



NATIONAL OPEN UNIVERSITY OF NIGERIA
14/16 AHMADU BELLO WAY, VICTORIA ISLAND, LAGOS
SCHOOL OF SCIENCE AND TECHNOLOGY
JUNE/JULY EXAMINATION

COURSE CODE: DAM363
COURSE TITLE: ECONOMICS STATISTICS
TIME ALLOWED: 2 HOURS
INSTRUCTION: Answer Question One and any three questions

1. At SABOGA Nig. Ltd, dry cells are usually subjected to test before been transferred to the sales department. The life span (In Hours) of 50 dry cells subjected to this test are shown

Below:

38.2	46.7	46.3	35.1	30.5	41.3	49.2	37.9
36.9	41.3	30.2	53.9	42.8	53.2	53.9	45.5
45.7	47.5	42.4	36.6	40.6	54.4	42.3	43.8
48.2	49.9	46.3	38.9	46.9	41.6	33.8	45.2
41.3	43.5	52.4	38.2	41.6	36.3	35.6	50.3
38.3	51.2	46.9	38.4	32.6	32.9	37.4	54.0
39.4	37.5						

(a) Using the tally method, construct a frequency distribution table of interval 30, but less than 35, 35 but less than 40 and so on.

(b) Estimate:

- i. Arithmetic Mean
- ii. Geometric Mean
- iii. Harmonic Mean

(c) (i) Using the formula method, determine the median and the modal life span

(ii) Draw an Ogive and Histogram to verify your result.

2. (a) Define the following terms:

- i. Data
- ii. Information
- iii. Population
- iv. Sample
- v. Variable
- vi. Error

(b) Classify and explain the various types of data available in statistics.

(c) A patient takes a prescribed drug over a period of days shown from the data below: 4, 7, 3, 9.

Compute the root mean square.

3. (a) Enumerate and explain the four different methods of taking samples from population.

(b) Briefly explain standard deviation, outlining at least five of its features.

(c) The lengths of steel bars produced by Eldorado Nig. Ltd over a period are given in the table below:

Length (m)	< 5	$5 \leq x \leq 10$	$10 \leq x \leq 15$	$15 \leq x \leq 20$	$20 \leq x \leq 25$	≥ 25
Number Produced	4	22	27	32	68	3

Calculate the mean using:

- Simple Method
- Assumed Mean Method
- Coding Method

4. The weight of a group of students in NOUN are given below:

65 70 60 46 51 55 59 63 68 53
 47 53 72 63 67 62 64 70 57 56
 73 56 48 51 58 63 65 62 49 64
 53 59 63 50 48 72 67 56 61 64
 56 52 49 62 71 58 53 69 63 59

(a) Prepare a group frequency table with class interval 45-49, 50-54, 55-59; etc

(b) Calculate:

- The Mean
- The Mean Deviation
- The Standard Deviation
- Coefficient of Variation

5. (a) Brief explain when a probability is said to be:

- Mutually Exclusive
- Mutually Exhaustive

(b). The Standard deviation of bulbs manufactured by SBG Engineering Limited is 5.6. if the mean

life span of 64 bulbs which were randomly selected from the lot is 60 days.

- Construct the 95% Confidence limit for the bulb
- What is the minimum number of samples to be selected so that the error does not exceed 0.5?

6. (a) What is an Hypothesis. Enumerate and explain the various types of hypothesis in statistics.

(b)

SOAP TYPE	YEAR		
	2010	2011	2012

Tetmosol	25	30	40
Delta	40	45	60
Imperial Leather	35	50	65
Crusader	20	25	30
TOTAL	120	150	195

Using year 2010, as the base year, calculate:

- i. The price Relative
- ii. The Simple price Index