

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

**MAIN EXAMINATION PAPER: DECEMBER, 2012**

**TITLE OF PAPER: ECONOMICS OF AGRICULTURE  
COURSE CODE: ECON 410  
TIME ALLOWED: THREE (3) 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 (Compulsory)

- (a) Explain what is meant by the term **classical production function** in agricultural production economics. [4 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? [2 marks]
- (c) 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? [4 marks]
- (d) 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. Production function:  $Y = X_1^{1/2} X_2^{2/3}$  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  $P_{x_2} = E1$ .

[15 marks]

### Question 2

- (a) Discuss the contribution of the agricultural sector to the growth and development of the Swaziland economy. [15 marks]
- (b) What constrains agricultural development in Swaziland [10 marks]

### Question 3

- (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]

**Question 4**

- a) Discuss the major types of uncertainty faced by farmers in Swaziland. [10 marks]
- b) As a consultant who is aware of the characteristic structure of the agriculture sector in Swaziland, explain the policy measures applicable in order to reduce risk and uncertainty in the sector. [10 marks]
- c) Distinguish between risk averse and risk taking behaviour. [5 marks]

**Question 5**

- a) In terms of their characteristics, distinguish between a traditional economy and the modern sector. [10 marks]
- b) Discuss any five factors that can facilitate the expedient modernization of the traditional sector. [10 marks]
- c) Explain why T.W. Schultz (1964) believed that peasant farmers were willing to innovate. [5 marks]