TECHNICAL UNIVERSITY OF MOMBASA

Faculty of Engineering and Technology

Department of BUILDING & Civil engineering

UNIVERSITY EXAMINATION FOR:

BACHELOR OF SCIENCE IN CIVIL ENGINEERING

EAR 4101: GEOLOGY & CLIMATOLOGY

END OF SEMESTER EXAMINATION

SERIES: DECEMBER 2016

TIME: 2 HOURS

DATE: 15 Dec 2016

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

-Drawing instruments.

This paper consists of five questions.

Attempt question ONE (Compulsory) and any other TWO questions.

Do not write on the question paper.

Q1. (a) Discuss Bioclimatic factors that affect architectural expression (9 marks)

(b) Differentiate between the following;

(i) Climate and weather

(ii) outer core and inner core

(iii) Mineral and Crystal

(iv) Micro-climate and Macro-climate (8 marks)

(c) Discuss the geologic factors that affect Architectural expression (13 marks)

Q2. (a)

Briefly discuss Geo-Engineering (10 marks)

(b)

With appropriate examples explain the role of geologic considerations in selection of stone for architectural use

(6 marks)

(c)

Explain the classification of metamorphic rocks (4 marks)

Q3. (a)

i. List three agents of metamorphism

ii. Explain the processes which the listed agents in 3 a(i) cause metamorphism.

(6 marks)

(b)

Discuss three criteria used in classifying the atmosphere

(14 marks)

Q4 (a)

Distinguish three time frames which climate data can be grouped (6 marks)

(b)

i. Explain the term "Climate proxy"

ii. Describe Six indirect methods for analyzing climate change (8 marks)

(c) Describe Six igneous intrusive structures (6 marks)

Q5. (a) Discuss the criteria used in classification of the atmosphere (12 marks)

(b) With appropriate examples briefly discuss four agents of erosion and deposition.

(8 marks)