



**UNIVERSITY OF SWAZILAND
FINAL EXAMINATION PAPER**

**PROGRAMME: DIPLOMA IN AGRICULTURE 3
DIPLOMA IN AGRICULTURAL EDUCATION 3**

COURSE CODE: LUM 301

TITLE OF PAPER: FARM MACHINERY

TIME ALLOWED: TWO (2) HOURS

SPECIAL MATERIAL REQUIRED: NONE

**INSTRUCTIONS: ANSWER QUESTION ONE AND ANY TWO OTHER
QUESTIONS.**

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GRANTED BY THE CHIEF INVIGILATOR**

QUESTION ONE

- (A) With the aid of a neat schematic diagram, illustrate the components of a sprayer. (10 marks)
- (B) If you were to choose between using a moldboard plough and a disc plough, why would you prefer a disc plough? (10 marks)
- (C) The equation given below is useful in many machinery management decisions;
- $$AC = P (Fc\%/100) + A/c [P(R \&M)/100] + L+O+F+T$$
- Define all the terms of the equation with their units. (10 marks)
- (D) Differentiate between the principles of operation of a mower, rake and a baler. (10 marks)

QUESTION TWO

- (A) What are the functional elements of a forage harvester? (10 marks)
- (B) Why and how are seed drills calibrated? (10 marks)
- (C) State five types of continuous flow dryers that are commonly used on most farms. (5 marks)
- (D) In most parts of Swaziland, hammer mills are the commonly found size reduction equipment, why is this so? (5 marks)

QUESTION THREE

(A) The Table below gives the data recorded for some spraying equipment.

Activity	Time taken (min/ha)
Turning at row ends	15
Refilling spraying tank	15
Actual spraying	40
Cleaning clogged Nozzle	15
Other down time	25
Tractor adjustment	

Calculate the field efficiency of the spraying equipment. (20 marks)

(B) What are the major components of a seed drill/planter and their functions. (10 marks)

QUESTION FOUR

(A) What do you understand by precision fertilizer applicators. (5 marks)

(B) If you were asked to explain to some high school students the differences between trailed, semi mounted and mounted farm equipment, what would you say? (10 marks)

(C) What are the differences between single acting, tandem and offset disk harrows? (15 marks).