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School of Liberal Education

Bachelor of Arts Honours in Economics

Mid Term Examination - May 2024

Duration : 90 Minutes

Max Marks : 50

Sem II - K1UB203C - Advance StatisticsGeneral 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) Discuss the concept of subsets and proper subsets within set theory. K2 (2)
- 2) Explain the concept of permutation K1 (3)
- 3) Explain the concept of expected value for a discrete random variable. K2 (4)
- 4) Discuss the concept of a probability distribution for a discrete random variable. How is it different from a probability mass function? K2 (6)
- 5) What is the probability density function (PDF) of a uniform continuous distribution? K3 (6)
- 6) What do you understand by (i) equally likely, (ii) mutually exclusive and (iii) independent events. K3 (9)
- 7) Explain the process that follows a Poisson distribution and its key characteristics. What are the parameters of a Poisson distribution? K4 (8)
- 8) Prove that for two events A and B, $P(A \cup B) = P(A) + P(B) - P(A \cap B)$. What happens if A and B are mutually exclusive ? K4 (12)

OR

State the addition and multiplication rules of probability giving one example of each rule. K4 (12)