MANICALAND STATE UNIVERSITY OF APPLIED SCIENCES

FACULTY OF AGRIBUSINESS AND COMMERCE

DEPARTMENT: AGRICULTURAL ECONOMICS AND DEVELOPMENT

MODULE: ECONOMETRICS 1

CODE: AEDT 213

SESSIONAL EXAMINATIONS
FEBRUARY 2022

DURATION: 3 HOURS

EXAMINER: MRS P MADUDUDU

INSTRUCTIONS

1. *Answer all questions*
2. *Start a new question on a fresh page*
3. *Total marks 100*

Additional material(s): *Calculator*

QUESTION 1

a) Define Econometrics (2)

b) How does Econometrics differ from Mathematical Economics? (3)

c) Write short notes and give an example of
   i. Panel data (3)
   ii. Cross sectional data (3)
   iii. Time series data (3)

d) Briefly describe the three main goals of Econometrics (6)

QUESTION 2

Given are five observations collected in a regression study on two variables:

Xi	2	4	5	7	8
Yi	2	3	3	6	4

a) Calculate the correlation coefficient (r) for X and Y (10)

b) Interpret the estimated coefficient (1)

c) Develop the estimated regression equation using the least-squares method for these data to estimate b_0 and b_1 (7)

d) What is the difference between Correlation and Regression? (2)

QUESTION 3

List and explain the classical or traditional econometric methodology (20)

QUESTION 4

A scatter diagram from real observations would show that the relationship between demand for beef and quantity purchased has a form roughly similar to a straight line but not exact. The observations do not fall on a straight line, hence the need for a random error term in econometrics to capture the deviations. What is the significance of the random error term? (20)

QUESTION 5

a. Explain the assumptions of the linear stochastic regression model (10)

b. Suppose you were to develop an economic model of factors affecting demand for milk. Explain the variables you would consider in developing such a model and explain your reasons. (10)

END OF EXAMINATION

FORMULAE

$$r = \frac{\sum x_i y_i}{\sqrt{\sum x_i^2}\sqrt{\sum y_i^2}}$$

$$\hat{b}_0 = \bar{Y} - \hat{b}_1 \bar{X}$$

$$\hat{b}_1 = \frac{\sum x_i y_i}{\sum x_i^2}$$