



# KIBABII UNIVERSITY

UNIVERSITY EXAMINATIONS  
2017/2018 ACADEMIC YEAR

THIRD YEAR FIRST SEMESTER  
SUPPLEMENTARY / SPECIAL EXAMINATIONS

FOR THE BACHELOR OF RENEWABLE ENERGY AND BIOFUELS  
TECHNOLOGY

COURSE CODE: IET 313

COURSE TITLE: GEOTHERMAL ENERGY

DURATION: 2 HOURS

DATE: 15/10/2018

TIME: 3:00-5:00PM

---

## INSTRUCTIONS TO CANDIDATES

- Answer **QUESTION ONE** (Compulsory) and any other two (2) Questions.
- Indicate **answered questions** on the front cover.
- Start every question on a new page and make sure question's number is written on each page.

This paper consists of 4 printed pages. Please Turn Over



(13) (15)

**Question 1**

- a) Describe the working principles of Geothermal Energy from the structure of the earth and the dynamic mechanisms (10Mks)
- b) Explain the five features of a hydrothermal geothermal resource giving a perspective of sufficient permeability (5Mks)
- c) In details Explain all the Phases of an exploration program (15Mks)

**Question 2**

Explain in your own words the general environmental concerns about Geothermal power plants (20Mks)

**Question 3**

- a) List and describe the principal components of the geothermal power plant are as follows. (10Mks)
- b) Describe the general working principle of a Geothermal Power Plant (10Mks)

**Question 4**

- a) Describe the Working Principle of a Flash steam power plants (10Mks)
- b) Describe the Working Principle of a Binary power plants (10Mks)

**Question 5**

- a) Describe the Advantages and Disadvantages of Geothermal Energy (20Mks)