OLABISI ONABANJO UNIVERSITY, AGO-IWOYE
FACULTY OF THE SOCIAL SCIENCES
DEPARTMENT OF POLITICAL SCIENCE
B.SC DEGREE IN POLITICAL SCIENCE PROGRAMME
2017/2018 RAIN SEMESTER EXAMINATIONS

COURSE CODE: POL 304

COURSE TITLE: APPLICATIONS OF STATISTICAL METHODS IN DATA ANALYSIS IN POLITICAL SCIENCE

NUMBER OF UNITS: 03

INTSRUCTION: ANSWER QUESTION **1** AND ANY OTHER **TWO** QUESTIONS

TIME ALLOWED: 2HRS

DATE OF EXAMINATION: 23/7/2018

SECTION A (COMPULSORY)

1. The table below shows the Revenue (X) and Expenditure (Y) in million (₦) of a hypothetical Local Government in Nigeria between 2007 and 2014

Year	2007	2008	2009	2010	2011	2012	2013	2014
Revenue (in million) ₦	500	600	650	700	720	700	720	780
Expenditure (in million) ₦	300	340	350	300	350	400	450	600

As a researcher monitoring data/events of the Local Government over eight (8) years as presented in the table above, you are required to:

a) Compute the relationship between Revenue and Expenditure of the Local Government using the Pearson's Product Moment Correlation Coefficient (PPMCC) and interpret the result(s).
b) Determine the coefficient of determination
c) Calculate the percentage of unexplained variations and explained variations
d) Set a hypothesis and test for its significance at 95% when table (t)= 1.86
e) Find the values of a and b in the model, given the model Y=a+bX+e
f) Find the Expenditure of the Local Government if Revenue should increase to ₦800million in 2020
g) Find the Revenue of the Local Government if Expenditure should increase to 900 million
(30marks)

SECTION B (CHOOSE ANY ONE QUESTION)

2. A group of social scientists wanted to know the views of selected Nigerians concerning the introduction of ranching system in Nigeria. The group administered 500 questionnaires to students of the department of Political Science of Olabisi Onabanjo University to ascertain their views. The students were further asked to indicate their Support (S) or Opposition (O) in relation to the issues. Out of the 300 questionnaires administered to male students; 80 supported while the remaining opposed the move.

a. Compute the chi-square statistics and test a null hypothesis of no significant difference between the opinion of male and female students on the issue. Use a critical value of 3.841.
b. Compute the contingency coefficient and explain the social information it conveys. (20marks)

3. The information below shows the scores obtainable by students of Political Science in POL 304 course. Study the information and use it to answer the following questions.

57,55,58,55,53,51,50,25,22,27,24,23,46,49,48,33,35,30,31,42,40,38,36,37,36.

   a. Present the figures in a frequency distribution table of an unequal size of 5 beginning from 20-24.
   b. Find the mean, mode and median mark
   c. Find the variance, standard variation and standard error
   d. Compute the Q_3, D_8 and P_{40} (20marks)

4. a).What is your understanding of statistics and distinguish between descriptive and inferential statistics?
   b).In your view, what are the importance of statistics?
   c).Find the Arithmetic mean, Geometric mean, Harmonic mean and Quadratic mean of the following figures: 2,4,6,8,10.
   d).Find the Q_2, D_6 and P_{70} of (No. 4c)
   e).Explain the following: facts, variables, theory and models. (20marks)

SECTION C (CHOOSE ANY ONE QUESTION)
5. a). What is Sampling?
   b). Explain at least four (4) probability sampling techniques known to you.
   c). Seven thousand (7,000) employees of a government agency were interviewed to ascertain the level of unionism in the public sector. It was discovered that 5400 employees were union activists. Estimate the proportion (interval) of union activists in the entire public sector at 90%, 95%, and 99% confidence levels. (20marks)

6. Of what importance is the use of statistical tools and techniques to the procedures and processes of data collection and analysis in researches in Political Science? (20marks)

7. How have political scientists especially from the impact of the behavioural revolution in the discipline approached the unpredictability and unreliability of man in the attempt to study his behaviour politically? (20marks)