

CENTRAL UNIVERSITY

2020/2021 EXAMINATIONS

FACULTY OF ARTS AND SOCIAL SCIENCES

DEPARTMENT OF ECONOMICS

ECON 315: INTERMEDIATE MICROECONOMICS
(LEVEL 300)



**CENTRAL
UNIVERSITY**

FAITH • INTEGRITY • EXCELLENCE

Time Allowed: 2 hours

Instructions: Answer Any Four Questions
Lecturer: Kwablah Edmund

- i. If the firm's objective is to maximize output, determine the optimal level of labour and capital usage. (15marks)
- ii. At the optimal input levels, what is the total output of the firm? (5 marks)

QUESTION FIVE

A. A firm's total cost function is $TC = 12 + 60Q - 15Q^2 + Q^3$

Suppose that a firm produces 10 units of output. Calculate

- i. Total fixed cost (TFC) (2marks)
- ii. Total variable cost (TVC) (3marks)
- iii. Average total cost (ATC) (3marks)
- iv. Average fixed cost (AFC) (3marks)
- v. Average variable cost (AVC) (3marks)
- vi. Marginal cost (MC) (3marks)

B. A firm's long run total cost (LRTC) equation is given by the expression

$$LRTC = 2,000Q - 5Q^2 + 0.005 Q^3$$

- i. What is the firm's long-run average cost equation? (3marks)
- ii. What is the minimum efficient scale of production? (5marks)

QUESTION SIX

A. For each of the following production functions, determine whether returns to scale are decreasing, constant, or increasing when capital and labour inputs are increased from $K=L=1$ to $K=L=2$

- i. $Q = 25K^{0.5}L^{0.5}$ (2marks)
- ii. $Q = 2K + 3L + 4KL$ (2marks)
- iii. $Q = 100 + 3K + 2L$ (2marks)

B. Consider the following Cobb-Douglas production function $Q = 56K^{0.38}L^{0.72}$

- i. Demonstrate that the elasticity of production with respect to labor is 0.72. (7marks)
- ii. Demonstrate that the elasticity of production with respect to capital is 0.38. (7 marks)
- iii. Demonstrate that this production function exhibits increasing returns to scale. (5 marks)