KIBABII UNIVERSITY

2017/2018 ACADEMIC YEAR

FOURTH YEAR SECOND SEMESTER

MAIN EXAMINATIONS

FOR THE DEGREE OF BACHELOR OF SCIENCE IN RENEWABLE ENERGY AND BIOFUELS TECHNOLOGY

COURSE CODE: IET 423

COURSE TITLE: SUSTAINABLE ARCHITECTURE

DATE: 7/8/2018 **TIME: 9-11PM**

INSTRUCTIONS TO CANDIDATES

Answer question ONE and any other two questions

This paper consists of 4 printed pages. Please Turn over

INSTRUCTIONS

Answer question 1 and any other two (2) questions

Time: 2 hours

QUESTION 1 (30 marks)

a. Describe any five (5) renewable Energy Technologies (15 marks).
b. Describe any five (5) ways of ensuring home energy efficiency (15 marks).

QUESTION 2 (20 marks)

a. Explain any five (5) passive solar design principles (10 marks).
b. Define the following terms: MicroCHP, Sun path diagrams, Azimuth, solar altitude angle and Zenith (10 marks).

QUESTION 3 (20 marks)

Discuss any five (5) categories of heat exchangers in industrial heat recovery systems.

QUESTION 4 (20 marks)

a. Describe how Rammed earth and cob structures are constructed (10 marks).
b. Describe any five (5) sustainable building techniques (10 marks).

QUESTION 5 (20 marks)

a. List any five (5) BREEAM & Eco homes design aspects and their aim (10 marks).
b. Describe any (5) Key BedZED principles (10 marks).