



1st SEM. 2011/2012

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UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER

**PROGRAMME: BSc. in Agricultural Economics and Agribusiness
Management**

COURSE CODE: AEM 405 / AEM 411

TITLE OF PAPER: PRODUCTION ECONOMICS

TIME ALLOWED: TWO HOURS

**INSTRUCTION: 1. ANSWER ALL QUESTIONS
2. EACH QUESTION CARRIES TWENTY FIVE (25)
MARKS**

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THE CHIEF INVIGILATOR**

Question One

- (a) Consider the production function: $Y = P \times Q$, where Y is output and P and Q are variable inputs. Suppose the price of P is equal to E10, price of Q is equal to E20 and price of Y is equal to E100. How much of each of the two inputs would you purchase to produce the maximum output possible given that you have E1000 to spend on them? How much profit would you earn? **(8 MARKS)**
- (b) Suppose the production function is given by $Y = X_1^{1/3} \times X_2^{1/3}$ where Y is output and X_1 and X_2 are inputs. If the price of X_1 is E3, price of X_2 is E3 and output price is E18, and the funds to purchase the needed inputs are readily available, what is the marginal product of each of the two inputs at the least cost combination of these inputs? **(5 MARKS)**
- (c) Assuming that the mathematical production functions are available:
- State the condition(s) that are met when least cost combination of resources are employed **(3 MARKS)**
 - Show a situation(graphically and by equation) whereby (i) is not met and state what steps should be taken **(3 MARKS)**
 - State the conditions met when profit is maximized from the production of a good using optimum amounts of two resources. **(3 MARKS)**
 - State the conditions that should be met to carry out production when funds to purchase inputs are rather limited. **(3 MARKS)**

Question Two

- (a) It is a desire by economically minded farmers to maximize returns per lilangeni spent. Is this goal consistent with profit maximization when capital is unlimited? Is the goal consistent with the general equimarginal principal when capital input is limited? Explain your answers. **(7 MARKS)**
- (b) What criteria would you apply to allocate owned (not purchased) inputs to various enterprises? **(4 MARKS)**
- (c) Suppose you wanted to commercially grow maize and wheat on two separate farms and your only variable input is fertilizer. Explain how you would allocate the fertilizer between the two farms when you have unlimited financial capital and when you do not have enough financial capital to buy everything you wanted for your business. **(14 MARKS)**

Question Three

- (i) Suppose you are planning to produce a given amount of maize using the following four inputs: X1, X2, X3 and X4. Explain how you will combine the four inputs in order to produce the given output of maize at minimum cost
(6 MARKS)
- (ii) Explain how you can maximize profit from maize production using the four inputs mentioned in (i) above.
(10 MARKS)
- (iii) Now suppose you are producing maize and sugarcane using the inputs given in (i) above. How will you combine the four inputs in the production of the two crops?
(4 MARKS)
- (iv) Suppose that you can produce different combinations of two products A and B using a given amount of variable input. Explain with reasons the criteria you will use to allocate the input in the production of A and B.
(5 MARKS)

Question Four

- (a) Discuss with examples the different types of production possibility curves that illustrate the relationships among farm enterprises.
(12 MARKS)
- (b) Assume you are growing goods K and L partly for use in the manufacture of good Z and suppose the amount of goods K and L produced is not the same as the amount of good K and good L needed to optimize the production of good Z. With help of a diagram describe your situation and state what objective you would be trying to achieve.
(13 MARKS)