



NATIONAL OPEN UNIVERSITY OF NIGERIA
FACULTY OF SOCIAL SCIENCES
DEPARTMENT OF ECONOMICS
2025_2 EXAMINATIONS

COURSE TITLE: ADVANCED MICROECONOMICS THEORY

COURSE CODE: ECO 431

UNITS: 2

TIME ALLOWED: 2 HOURS

INSTRUCTIONS: ANSWER QUESTIONS ONE AND ANY OTHER TWO.

1. In a perfectly competitive market, the market price of a product is N50. A firm in this market has the following total cost function:

$TC=100+10Q+0.5Q^2$, where TC is the total cost and Q is the quantity produced.

- (i). Calculate the profit-maximizing output level for the firm. (10marks)
 - (ii). Determine the firm's profit at this output level. (10marks)
 - (iii). How do strategic interactions between firms in a Cournot duopoly influence their output decisions and market equilibrium? (10marks)
- (30marks)

2(a) Explain the law of diminishing marginal returns in the context of production. (6marks)

(b). Explain the relationship between returns to scale and economies of scale in the long run. How can a firm experience increasing returns to scale but not achieve economies of scale? (10marks)

(c). Differentiate between short-run and long-run in the theory of production. (4marks)

3(a). How do income and substitution effects explain changes in demand when prices fluctuate? (8marks)

(b). What is the significance of the price elasticity of demand in determining consumer behavior? (6marks)

(c). How does the theory of consumer preferences explain the choices consumers make between different goods? (6marks)

4) A consumer's utility function is given by $U(x,y)=x \times y$, where x represents units of good X, and y represents units of good Y. The prices of goods X and Y are $P_x=10$ and $P_y=20$, $y=20$, respectively. The consumer has an income of N200. How many units of goods X and Y should the consumer purchase to maximize utility? (20marks)