largely caused by the consumption of the rich. Debate **(12marks)**

Question 4 (20 marks)

a) A certain church would like to construct a church in a residential location, what are some of the things you'd advise them to consider before getting the NEMA approval? **(10 marks)**

b) Discuss 5 effects of air pollution **(10 marks)**

Question 5 (20 marks)

a) Discuss the elements of an EMS **(12 marks)**

b) Considering your university, discuss the measures it has taken to conserve the environment **(8 marks)**