



Department of Surveying and Geoinformatics
School of Environmental Technology
Federal University of Technology
Minna, Nigeria

SVG724: Research Methods
Second Semester Examination, 2018/2019 Session
MTECH/PGD CLASS

INSTRUCTIONS:

Duration/Time allowed: 2 Hours

PGD: Answer Question 1 and any other 1 question

MTECH: Answer Question 1 and any other 2 questions

1. Describe a hypothetical scenario which involves the practical application of **any three** of these statistical tools in research data analysis:

- i. Chi-square test (parametric and non-parametric).
- ii. F-test.
- iii. Student T-test.
- iv. Spearman/Pearson regression analysis.
- v. Analysis of Variance (ANOVA) and Multivariate Analysis of Variance (MANOVA).

1b. Using MATLAB, describe the algorithmic workflow for the implementation of any of the listed statistical analysis tools in (1a) above using the described scenario.

1c. Write short notes on data transformation, highlighting its principles and methods.

1d. What are problem solving techniques? Enumerate the necessary steps involved in formulating research questions.

2a. What are some of the factors to be considered in writing a good research article?

2b. Highlight the cogent sections of a research manuscript, explaining the necessary components that make up each of these sections.

2c. Write short notes on sampling and sampling techniques

3a. What are planning problems in research.

3b. Differentiate between inductive and deductive reasoning using practical examples.

3c. Write short notes on research hypothesis.

4a. Discuss **FIVE** referencing methods, highlighting their characteristics with examples.

4b. Why must a researcher conduct literature review?

4c. Write short notes on the Methods of data acquisition