THE NATIONAL OPEN UNIVERSITY OF NIGERIA
FACULTY OF SOCIAL SCIENCES
DEPARTMENT OF ECONOMICS

COURSE TITLE: INTRODUCTION TO ECONOMETRICS I
COURSE CODE: ECO 355
UNITS: 3
TIME ALLOWED: 3 HOURS
INSTRUCTIONS: ANSWER QUESTIONS 1 AND 3 OTHER QUESTIONS. A MARK WILL BE GIVEN FOR CLARITY AND ORDERLY PRESENTATION

Q1. Given the following information:

Y	5	6	4	5	7	8
X	4	8	3	5	9	3

Using the absolute value of the variables, find:

(a) Constant term (β_0)

(b) Slope coefficient (β_1)

(c) Specify the estimated model

(d) Interpret your results with respect to β_0 and β_1 **25marks**

Q2. Use the information in Q1 to answer the following:

(a) Total sum squares (TSS).

(b) Estimated sum squares (ESS).

(c) Residual sum squares (RSS)

(d) Coefficient of determination (R^2) **15marks**

Q3. Give eight (8) basic assumptions of classical linear regression model (CLRM) on which the observations are generated. **15marks**

Q4. Highlight the four (4) desirable properties of OLS estimators under the assumption of normality.

15marks

Q5. Given the following information:

$Null\ hypothesis\ H_0: \beta_2(MPC) = 0.50$; Estimated value of $MPC\ (\hat{\beta}_2) = 0.5091$; Standard error $(Se)\ of\ \hat{\beta}_2 = 0.0357$. Test whether to accept or reject the null hypothesis. **15marks**

Q6. Explain the five (5) differences between econometrics modeling and machine learning. **15marks**