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# KIBABII UNIVERSITY

**UNIVERSITY EXAMINATIONS  
2017/2018 ACADEMIC YEAR**

**FOURTH YEAR SECOND SEMESTER  
SPECIAL/SUPPLEMENTARY EXAMINATIONS**

**FOR THE DEGREE OF B.SC (AGRICULTURE & BIOTECH)**

**COURSE CODE: SAB 415**

**COURSE TITLE: SOIL AND WATER CONSERVATION**

**DATE: 8<sup>TH</sup> OCTOBER 2018**

**TIME: 3 – 5 PM**

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**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 **3** printed pages. Please Turn Over



KIBU observes ZERO tolerance to examination cheating

### QUESTION ONE (COMPULSORY) – (30 MARKS)

- a) Briefly discuss the physical measures of soil and water conservation (5 Marks)
- b) Briefly discuss the concept water conservation (3 Marks)
- c) Define soil erosion (3 Marks)
- d) Explain the problems encountered while implementing soil and water conservation activities (3 Marks)
- e) Explain the consequences of poor watershed management (2 Marks)
- f) Describe the role of three main agents of soil erosion (4 Marks)
- g) Define each parameter in Universal Soil Loss Equation (USLE) (6 Marks)
- h) In the context of the design of soil and water conservation measures outline the importance of:
  - i) Horizontal interval (2 Marks)
  - ii) Vertical interval (2 Marks)

### QUESTION TWO (20 MARKS)

- a) Discuss three survey equipment used for angle measurement in designing soil and water conservation (4 Marks)
- b) Discuss how CHAPTER 318: AGRICULTURE ACT - Revised Edition 2012 [1986] is applied in soil and water conservation (8 Marks)
- c) Discuss the process of wind erosion (8 Marks)

### QUESTION THREE (20 MARKS)

- a) Discuss three groups of soil and water conservation methods in preventing erosion (12 Marks)
- b) Describe how gully erosion comes about (8 Marks)

### QUESTION FOUR (20 MARKS)

- a) Briefly explain the factors that lead to watershed deterioration (8 Marks)
- b) Discuss the consequences of water shed deterioration (6 Marks)
- c) In watershed management, watershed operation is influenced by natural factors, briefly discuss these factors (6 Marks)

**QUESTION FIVE (20 MARKS)**

- a) Briefly discuss agronomic measures used in soil and water conservation (10 Marks)
- b) Discuss the characteristics of surface run-off in determining the amounts of runoff for design of SWC structures (6 Marks)
- c) What are the catchment factors that affect run-off? (4 marks)