Course Title: Statistics and Research Methods in Extension
Course Code: AEM 501
Credit Unit: 3 Units
Total Score: 70 Marks
Time Allowed: 3 Hrs
INSTRUCTION: Answer Four (4). All Questions Carry Equal Marks

QUESTION ONE
a. As a researcher, explain three (3) major concerns of research (4 ½ mks)
b. A research student wishes to present his/her information or data on a table. Advance four (4) rules that must be followed or obeyed to have a good work done (4 mks)
c. It was observed that the students that sat for a given examination were;
    48, 14, 20, 16, 21, 60, 48, 59, 60, 60 and 48.
    Present the given numbers in a tabular form and then solve for;
i. The mean of the student that sat for the examination. (5 mks)
ii. The median of the students that sat for the examination. (2 mks)
iii. Define and solve for the mode of the students that sat for the examination. (2 mks)

QUESTION TWO
a. Describe a Histogram (2 mks)
b. What is Research? (5 mks)
c. Report writing is a compulsory component of every research process. Succinctly explain what is expected in report writing (6 mks)
d. Data used in research are of different types and this is irrespective of the type of research. As a researcher advance any four (4) types of data you may need to carry out the research (4 ½ mks)

QUESTION THREE
a. Write short notes on Historical Research (3 mks)
b. Students that sat for a given examination respectively had the following scores on the following subjects; Maths 48, English 50, Physics 60, Biology 72, Chemistry 56 and Economics 40. Use the above scores to produce a pie-chart. (Do your calculation in degrees) (6 ½ mks)
c. Errors that emanate in research are related to the hypothesis accepted or rejected. Mention and explain the types of errors that can occur during research (4 mks)
d. A researcher is compulsorily entitled to the use of data. Explain primary and secondary data needed by the researcher. (4 mks)

QUESTION FOUR

a. Every research problem is identified by certain characteristics. Briefly explain any four (4). (6 mks)

b. Find the 1st, 2nd, 3rd and 4th quartiles from the set of numbers given as 48, 14, 20, 16, 21, 60, 48, 59, 60, 60 and 48 (4 mks)

c. There are different factors that are needed to be taken into consideration when a potential researcher is out to choose a good research problem. Explain in details any five (5) of those factors (7 ½ mks)

QUESTION FIVE

a. Define the term 'variables' and identify four (4) types of variables that can be used in research (5 ½ mks)

b. Analyze three (3) techniques a good researcher can adopt when dealing with problem of inadequate response when extracting information from his/her respondents. (6 mks)

c. Find the Range from the set of numbers given as; 48, 14, 20, 16, 21, 60, 48, 59, 60, 60 and 48 (2 mks)

d. Using two (2) instances, explain the difference between qualitative research and quantitative research (4 mks)