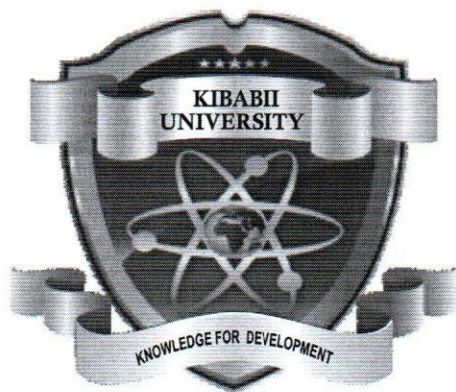


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(Knowledge for Development)

**KIBABII UNIVERSITY
UNIVERSITY EXAMINATIONS
2017/2018 ACADEMIC YEAR
FOURTH YEAR 2nd SEMESTER
SPECIAL/SUPPLEMENTARY EXAMINATION**

**FOR THE DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURE &
BIOTECHNOLOGY**

COURSE CODE: SAB 482

COURSE TITLE: PRODUCTION ECONOMICS

DATE: 9TH OCTOBER 2018

TIME: 8 – 10 AM

INSTRUCTIONS TO CANDIDATES

Answer **Question 1** and any other two (2) Questions.

Question one

- a. Discuss the concept of expansion path (6mks)
- b. Consider the production function and answer the questions that follow: $Y = X - 8X^2 - 0.1X^3$ where Y is output and X is the input.
- i) Define the average physical product and the marginal physical product (4mks)
- ii) Use the above production function equation and derive the equations of APP and MPP. (6mks)
- iii) Determine the value of X for which Y a maximum. (4mks)
- iv) Determine the boundaries of stage II for the above function (10mks)

Question two

Using a diagram where necessary, distinguish the following terms as used in production economics

- i. "Production" and "production function" (2mks)
- ii. "Necessary" and "sufficient conditions" (4mks)
- iii. "Ridgeline" and "isocline" (4mks)
- iv. "Isocost" and "isoquant" (4mks)
- v. "Law of diminishing marginal rate of returns" and "marginal rate of technical substitution" (6mks)

Question three

- a) Distinguish between the concepts of risk and uncertainty as used in economics. (4mks)
- b) Briefly discuss ways farmers in Kenya can deal with risk and uncertainty in agricultural production (16mks)

Question four

- a) Draw and describe the various shapes of Isoquants (10mks)
- b) Describe the effect of an improvement of technology on :
- i. Isoquant map (5mks)
- ii. Expansion path (5mks)