

**NATIONAL OPEN UNIVERSITY OF NIGERIA**

**FACULTY OF AGRICULTURAL SCIENCES**

**SECOND SEMESTER EXAMINATION**

**November/December, 2018**

**Programme: Agricultural Extension and Management**

**Course Title: Agricultural Production Economics**

**Course Code: AEA 303 Credit Unit: 2**

**Total Score: 70 Marks Time Allowed: 2.5 Hours**

**INSTRUCTION: Answer Compulsory question 1 ( 25 marks) and any 3 questions (15 marks each).**

**Question 1**

(a) i. Give a concise definition of agricultural economics. **3 marks**

 ii. What is the role of economics in agricultural production? **3 marks**

 iii. Highlight on five (5) uses of economics in agriculture. **5 marks**

 (b) i. Define agricultural production economics. **3 marks**

 ii. Outline four (4) uses of production function. **4 marks**

(c) i. Present the below hypothetical illustration of constant returns on graph.

|  |
| --- |
| Variable input (X) Total output (Y) Change in input (∆X) Change in output (∆Y) |
| 1 10 - -2 15 1 53 20 1 54 25 1 55 30 1 5 |

 **5 marks**

ii. Explain the relationship between Isoquant and MRTS. **2 marks**

**Question 2.**

(a) Discuss the classical measures of the following farm cost functions:

 Total Cost, Fixed Cost, Variable Cost and Marginal Cost. **4 marks**

(b) Differentiate between Average Product (AP) and Average Cost (AC) **8 marks**

 and also present them algebraically.

 (c) What is Agricultural Cost and its implication to a farmer? 3 marks

  **Question 3.**

 (a) Consider the production function of maize output as follows: Y =100 + 400X–2X2

 Where Y = maize output (kg) and X = fertilizer application (kg)

 Calculate: (i) the level of input that will maximize maize output.

 (ii) The optimum quantity of maize that could be produced. **7 marks**

(b) Explain the meaning of the following products relationships:

 - Competitive Products

 - Joint Products

 - Complementary Products

 - Supplementary Products **4 marks**

(c) Differentiate between variable, overhead, personal and capital costs. **4 ma**rks

**Question 4**

(a) Find the marginal products and elasticities of this Cobb Douglas power function:

 Y = aX1b1Xb22  **5 ½ marks**

(b) List and explain the three types of returns in production relationships. **4 ½ marks**

(c) Explain the meaning of the following concepts in production function:

 - Average Physical Product (APP)

 - Marginal Physical Product (MPP)

 - Law of diminishing returns

 - Rational Production Stage

 - Irrational Production **5 marks**.

**Question 5**

(a) Discuss the three (3) types of production. **6 marks**

(b) Give the meaning of the following agricultural production economics concepts:

 - Variable

 - Coefficient

 - Efficiency

 - Resources

 - Slope **5 marks**

(c) Explain with examples, the concept of short run and long run period of time in

 the production process. **4 marks**

**Question 6**

1. (a) Itemize five (5) areas of specialization in agricultural economics. **5 marks**

(b) List five (5) productive resources used by farmers. **5 marks**

(c) Explain two (2) goals of agricultural production economics. **5 marks**