



**2<sup>nd</sup> SEM. 2010/2011**

**page 1 of 3**

**UNIVERSITY OF SWAZILAND**

**FINAL EXAMINATION PAPER**

**PROGRAMME: BSc. in Agricultural and Applied Economics**

**COURSE CODE: 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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**Question One**

- (a) Define economic efficiency with respect to production. **12 MARKS**
- (b) Mr Shongwe wants to commercially grow four types of crops, namely Green Maize, Baby Cabbages, Baby Carrots and Green Beans for the export market. His variable input is only labour. How will you advise Mr Shongwe to allocate the labour resource to the four crops when (i) his financial capital is limited (ii) he is able to employ any amount of labour for purposes of maximizing profit. **10 MARKS**
- (c) How can you explain to a farm manager of Tibiyo that it is irrational to operate in the first stage of production of a classical production function? **3 MARKS**

**Question Two**

- (a) Suppose the average variable cost function of some farm is given by:  
 $AVC = 30 - 3.6Y + 0.2Y^2$ , where Y is output.
- (i) What is its marginal cost function? **3 MARKS**
- (ii) Suppose this farm is operating in a perfectly competitive market where the price of Y is E30.00. How much quantity should the manager produce and sell in the market? Show all workings and justify your answer. **12 MARKS**
- (b) Suppose you are given the following production function:  $Y = 2X^{1/4}$ , where Y is output and X is capital input. Suppose the fixed cost is E500 and the price of the capital input is E16.
- (i) Derive the total cost, marginal cost and average cost functions **6 MARKS**
- (ii) What are the values of the functions derived in (i) when  $Y=100$ ? **4 MARKS**

**Question Three**

- (a) Suppose you are planning to produce a given amount of maize using the following two inputs: X1 and X2. Explain how you will combine the two inputs in order to produce the give output of maize at minimum cost **12 MARKS**
- (b) Suppose you can produce Baby Cabbages using inputs X1, X2, X3, and X4. Explain how you can maximize profit from Baby Cabbage production using the four inputs. **13 MARKS**

**Question Four**

(a) Write short notes on: expansion path, isoquants, ridge lines, isocost lines and iso-revenue lines **15 MARKS**

(b) Differentiate among the following: elasticity of substitution, marginal rate of input substitution and elasticity of production. **10 MARKS**