NATIONAL OPEN UNIVERSITY OF NIGERIA
FACULTY OF SOCIAL SCIENCES
DEPARTMENT OF ECONOMICS
2021_2 EXAMINATION

COURSE TITLE: APPLIED ECONOMETRIC I
COURSE CODE: ECO 453
UNITS: 2
TIME ALLOWED: 2 HOURS
INSTRUCTIONS: ANSWER QUESTION ONE AND ANY OTHER TWO QUESTIONS

QUESTION ONE
(a). Briefly explain the term 'Nonlinear Regression'(7marks)

(b). State four (4) assumptions of Nonlinear Regression. (8marks)

(c). Briefly discuss why we use nonlinear models? (15marks)

(30marks)

QUESTION TWO
(a). Regressions are easily estimated with variables that are continuous and fully observable time series data but in real life situation, people also make choices that cannot be measured by continuous outcome variables but discrete variables. Do you agree or disagree? Discuss. (10marks)

(b). Briefly explain the Linear Probability Model. (10marks)

(20marks)

QUESTION THREE
(a). Explain the basic problems of using Linear Probability Model. (7marks)
(b). Differentiate between Logit Model and Probit Model. (9marks)
(c). Explain the autoregressive distributed lag model. (4marks)
(20marks)

QUESTION FOUR
(a). Briefly list and explain the steps for carrying out the Lagrange Multiplier test. (9marks)
(b). A researcher with a sample size of 100 observations performed an ADF test and obtained the following results (standard errors in parentheses). What can you conclude about the stationarity of yt? The 5% critical value for the test is -2.89 .

1. $\Delta \hat{y}t = 5.16 - 0.78yt{-}1 - 0.02\Delta yt{-}1$
     (0.71)   (0.10)   (0.08)
2. $\Delta \hat{y}t = 1.80 - 0.65yt{-}1$
     (0.29)   (0.65)
3. $\Delta \hat{y}t = 0.53 - 0.94yt{-}1 + 0.14\Delta yt{-}1 - 0.1\Delta yt{-}2$
     (0.43)   (0.30)   (0.04)   (0.04)   (11marks)
(20marks)