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

COURSE TITLE: INTRODUCTION TO ECONOMETRICS I
COURSE CODE: ECO 355
CREDIT UNITS: 3 UNITS
TIME ALLOWED: 3 HOURS
INSTRUCTION: ANSWER FOUR QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS

QUESTION 1

a) When is an estimator said to be unbiased, consistent and efficient? **5 marks**
b) Discuss the reason why econometrics is said to be important within economics. **5 marks**
c) Briefly explain co-integration? **7.5 marks**

QUESTION 2

a) When is the ordinary least square (OLS) said to be consistent? **4.5 marks**
b) List and briefly explain the properties of the ordinary least square (OLS). **8marks**
c) Distinguish between homoskedasticity and multicollinearity **5 marks**

QUESTION 3

a) State the normality assumption for u_i **2.5 marks**
b) The following are hypothetical data for Savings (Y) and Investment (X).

Y	3	4	2	3	5	4	4	3	4	5
X	5	6	4	8	7	5	6	5	5	6

Calculate and interpret the coefficient of determination **15 marks**

QUESTION 4

a) The maximum likelihood made some certain assumption regarding two variables of interest in a study. State these assumptions. **4 marks**
b) Briefly explain the Maximum likelihood. **4.5 marks**
c) The following summary results were obtained from the sales (Y) and expenses (X) recorded by manufacturing company in eight different months:

$n = 8, \overline{Y} = 154, \overline{X} = 34.5, \sum Y = 1232, \sum X = 276, \sum XY = 45016, \sum Y^2 = 196334, \sum X^2 = 10626$

Estimate a regression equation and obtain the sales value if expenses when is N50,000.00

8marks

QUESTION 5

a) Briefly explain what the standard error of an estimator in econometrics represent.

3.5 marks

b) The following table shows the quantity demand (Y) and price (X) of a given commodity at six different shops.

Quantity demanded (y)	60	75	30	45	10	10
Price (x)	7	10	20	30	40	50

Compute the 95% confidence interval for b_0 and b_1 s**14marks**