



**UNIVERSITY OF SWAZILAND**  
**SUPPLEMENTARY 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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**QUESTION ONE.**

(A) Distinguish between the following sets of farm equipment;

- i) A duster and a sprayer (5 marks)
- ii) Harrows and cultivators (5 marks)
- iii) Seed drills and planters. (5 marks)

(B) The combine harvester on Luyengo farm is said to be given a lot of grain crackage with unthreshed earheads, what would you think is the likely cause? (10 marks)

(A) In calibrating a Luyengo farm planter, the following results were obtained;

- a. Circumference of wheel = 60cm
- b. Planting width = 90cm
- c. Weight of seeds collected after running the test = 50kg

Calculate the number of turns required for 1/10 of a hectare.

If the seeds obtained were for 1/100 of an hectare, what is the right calibration of the planter? (15 marks)

**QUESTION TWO**

(A) How would you classify farm implements based on tillage operations. (5 marks)

(B)

(i) If you were to design a forage harvester what is the basic equation you would use to determine its theoretical capacity? (5 marks)

ii) Define all the terms of the equation given in (i). (10 marks)

(C) What is break even cost in farm machinery? (10 marks)

**QUESTION THREE**

(A) What are the functional parts of a baler. (10 marks)

(B) Why is a combine harvester known by its name? (10 marks)

(C) What are fixed and variable costs in cost analysis of operating an agricultural machine. (10 marks)

**QUESTION FOUR**

(A) Describe two devices each used in the conveying of farm products for

- i) Short distances (*10 marks*)
- ii) Long distances (*10 marks*)

11. The tractor is considered similar to man and animals in operating farm machines. In what term is this true? (*10 marks*)