



MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY

P.O. Box 972-60200 – Meru-Kenya.

Tel: +254 (0)799529958, +254 (0)799529959, +254 (0)712524293

Website: www.must.ac.ke Email: info@must.ac.ke

University Examinations 2022/2023

SECOND YEAR, SECOND SEMESTER SPECIAL/SUPPLEMENTARY EXAMINATION FOR
THE DEGREE OF BACHELOR OF SCIENCE IN STATISTICAL SCIENCE

SMS 3172: EXPLORATORY DATA ANALYSIS

DATE: AUGUST 2023

TIME: 2 HOURS

INSTRUCTIONS: *Answer question one and any other two questions*

QUESTION ONE

- a) Discuss the following
 - i) Exploratory data analysis (4 marks)
 - ii) Confirmatory data analysis (3 marks)
- b) Highlight the steps involved in EDA and CDA (6 marks)
- c) Explain recent advances in statistics (6 marks)
- d) Highlight the steps involved in writing a statistical report (6 marks)
- e) Given a random sample, homogenous. Determine the sampling distribution of the sample mean (5 marks)

QUESTION TWO (20 MARKS)

- a) A random sample of size 80 is taken from a population. Given that $s^2 = 30.85$ and $\bar{x} = 18.85$.
construct 99% confidence interval for the population mean (6 marks)
 - b) Discuss the methods used in data collection (6 marks)
 - c) Highlight the tools used in data representation (8 marks)
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QUESTION THREE (20 MARKS)

- a) Highlight the steps used in designing a questionnaire (5 marks)
- b) Discuss the assumptions behind parametric test (8 marks)
- c) Briefly discuss the techniques used to correct problems, effects of outliers in data collected before analysis (7 marks)

QUESTION FOUR (20 MARKS)

- a) Highlight the themes behind EDA (8 marks)
- b) Discuss the straight line methodology for CDA and how to incorporate EDA (12 marks)

QUESTION FIVE (20 MARKS)

- a) Discuss the functions of the main windows in spss (10 marks)
- b) Discuss how factor analysis can be done in spss (10 marks)

