NATIONAL OPEN UNIVERSITY OF NIGERIA
FACULTY OF AGRICULTURAL SCIENCES
SECOND SEMESTER EXAMINATION
JANUARY/FEBRUARY, 2018

Programme: Agricultural Extension and Management

Course Title: STATISTICS FOR SOCIAL SCIENCES
Course Code: AEA 501
Credit Unit: 3
Total Score: 70 Marks
Time Allowed: 2½ Hours

INSTRUCTION:
Answer Compulsory question 1 (30 marks) and any 4 questions (10 marks each).

1. (a) Define statistics and explain the major steps in statistical analysis. **5 marks**
   (b) Briefly explain the following terms:
   class mark
   class width
   histogram
   frequency polygon
   cumulative frequency polygon **5 marks**
   (c) The table below gives the frequency distribution of the average monthly earnings of male workers. Calculate the mean earnings.

Table: Frequency Distribution of the Average Monthly Earnings of Male Workers

Monthly earnings (₦)	Midpoint (m)	No. of workers (f)	f m
27.5 –32.5	30	120	3,600
32.5 –37.5	35	152	5,320
37.5 –42.5	40	170	6,800
42.5 –47.5	45	214	9,630
47.5 –52.5	50	410	20,500
52.5 –57.5	55	429	23,590
57.5 –62.5	60	568	34,080

5 marks

(d) i. What do you understand by standard deviation?

ii. Write out the six (6) steps in calculating standard deviation. **5 marks**

(e) Explain the two (2) classifications of statistics: descriptive and inferential statistics. **5 marks**

(f) Discuss on two (2) limitations of statistics **5 marks**

2. (a) Use a bar chart to present the following figures on the table below:

Value of Nigerian export of groundnut (₦ Million) between 2001 and 2005	67	52	61	64	80	324
Year	2001	2002	2003	2004	2005	Total

5 marks

(b) In 2012, three terminal examinations were conducted for NOUN staff school children. If the second term score of one of the candidate was weighted twice as much as first and third term exam was thrice as much as his first. Calculate the weighted arithmetic mean of the child if the candidate has 80, 75 and 70 in his first, second and third term respectively. **5 marks**

3. (a) Explain measure of dispersion and itemize three (3) of its example. **5 marks**

(b) Define range and fine the range of the following set of numbers: 2, 3, 5, 6, 8, 12, 18 and 25. **5 marks**

4. (a) Differentiate population and sampling. **5 marks**

(b) Outline five (5) reasons for sampling. **5 marks**

5. (a) Differentiate between dependent and independent events. **4 marks**

(b) If there are 20 balls in a box of which 14 are black and 6 are white. Out of the 14 black balls, 8 are perforated and 6 are good. Out of the 6 white balls, 3 are perforated and 3 are good. If a ball is selected at random, what is the probability that it is perforated. **6 marks**

6. (a) Discuss on Statistical Hypothesis. **2 marks**

(b) Two students were ranked according to their performance in an examination for the 10 courses they were examined as below. Examine the relationship between their ranks using Spearman's rank correlation.

Courses	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**
Student 1	2	3	7	1	8	5	10	6	9	4
Student 2	1	4	8	2	7	6	9	5	10	3

8 marks

7. (a) In a drawer containing 10 bottles of minerals, if two coke bottles are the same, three Fanta bottles are the same and same five Maltina bottles. In how many ways can the then bottles be arranged in a row in the drawer? **7 marks**

(b) What is a combination. **3 marks**