NATIONAL OPEN UNIVERSITY OF NIGERIA
FACULTY OF SOCIAL SCIENCES
DEPARTMENT OF ECONOMICS
2019_1 EXAMINATION

COURSE TITLE: **INTRODUCTION TO ECONOMETRICS I**
COURSE CODE: **ECO355**
UNITS: **3**
TIME ALLOWED: **3HOURS**

INSTRUCTION: **ANSWER FOUR (4) QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS**

QUESTION ONE
(a). Discuss why econometrics is regarded as a separate discipline. **(8marks)**
(b).Why do disturbances exit in a model? **(4marks)**
(c).Discuss the assumptions of Classical linear regression model. **(5½ marks)**
(17½marks)

QUESTION TWO
(a). What do you understand by the term "coefficient of determination (R^2)"?. **(2½marks)**
(b). Discuss two (2) properties of coefficient of determination (R^2). **(5marks)**
(c). Discuss in details the properties of ordinary least square (OLS) estimators. **(10marks)**
(17½marks)

QUESTION THREE
(a). Why do we employ the normality assumption in a regression model? **(10marks)**
(b).What do you understand by the term "method of maximum likelihood"? **(2½marks)**
(c). Discuss the term "hypothesis testing" with detail examples. **(5marks)**
(17½marks)

QUESTION FOUR
(a). Discuss the term "Regression analysis" **(5½marks)**
(b). Given $Yt = 0.8632 - 2.7310Xt$……(1)
(0.0221) (0.0432)
$R^2 = 0.77840$, $t = 1.65421$, $F = 22.38164$
and
$Yt = 1.7221 + 9.5269Xt + 11.8215Kt$ ……(2)
(0.0821) (0.0754) (0.0582)
$R^2 = 0.6990$, $t = 2.21941$, $F = 12.83097$

Where Yt = Economic growth, Xt = foreign direct investment and Kt = Exchange rate
(i).What type of regression model is equation one and two **(2marks)**
(ii) Interpret the two models completely **(5marks)**
(iii). Test for t and F test using 5% level of significance. **(5marks)**
(17½marks)

QUESTION FIVE
(a). What is normality test?. **(7½marks)**
(b). Derive the formulae for least squares estimator of $\beta 2$ and $\beta 1$ in the model
$Yi = \beta 1 + \beta 2 Xi + \mu i$ **(10marks)**.

QUESTION SIX
Write short note on the following:
(a). Histogram of Residuals of normality test **(6marks)**
(b). Jarque-Bera test **(6marks)**
(c). Confidence interval **(2½marks)**
(d). Standard Error test **(3marks)**
(17½marks)