



**DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY**

**UNIVERSITY EXAMINATIONS 2020/2021 ACADEMIC YEAR**

**THIRD YEAR FIRST SEMESTER EXAMINATION FOR THE DEGREE OF  
BACHELOR OF SCIENCE IN CIVIL ENGINEERING**

**ECE 3106: ENGINEERING GEOLOGY**

**DATE: 21<sup>ST</sup> SEPTEMBER 2021**

**TIME: 11:00AM-1:00PM**

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**INSTRUCTIONS TO CANDIDATES**

- This paper contains **FOUR** questions
- Answer question **ONE** and any other **TWO** questions
- No mobile phones allowed in the examination room

**THIS PAPER CONSISTS OF (2) PRINTED PAGES**

**QUESTION ONE (30 MARKS) - COMPULSORY**

- a) Discuss the two factors considered when measuring earthquakes and their respective measuring scales [6 Marks]
- b) List any FOUR ways geologists contribute to the society [4 Marks]
- c) Discuss THREE types of weathering in geology [6 marks]
- d) Discuss the difference between the following terms used in geology [4 marks]
  - i. Paleontology and Petrology
  - ii. Transform plate boundaries and intraplate boundaries
- e) Discuss the TWO ways in which the earth moves and the effect of these movement [4 marks]
- f) Discuss FOUR important aspects that define a mineral [4 marks]
- g) Explain the relationship between Engineering Geologist and a Civil Engineer. [2 Marks]

**QUESTION TWO (20 MARKS)**

- a) Discuss the THREE hypotheses on the formation of planets [9 Marks]
- b) Discuss THREE evidences used by Wegener to support the Continental Drift Theory [3 Marks]
- c) Discuss any FOUR properties used for mineral identification. [8 Marks]

**QUESTION THREE (20 MARKS)**

- a) What is the difference between fractures, joints and faults in structural geology? [3 Marks]
- b) With aid of diagrams, discuss THREE forces that results to the formation of faults [9 Marks]
- c) Describe any TWO uses of the Igneous rocks [2 Marks]
- d) Distinguish between drift edition and solid edition types of maps and explain the TWO types of drift edition maps. [6 Marks]

**QUESTION FOUR (20 MARKS)**

- a) Describe THREE processes of the rock cycle [6 Marks]
- b) Describe any TWO things we should know about an area in order to help minimize the impacts of an earthquake? [2 Marks]
- c) Describe THREE ways of rock failure may occur during rock excavation in a quarry. [6 Marks]
- d) Outline the THREE phases involved in a site investigation [6 Marks]