

ADMISSION NUMBER											

School of Liberal Education

Bachelor of Arts Honours in Economics

Mid Term Examination - May 2024

Duration : 90 Minutes

Max Marks : 50

Sem IV - K1UB407C - Advance Statistics

General Instructions

Answer to the specific question asked

Draw neat, labelled diagrams wherever necessary

Approved data hand books are allowed subject to verification by the Invigilator

- 1) What is the purpose of randomization in experimental design? K2 (2)
- 2) Define the term "event" in the context of probability. Give an example of a sample space for the experiment of rolling a fair six-sided die. K1 (3)
- 3) Elaborate the term "complement of an event" in probability using a suitable example. K2 (4)
- 4) Develop a scenario where understanding sampling distributions would be crucial for decision-making in a real-world context. K2 (6)
- 5) How can outliers in a sample impact the shape of the sampling distribution? K3 (6)
- 6) Define the concept of mutually exclusive events in probability. Provide an example, and discuss how the occurrence of one event affects the likelihood of the other. K3 (9)
- 7) Assess the significance of Bayes' Theorem in probability theory, highlighting its practical applications. K4 (8)
- 8) Conduct a one-sample t-test using a hypothetical scenario and interpret the results. K4 (12)

OR

Explain the Central Limit Theorem and its relevance to the distribution of sample means. How does it impact the practice of statistical inference? K4 (12)