CHUKA UNIVERSITY EXAMINATIONS

RESIT EXAM MAY 2025

AGEC 241: PRODUCTION ECONOMICS

Instructions:

a) Do not write on the question paper.

b) Answer Question ONE and any other THREE questions.

QUESTION ONE

a) Define Average Product (AP) and Marginal Product (MP) **(4 Marks)**

b) What is meant by production function? **(3 Marks)**

c) Define increasing returns to scale (IRS), constant returns to scale (CRS) and diminishing returns to scale (DRS) **(4 Marks)**

d) Outline three goals of production economics. **(3 Marks)**

e) Explain the principle of diminishing marginal returns. **(5 Marks)**

f) Outline four assumptions of the production functions. **(4 Marks)**

g) What is an isoquant? **(2 Marks)**

QUESTION TWO

Discuss various sources of risks in agriculture and describe methods of managing risks and uncertainty in agricultural production. **(15 Marks)**

QUESTION THREE

Discuss three stages of production and the recommendation related to each stage **(15 Marks)**

QUESTION FOUR

a) Describe four factors of production as used in production economics. **(8 Marks)**

b) A farmer is faced with the following variable cost function; $TVC= 30Y-13Y^2+ 2Y^3$ and a fixed cost, = 200

i. Derive his Average Total Cost (ATC), Average Variable Cost (AVC) and Average Fixed cost (AFC) curves, respectively **(3 Marks)**

ii. Derive the Marginal Cost Curve and estimate the value of MC at its minimum. **(2 Marks)**

iii. At what level of output is the AVC at minimum? **(2 Marks)**

QUESTION FIVE

i. Discuss the internal and external economies of large-scale production. **(9 Marks)**

ii. The following table represents the combination of two inputs which will produce the same level of output

Output (Y)	Input 1 (X_1)	Input 2 (X_2)
40	0	15
40	8	12
40	16	9
40	24	6
40	32	3
40	40	0

a) Explain which factor-to-factor relationship the two inputs exhibit? **(2 Marks)**

b) If the price of X_1 is Ksh 200 and the price of X_2 is Ksh 300. What is the cost minimizing combination of X_1 and X_2? **(4 Marks)**

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