



**NATIONAL OPEN UNIVERSITY OF NIGERIA  
FACULTY OF SOCIAL SCIENCES  
DEPARTMENT OF ECONOMICS  
2020\_2 EXAMINATION**

**COURSE TITLE: APPLIED STATISTICS**

**COURSE CODE: ECO 452**

**UNITS: 2 UNITS**

**TIME ALLOWED: 2 HOURS**

**INSTRUCTION: ANSWER ANY THREE (3) QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS**

**QUESTION 1**

Given the population 21, 22, 23, 24, 25, calculate the mean, standard deviation, and the variance of the population as well as the sample mean, standard deviation, and the variance. **23.3 Marks**

**QUESTION 2**

Outline the Assumptions and steps involved in ANOVA Analysis.

**23.3 Marks**

**QUESTION 3**

The table below contains observations on the quantity demanded of Yam (Y), it's price( $X_1$ ) and consumers' income( $X_2$ ).

**23.3 Marks**

Year	Y	X <sub>1</sub>	X <sub>2</sub>
2000	100	5	100
2001	75	7	600
2002	80	6	1200
2003	70	6	500
2004	50	8	300
2005	65	7	400
2006	90	5	1300
2007	100	4	1100
2008	110	3	1300
2009	60	9	300

You are expected to fit a linear regression line to the observations.

#### QUESTION 4

- (a) Write short notes on; **3.1 Marks [Total = 12.3 Marks]**
- (i) Secular trend or long term movement
  - (ii) Seasonal variation
  - (iii) Cyclical variation
  - (iv) Irregular or residual variation.
- (b) Outline and write short on any two methods of evaluating a time series. **11 Marks**

#### QUESTION 5

We are given the market situations for commodities A, B, C and C as follows.

Commodities	2000		2001	
	Prices	Quantities	Prices	Quantities
A	2	8	4	6
B	5	10	6	5
C	4	14	5	10
D	2	19	2	13

Calculate the Simple price index, Laspeyre's index number, Paasche's index number and, Fisher's ideal index number. From the above, 2000 values are the base year. **23 Marks**