UNIVERSITY OF SWAZILAND
FINAL EXAMINATION PAPER

PROGRAMME: DIP AGRIC II & DIP A GRIC ED. II

COURSE CODE: LUM 203

TITLE OF PAPER: FARM STRUCTURES

TIME ALLOWED: TWO (2) HOURS

SPECIAL MATERIAL REQUIRED: NONE

INSTRUCTIONS: ANSWER QUESTION ONE AND ANY TWO OTHER QUESTIONS.

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QUESTION ONE: COMPULSORY

a) Define a crop storage structure **(5 Marks)**

b) Discus two reasons why it may be necessary to store agricultural produce. **(10)**

c) Briefly discuss why it is necessary to consider the direction of prevailing wind in the orientation of a crib. **(5 Marks)**

d) A farmer who is expecting to harvest 20 tonnes of shelled maize intends to store them in cribs while carrying on other farm activities and to be shelled later. The density of shelled maize is 720kg/m^3 while 1m^3 of corn cobs will give 0.4m^3 of shelled corn. Determine

(i) The volume of crib that he will require. **(5 Marks)**
(ii) Appropriate dimensions of the crib or cribs **(15 marks)**
(state all your assumptions and show all calculations.)

QUESTION TWO

a) A fence is to be constructed to cover a rectangular shaped cattle yard using barbed wire and measuring a total of 1000m. The fence is to have two entrances. Each barbed wire spool measures 500.0m in length. Four (4) strands spaced at 300.0mm are to be used for construction. The ordinary or intermediate posts are spaced 3.5 m apart, while in-between adjacent posts, three droppers are to be used. Make all other necessary assumptions and compute the following

(i) Corner posts [3 Marks]
(ii) struts [3 Marks]
(iii) Barbed wire spools [3 Marks]
(iv) Intermediate posts [3 Marks]
(v) Droppers [3 Marks]

b) If the cost of the material were: Corner post = E42.50, Struts = E42.50, Intermediate posts = E35.80, Droppers = E3.15, Spool of barbed wire = E2, 500.00. Calculate the total material costs. **[10 marks]**

c) What are the other costs that are not included in this estimates? **(5 Marks)**

QUESTION THREE

a) Define Livestock structures **(6 Marks)**

b) Discus the various ways by which livestock structures have contributed to the productivity of the husbandman and the welfare of the animal. (12 marks)

c) Discuss two functions of a fence **(6 marks)**

d) Differentiate between a cattle dip and a spray race **(6 Marks)**

QUESTION FOUR

a) Discuss two factors that should be considered in the choice of a building material **(5 Marks)**

b) Calculate the quantities of materials needed to construct a rectangular floor measuring 7.5m x 4.0m x7.0cm thick. Use a normal mix of 1:3:6 and assume 30% decrease in volume and 5% waste. The densities of sand and coarse aggregates can be taken as 1,350 kg/m^3 and 1,650 kg/m^3 respectively. The volume of one bag of cement is 37l while the water cement ratio is 15 litres per bag of cement. **(25 marks)**