



**UNIVERSITY OF SWAZILAND
FINAL EXAMINATION PAPER**

PROGRAMME: DIP AGRIC III & DIP AGRIC ED. III

COURSE CODE: LUM 304

TITLE OF PAPER: ANIMAL DRAUGHT IMPLEMENTS

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) Enumerate ten (10) uses of animals with the possible types of animals. (10 marks)

(B) Give an appropriate title to the Table below. Give two importance of the Table and supply the missing values. (20 marks)

Animals	Live Weight (LW) kg	Force PC of LW	Speed m/s	Work Time, h	Energy expenditure at work (M/J)
Donkey	100-150	10-16	0.7-0.9	-	-
Horse	200-300	10-16	0.6-0.8	4.5-6.5	16-24
Zebra	300-450	-	-	4.5-6.5	24-40

(C) Discuss the factors influencing the capabilities of animals over which there can be partial control. (10 marks)

QUESTION TWO

(A) What do you understand by training programme for Draught Animals?(5 marks)

(B) If you were asked to recommend some training methods for a farmer with cattle. What would be your recommendations? (10 marks)

(C) Why are nose rope or ring and ear control systems preferred to other control systems in handling draught animals? (5 marks)

(D) If you were asked to select a harness system for use in an area where animal traction is being introduced for the first time, what factors would you consider in the selection? (10 marks)

QUESTION THREE

(A) Why are artisan made wooden sledges banned in countries such as Lesotho and Zimbabwe. (5 marks)

(B) What are the basic configurations of animal drawn carts? (5 marks)

(C) A cart is designed to carry a load of 600kg. If the cart weighs 150kg and is to operate with a rolling coefficient of 0.45 on a slope of 5%, calculate the tractive force required to move the cart. (20 marks)

QUESTION FOUR

(A) Define the power of a draft animal unit. (10 marks)

(B) What are the forces that constitute draft resistance in animal implements. (10 marks)

(C) In certain areas of Southern and Eastern Africa and Madagascar, artisan-made wooden sledges are used as equipment for animal transport rather than carts. What reasons would you give to this preference? (10 marks)