



**NATIONAL OPEN UNIVERSITY OF NIGERIA**  
**FACULTY OF SOCIAL SCIENCES**  
**DEPARTMENT OF ECONOMICS**  
**2024 1 EXAMINATION**

**COURSE TITLE: INTRODUCTION TO ECONOMETRICS**  
**COURSE CODE: ECO 713**  
**CREDIT UNITS: 3 UNITS**  
**TIME ALLOWED: 3 HOURS**  
**INSTRUCTION: ANSWER FOUR QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS**

**Question 1**

- a) State the difference between Dummy Variable Regression Model and the Linear Probability Model. **5marks**
- b) State some of the problems associated with the Linear Probability Model. **3.5marks**
- c) The following is the estimated result of dummy variables regression model to determine if the sex of public secondary school teachers differs across three geopolitical zones; North, East and West. Note  $D_2 = 1$  for states in the North; 0 otherwise and  $D_3 = 1$  for state in the East; 0 otherwise

$$\hat{Y} = 13079.31 - 867.24D_2 - 1632.31D_3$$

$$SEE = (681.26) \quad (762.38) \quad (841.81)$$

$$t = [19.17] \quad [-1.13] \quad [-1.94]$$

$$P\text{-value} = (0.0000) \quad (0.1240) \quad (1.99)$$

Provide detail interpretation of the result

**9marks**

**Question 2**

- a) Without mathematical expressions, discuss the following techniques for testing for the presence of unit root in a series.

- i. Dickey-Fuller Test. **3marks**
- ii. Augmented Dickey-Fuller Test. **3marks**
- iii. Philip-Peron Unit Root Test. **3marks**

- b) Provide interpretation for the following unit root test results for oil price in Nigeria. **8.5marks**

i

Null Hypothesis: OIP has a unit root

Exogenous: Constant, Linear Trend

Lag Length: 0 (Automatic - based on SIC, maxlag=7)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-2.127858	0.5096
Test critical values:		
1% level	-4.309824	
5% level	-3.574244	
10% level	-3.221728	

\*MacKinnon (1996) one-sided p-values.

ii.