

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

**EXAMINATION FOR THE AWARD OF DEGREE OF
BACHELOR OF SCIENCE AGRICULTURAL EDUCATION**

AGEN 352: SOIL AND WATER MANAGEMENT

STREAMS: BSC (AGRIC/HORT)

TIME: 2 HOURS

DAY/DATE: MONDAY 03/12/2018

8.30 AM – 10.30 AM

INSTRUCTIONS:

Answer ALL Questions in Section 1 and Two Questions in Section II

SECTION A (30 MARKS): ANSWER ALL QUESTIONS

1. Explain survey [2 marks]
2. Using diagrams, describe four equipments used in linear surveying. [8 marks]
3. (a) Explain the tasks carried out by the following survey assistant
(i) The leader
(b) discuss tower gardening [3 marks]
4. (a) List four properties of soil that reduce soil erosion [2 marks]
(b) List four causes of soil erosion [4 marks]
(c) Define agricultural water management [4 marks]
(d) Define conservation tillage [2 marks]
(e) Describe cutoff drains. [2 marks]

SECTION II (20 MARKS)

5. (a) Explain all the following four factors found in the given soil loss equation
 $A=C \times P$ [6 marks]
(b) Explain the importance of bench terracing. [4 marks]

- (c) With aid of a diagram, describe how you can carry out a linear survey across an obstruction of a large river such as Tana River. [4 marks]
- (d) Discuss soil conservation [6 marks]
6. (a) Giving preventive measures, discuss the following types of soil erosion
 (i) Gully erosion [5 marks]
 (ii) Wind erosion [5 marks]
- (b) Discuss three methods used in measuring soil erosion [10 marks]
7. Discuss the following
- (a) Gross errors [5 marks]
- (b) Constant errors [5 marks]
- (c) Negarims method of water management [5 marks]
- (d) Complete the survey booking below and carry out the checking test. Given that the reduced level at point A is 110.150ml [5 marks]

B.S	I.S	F.S	RISE	FALL	R.L	DISTANCE		REMARKS
2.348								
1.891		0.876						
2.517		1.030						
1.932		2.140						
2.653		1.338						
		1.296						