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)