



**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY**  
**SCHOOL OF ENGINEERING AND TECHNOLOGY**  
**UNIVERSITY EXAMINATION FOR DIPLOMA IN BUILDING AND CIVIL**  
**ENGINEERING**  
**1<sup>ST</sup> YEAR 2<sup>ND</sup> SEMESTER 2015/2016 ACADEMIC YEAR**  
**MAIN CAMPUS**

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**COURSE CODE: TBC 2123**

**COURSE TITLE: ENGINEERING GEOLOGY**

**EXAM VENUE: LR 2**

**STREAM: (Dip. Building & Civil Eng.)**

**DATE: 20/04/16**

**EXAM SESSION: 11.30 -1.00 PM**

**TIME: 1 ½ HOURS**

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**Instructions:**

- 1. Answer Question ONE (COMPULSORY) and ANY other 2 questions**
- 2. Candidates are advised not to write on the question paper.**
- 3. Candidates must hand in their answer booklets to the invigilator while in the room**

### QUESTION ONE

- a) State FOUR applications of geology in civil engineering or building Science. (8 marks)
- b) With the aid of a neat sketch, describe discontinuities as encountered in the internal structure of the earth. (6 marks)
- c) Describe any TWO time scales used in geologic studies. (4 marks)
- d) Define the following branches of geology:
- i. Crystallography
  - ii. Geotechnics (6 marks)
- e) Define surface methods of site investigation. (6 marks)

### QUESTION TWO

- a) Explain any THREE common features of igneous rocks which make them suitable for construction works. (9 marks)
- b) State any THREE properties you may consider when selecting rocks for use as building materials. (6 marks)

### QUESTION THREE

- a) Explain how the mineral composition of any rock can influence its suitability as a building material. (7 marks)
- b) Explain how the physical properties can be used to identify different minerals.
- i. Optical properties
  - ii. colour

(8 marks)

### QUESTION FOUR

- (a) Define the following terms as used in structural geology
- i. Strata
  - ii. Bedding
  - iii. Dip
  - iv. Strike
  - v. Outcrop
  - vi. Unconformity (9 marks)
- (b) With the aid of a neat sketch, distinguish between symmetrical and asymmetrical fold. (6 marks)

### QUESTION FIVE

- (a) Explain why site investigation is necessary in building and civil engineering works (5 marks)
- (b) Explain any THREE phenomena which may be of interest in geological investigation at dam site (10 marks)