



TECHNICAL UNIVERSITY OF MOMBASA

Faculty of Applied and Health Sciences

Department of Environment & Health Sciences

UNIVERSITY EXAMINATION FOR:

BACHELOR OF TECHNOLOGY IN RENEWABLE ENERGY

BTRE14S/YEAR 4/SEMESTER 1

AES 4431 ENERGY MANAGEMENT AND AUDIT

SPECIAL/ SUPPLIMENTARY EXAMINATIONS

SERIES: SEP 2018

TIME: 2 HOURS

Instructions to Candidates

This paper consists of FIVE questions

Answer question ONE (COMPULSORY) and any other TWO questions.

This paper consists of two printed pages.

Mobile phones are NOT allowed in the examination room

Question 1 (30mks)

- a. Differentiate the following terms as used in energy management (6mks)
 - i. Energy management and energy audit
 - ii. Commercial energy and non-commercial energy
 - iii. Waste heat recovery and cogeneration
- b. Outline four ways Kenya can reduce energy consumption in the transport sector (4mks)
- c. Explain the need for training in the implementation of an energy management system (4mks)
- d. Outline functions the role of an energy policy in for a company (4mks)
- e. Briefly describe four reasons why pre-audit Inspection is important In energy management (4mks)
- f. Describe the four roles of the nuclear Nuclear energy board in Kenya (4mks)
- g. Outline four ways Kenya can achieve energy security (4mks)

Question 2 (20mks)

You have been asked to carry out an energy audit for an iron sheet manufacturing factory. Explain at least five steps you will take in carrying out this activity.

Question 3 (20mks)

Describe the importance of implementing energy management system standard ISO 5001 to an organization

Question 4

- a) What is energy security? (2mks)
- b) Discuss Kenya's strategy in energy management as described in the energy policy of 2015 under the following headlines (18mks)
 - i. Short term
 - ii. Medium term
 - iii.** Long term

Question 5 (20mks)

Discuss the challenges facing Kenya's ability to achieve nuclear power generation