



**UNIVERSITY OF SWAZILAND
SUPPLEMENTARY EXAMINATION PAPER**

PROGRAMME: BSC AGRIC. 4 (CP & LWM)

COURSE CODE: LUM 405

TITLE OF PAPER: MECHANISATION MANAGEMENT

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**

SECTION I: COMPULSORY

QUESTION 1

- (a) Machine performance is critical in the management of farm machinery. Field efficiency is possibly the most critical factor in the estimation of the performance of field equipment. Briefly discuss any **FOUR** ways of improving field efficiency. (20 Marks)
- (b) Explain how the following can affect field efficiency:
- (i) Field pattern
 - (ii) Field size
- (10 Marks)
- (c) The power performance of tractors is one of the most important items of information needed by a good manager of farm power and machinery. Reliable information can be obtained from the Nebraska Tractor Test reports or the OECD tractor test reports. Outline the drawbar power test and its relevance to the management of tractors. (10 Marks)

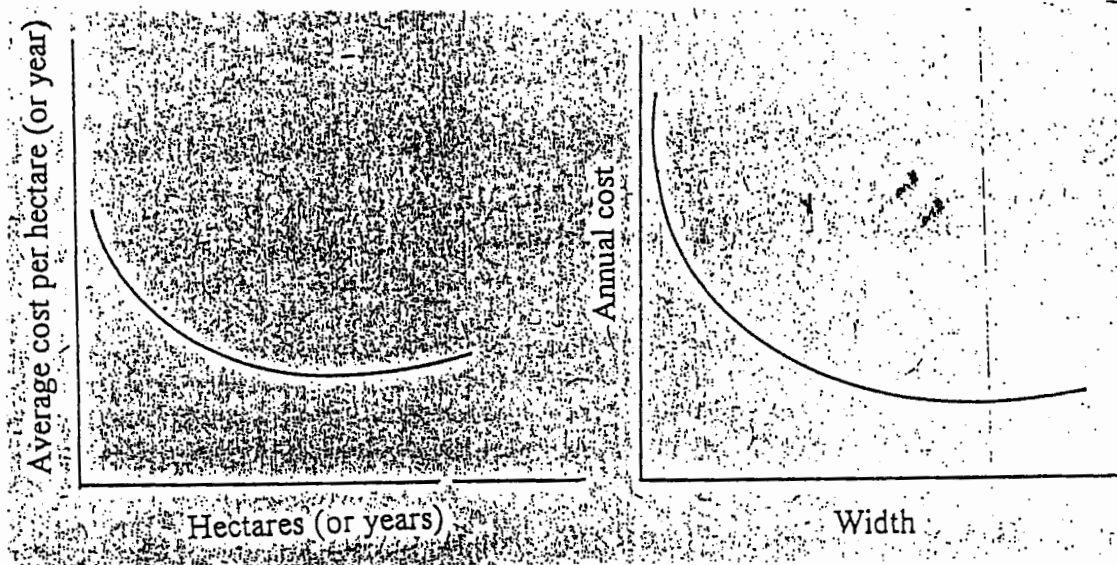
SECTION II: ANSWER TWO QUESTIONS

QUESTION 2

- (a) Write short notes on the following:
- (i) Leasing;
 - (ii) Hiring;
 - (iii) Timeliness costs.
- (15 Marks)
- (b) Mechanisation is fraught with many problems, particularly in developing countries. These problems can be classified as economic, technical, and social. Discuss these problems. (15 Marks)

QUESTION 3

- (a) For all other inputs on the farm, except for machinery, economies of scale is not important. Explain. (5 Marks)
- (b) Write down the annual cost equation for machinery (5 Marks)
- (c) Using the above equation, explain the diagrams below. (20 Marks)

**QUESTION 4**

- (a) Explain the principle behind scheduled replacement of farm machinery. (5 Marks)
- (b) Discuss **THREE** factors that would favour early replacement of farm machinery. (15 Marks)
- (c) Explain how you would go about determining machine capacity for planning purposes. (10 Marks)