



DEPARTMENT OF SOIL AND PLANT SCIENCES

GARY MAGADZIRE SCHOOL OF AGRICULTURE AND ENGINEERING

DIPLOMA IN SUGARCANE AGRICULTURE

LEVEL 1 SEMESTER 1

EXAMINATION QUESTION PAPER

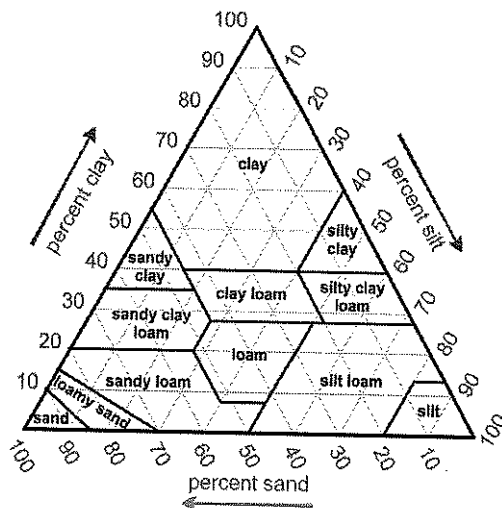
MODULE CODE	DSA101
MODULE NARRATION	SOIL SCIENCE
DATE	
DURATION	3 HOURS

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EXAMINATIONS OFFICE

INSTRUCTIONS TO CANDIDATES:

1. Answer any **THREE** questions
2. Each question carries **20 marks**

1. (a) List the constituents of a fertile soils in a sugarcane field. [5]
 (b) State five farming practices that improve soil structure in sugarcane fields. [5]
 (c) Explain five negative effects of burning sugarcane before harvesting. [10]
2. (a) Use the textural triangle bellow to identify the textures of the following soils (Soil type 1, Soil type 2, Soil type 3, Soil type 4 and Soil type 5. [10]



Soil type	Clay (%)	Sand (%)	Silt(%)
Soil 1	90	10	0
Soil 2	20	70	10
Soil 3	10	50	60
Soil 4	30	10	70
Soil 5	20	30	40

- b) Explain the following:
 - i) Sheet erosion [2]
 - ii) Soil horizon [2]
 - iii) Soil profile [2]
 - iv) Weathering [2]
 - v) Bulky density [2]
3. (a) What are the effects of poor soil drainage in sugarcane production. [10]
 (b) Explain five (5) processes that may result in soil acidification of sugarcane fields. [10]
4. (a) Explain how soil sodicity and alkalinity affect sugarcane growth. [10]
 (b) Why is it important for farmers to know their soil texture? [5]
 (c) List the three (3) macronutrients required by sugarcane. [3]
 (e) Explain mineralization. [2]
5. Explain why it is important to incorporate organic matter in sugarcane fields. [20]

END OF EXAMINATION PAPER