



NATIONAL OPEN UNIVERSITY OF NIGERIA
FACULTY OF SOCIAL SCIENCES
DEPARTMENT OF ECONOMICS
2024 1 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) Explain the term econometrics **1.5 marks**
- b) Enumerate the process of traditional econometrics methodology. **8 marks**
- c) Why should econometrics be a separate discipline **8 marks**

QUESTION 2

A research consultant conducted a study to relate test grade (Y) to productivity of workers (X) after a period of training that took place in NOUN. Below are the results of 6 randomly selected workers and their level of productivity.

Workers	1	2	3	4	5	6
Test Grade (Y)	6	8	7	5	3	9
Productivity (X)	12	15	15	10	7	17

- i. Find the equation of the regression line of X on Y. **14.5marks**
- ii. What is the expected productivity of a worker who has a test grade of 10? **2mark**
- iii. What is the expected score of a worker whose productivity is 16? **1mark**

QUESTION 3

- a) Discuss the implication of violating the assumption of multicollinearity in an estimated econometric model. **4 marks**
- b) Discuss methods of detecting multicollinearity in a model. **3.5 marks**
- c) Highlight Methods of solving the problem of multicollinearity in a model. **10marks**

QUESTION 4

- a) Briefly explain the difference between these two models,

$$Y = \alpha_0 + \beta x_1 \dots \dots \dots \text{eq1}$$

$$Y = \alpha_0 + \beta x_1 + e_i \dots \dots \dots \text{eq 2}$$

5marks

- b) Why is regression method important in econometrics? **4.5marks**
c) Let $\hat{\alpha}$ and $\hat{\beta}$ be the estimated value of the α and β respectively. specify the sample regression line. **2marks**
d) Briefly explain unbiasedness of $\hat{\beta}$ **3marks**
e) Enumerate any three methods of carrying out normality test analysis. **3marks**

QUESTION 5

- a) Econometrics can be divided into two main categories. List and discuss the categories of econometrics and state their similarities. **8.5mark**

- b) The following are hypothetical data for daily wage (X) and weekly spending on foods stuff (Y) by five students in National Open University of Nigeria.

Students	A	B	C	D	E
Daily Wage (X)	5	6	8	10	11
Weekly Spending (Y)	4	7	5	11	8

Using the deviation form Compute and interpret the correlation coefficient.

9marks