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University Examinations 2023/2024

SECOND YEAR SECOND SEMESTER EXAMINATION FOR THE DEGREE OF
BACHELOR OF SCIENCE IN ECONOMICS

BEC 3253: PRODUCTION ECONOMICS

DATE: APRIL 2024   TIME: 2 HOURS

INSTRUCTIONS: *Answer question **one** and any other **two** questions*

QUESTION ONE (30 MARKS)

    a) Define efficiency in production and explain the three types of efficiency   (8 marks)

    b) List and explain five ways of expressing production function   (5marks)

    c) Explain with illustrations the following concepts: (10 marks)

        i.   Production Possibility Curve

        ii.   Iso-revenue line

        iii.   Output Expansion Path

        iv.   Competitive Product

        v. Complementary Product

d) Discuss the two aspects of mobility of factors of production   (5 marks)

QUESTION TWO (20 MARKS)

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

b.   Define production function and explain five usefulness of production function

(12 marks)

QUESTION THREE (20 MARKS)

a) Given the following production function $Y = AL^{0.5}K^{0.25}$. Find the marginal products and the elasticity of production   (8 marks)

b) What is meant by economies and diseconomies of scale?   (4 marks)

c) Total cost equation is given by

$$C=1000+100Q-15Q^2 +Q^3$$

Compute the total, average and marginal cost at the output level of 10 and 12 units (8 marks)

QUESTION FOUR (20 MARKS)

a) Consider the production function of maize output as follows:

$$Y = 100 + 400X - 2X^2$$

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

Calculate:

i.   The level of input that will maximize maize output.   (4 marks)

ii.   The optimum quantity of maize that could be produced.   (4 marks)

b) Explain with examples, the concept of short run and long run period of time in the production process.   (5 marks)

c) With the aid of graphs differentiate between the laws of increasing, constant and decreasing returns.   (7 marks)

QUESTION FIVE (20 MARKS)

a) Explain the meaning of the following concepts:

i.   Isoquant   (2 marks)

ii.   Marginal Rate of Technical Substitution   (3 marks)

iii.   Elasticity of Input Substitution   (3 marks)

iv.   Isocost line   (2 marks)

b) Discuss the key assumptions of the law of diminishing returns   (10 marks)