NATIONAL OPEN UNIVERSITY OF NIGERIA
Plot 91, Cadastral Zone, Nnamdi Azikiwe Express Way, Jabi - Abuja
FACULTY OF MANAGEMENT SCIENCES
2021_1 EXAMINATION

COURSE CODE: MBA 816
COURSE TITLE: QUANTITATIVE METHODS
CREDIT UNIT: 3
INSTRUCTION: 1. Indicate your Matriculation Number clearly
2. **Attempt question one (1) and any other three (3) questions; four questions in all**
3. **Question one (1) is compulsory and carries 25 marks, while the other questions carry 15 marks each.**
4. **Present all your points in a coherent and orderly Manner**
TIME ALLOWED: 2½ Hours

1. An employer of labour wants to find the relationship between the labour input employed and the total output using the following hypothetical data.

Output (Y)	28	31	29	20	37	35	40	56
Input (X)	0.8	1.1	1.6	2.3	2.2	3.1	3.0	4.6

(a) Establish the least square regression for the above data
(b) Using the average in the data, sketch the regression line.
(c) Assuming the labourer decides to employ 80 workers, estimate the output for his firm. Y on X.

25 Marks

2. The following data represents income from a particular company as a result of expenditure for a certain family. Predict the kind of relationship between income (Y) and Expenditure (X)   **15 Marks**

Income (Y)	82	70	90	85	73
Expenditure (X)	20	46	24	22	18

3a. Explain the concepts of correlation coefficient ɤ   **5Marks**

3b. The following are the performances of some contractors of some projects completion:

Contractor X's performance: 82%, 57%, 74%, 40%, 52%, 51%.

Contractor Y's performance: 71%, 34%, 50%, 81%, 62%, 54%.

Calculate the rank correlation   **10Marks**

4. The height of sample of cartons of sweets is given as; 103, 97, 101, 106, 103. Find the following, i) Range, ii) Mean Deviation, iii) Variance and Iv) Standard deviation   **15Marks**

5. Identify three reasons for using samples in place of census?   **15Marks**