UNIVERSITY OF SWAZILAND

SUPPLEMENTARY EXAMINATION PAPER

PROGRAMME: B.Sc IV in Agricultural Economics and Agribusiness Management

COURSE CODE: AEM 411

TITLE OF PAPER: PRODUCTION ECONOMICS

TIME ALLOWED: TWO (2) HOURS

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

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Question 1

(a)   Write short notes on the following:
    (i)   Expansion path and an isocline.   **(6MARKS)**
    (ii)   Production Possibility Curve and isorevenue line   **(6 MARKS).**
    (iii) Isoquant and isocost lines   **(6 MARKS)**

(b)   You have E1000 to spend on two inputs X_1 and X_2 whose prices are E20 and E10 respectively. Explain clearly how you would combine the two inputs in order to maximize the output Y given that $Y = X_1 X_2$ **(7 MARKS)**

Question 2

(a)   What do you understand by the least cost combination criterion?   **10 MARKS**

(b)   Given the following combinations of X_1 and X_2 to produce 100 units of product Y, calculate the appropriate marginal rate of substitution.   **10 MARKS**

Combination	Units of X_1	Units of X_2
1	60	0
2	40	5
3	25	10
4	15	15
5	7	20
6	3	25
7	0	30

(c)   If the prices of X_1 and X_2 are E10 and E8 respectively, determine the appropriate combinations of the two inputs to apply.   **5 MARKS**

Question 3

While economic ends and choice indicators may differ, the principles of production economics are always the same. Comment with respect to the definition of economic efficiency?   **12 MARKS**

(b) Given the Profit function: Profit $= P_y f(X) - P_x X$ - TFC
Derive the conditions for profit maximization with respect to input X and output Y and show that the two conditions are compatible.   **6 MARKS**

(c)   Explain the Economics of credit with respect to internal and external capital/credit rationing.   **7 MARKS**

Question 4

(a)   Suppose ATC $= 100/Y - 3Y + 4Y^2$.
Give the numerical values of TFC, TVC when Y=2 and level of Y at which AVC is at the minimum.   **10 MARKS**

(b)   Suppose you wanted to commercially grow tomatoes and baby cabbage 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.
                                                                          15 MARKS