



NATIONAL OPEN UNIVERSITY OF NIGERIA
FACULTY OF SOCIAL SCIENCES
DEPARTMENT OF ECONOMICS
2024_2 EXAMINATION

COURSE TITLE: ADVANCED MATHEMATICAL ECONOMICS
COURSE CODE: ECO 718
CREDIT UNITS: 2 UNITS
TIME ALLOWED: 2 HOURS
INSTRUCTION: ANSWER QUESTION ONE AND ANY OTHER TWO (2) QUESTIONS

QUESTION ONE

- 1a.** Appraise the characteristics that make good mathematical model in economics (10 marks)
- 1b.** Examine the concept of linear model and give two (2) mathematical expression of linear a model. (10 marks)
- 1c.** Symbolize and explain a non-linear Cobb-Douglas production function that is linear in parameter. (10 marks)

QUESTION TWO

- 2a.** Explain the meaning of constant elasticity model and provide example of its logarithm expression (10 marks)
- 2b.** What is implicit function? Give two (2) expression of an implicit function (10 marks)

QUESTION THREE

- 3a.** Succinctly examine the concept of equilibrium and its importance in economics (10 marks)
- 3b.** Given the function $g(x) = x - 9/x^2 - 81$, show whether or not the function is continuous at:
i) $x = 9$
ii) $x = 8$ (10 marks)

QUESTION FOUR

- 4a.** Short appraise the determinants and features of the determinants of Cramer's rule (10 marks)
- 4b.** Solve the following linear equation with matrix inversion:
 $10z + 20y = 40$
 $30z + 50y = 10$ (10 marks)