

**UNIVERSITY OF SWAZILAND
FACULTY OF SOCIAL SCIENCE
DEPARTMENT OF ECONOMICS**

MAIN EXAMINATION PAPER: DECEMBER, 2017

**TITLE OF PAPER: ECONOMICS OF AGRICULTURE
COURSE CODE: ECON 410
TIME ALLOWED: TWO (2) HOURS**

INSTRUCTIONS:

1. Answer Question **ONE** and any other **TWO** questions.
2. Show all relevant workings to your answer
3. All Questions carry a total of 25 marks

SPECIAL REQUIREMENTS: SCIENTIFIC CALCULATOR

**DO NOT OPEN THIS QUESTION PAPER UNTIL INSTRUCTED TO DO SO BY
THE INVIGILATOR.**

Question 1

- a) Define what is meant by agricultural economics and mention three factors that make the agricultural sector unique. [6 marks]
- b) What are the two pieces of information essential for the determination of the appropriate level of input use when two variable inputs are used in production? [4 marks]
- c) The shape of the isoquant is said to be useful in helping us distinguish the type of resource relationships as either perfect substitutes, perfect complements or imperfect substitutes. Using graphs demonstrate how these relationships can be shown. [10 marks]
- d) What is the shortcoming of the marginal rate of substitution (MRS) as a measure of substitutability? What measure can address the weakness of the MRS and how does it make up for the handicap in the MRS? [5 marks]
- e) Use the following Cobb-Douglas production function for Cobweb Investments and the associated price information to derive the optimal amounts for the two inputs labour and fertilizer, as well as the level of output at which net returns or profits are maximized. Production function: $Y = X_1^{1/2} X_2^{1/2}$ where Y= Cobweb's output in tons, X_1 = labour input in person days and X_2 = fertilizer use in kilograms. The unit prices are as follows: $P_y = E10$, $P_{x_1} = E3$ and $P_{x_2} = E1$. [25 marks]

Question 2

- a) Why would over-taxation of the agricultural sector be detrimental to the development of the agricultural sector in Swaziland? [10 marks]
- b) Explain rationale behind the "Growth With Equity" phase in economic and agricultural development. Clearly justify why it had to be considered by development theorists. [15 marks]

Question 3

Explain the meaning of the following concepts used in agriculture

- a) Classical production function
- b) Rational production region
- c) Elasticity of input substitution
- d) Marginal rate of technical substitution
- e) Product-product relationship.

[5 marks each]

Question 4

- (a) Show and explain the relationship between total product, average product and marginal product of labour for a hardworking peasant farmer. [12 marks]
- (b) Discuss the factors influencing the aggregate supply response of the agricultural sector in Sub-Saharan African Countries. [13 marks]