



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 the four elements of air movement (8 marks)
- (b) Differentiate between the following;
- (i) lithosphere and asthenosphere
 - (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 (8 marks)
- Q2. (a) Briefly discuss Geo-Engineering (10 marks)
- (b) With appropriate examples explain the role of geology in Architectural conservation (6 marks)
- (c) Explain factors that affect igneous rock textures (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)
- i. Explain Pollution
 - ii. Discuss natural factors that affect air pollution. (14 marks)
- Q4 (a) Discuss three factors that affect the global energy balance (6 marks)
- (b)
- i. Explain the term “Climate proxy”
 - ii. Describe Six indirect methods for analyzing climate change (8 marks)
- (c) i) Explain the sedimentary process
- ii) Define the following textural terms:-
 - Granoblastic
 - Porphyritic (6 marks)

Q5. (a)

Briefly describe three criteria classification of the atmosphere (12 marks)

(b)

With appropriate examples briefly discuss four agents of erosion and deposition.(8 marks)