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UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE
IN AGRICULTURE

AGEN 352: SOIL AND WATER MANAGEMENT

STREAMS: BSC (AGEN)

TIME: 2 HOURS

DAY/DATE: TUESDAY 11/04/2023

2.30 P.M. – 4.30 P.M.

INSTRUCTIONS: Answer ALL questions in section 1 and any TWO in section 2

SECTION I (30 MARKS)

1. Explain survey [2 marks]
2. By use of diagrams describe four equipments used in linear surveying [8 marks]
3. Explain the tasks carried out by the following survey assistants.
 - (a) The leader [3 marks]
 - (b) The follower [3 marks]
4.
 - (a) Discuss cutoff drain [2 marks]
 - (b) List FOUR causes of soil erosion [4 marks]
 - (c) Define agricultural water management [4 marks]
 - (d) Discuss conservation tillage [2 marks]
 - (e) Discuss cutoff drains [2 marks]

SECTION II (20 MARKS)

5.
 - (a) Explain all the following four factors found in the given soil loss equation
 $A = L \times S \times C \times P$ [12 marks]
 - (b) Explain the importance of bench terracing [4 marks]
 - (c) With aid of a diagram explain how you would take a measurement across river tana, which acts as an obstacle to the survey line. [4 marks]

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6. Giving preventive measures discuss the following types of soil erosion
- (a) Splash erosion [5 marks]
 - (b) Gully erosion [5 marks]
 - (c) Wind erosion [5 marks]
 - (d) River erosion [5 marks]
7. (a) Discuss the following errors found in measuring
- (i) Gross errors [5 marks]
 - (ii) Constant errors [5 marks]
 - (iii) Human errors [5 marks]
- (b) Reduce the given booking data below using the Rise & Fall
Use arithmetic checks to support your results. [5 marks]

Station	Point	BS	IS	FS	RL
1	TBM	1.400			+50.00
1	A		1.235		
1	B			1.870	
2	B	1.355			
2	C		3.340		
2	D			1.975	
3	D	0.585			
3	E			0.855	
