FAST National University of Computer and Emerging Sciences
Spring 2023
MT-2005 Probability and Statistics

Course Content for Mid-Term II Exam

Contents/Topics	Question set
Bayes's Formula and Total probability **Random Variables:** Probability distribution of discrete random variable, Mean, Variance and Standard Deviation Cumulative distribution function (WP definition 3.5)	Book: Mann, Prem S. *Introductory statistics*. John Wiley & Sons, 2007. 5.4 - 5.14 5.16 - 5.25
Types of Discrete Probability distribution: Binomial probability distribution, its mean and Standard Deviation Hypergeometric probability distribution Poisson Probability distribution, its mean and Standard Deviation	Book: Mann, Prem S. *Introductory statistics*. John Wiley & Sons, 2007. 5.28 - 5.40, 5.42 - 5.46, 5.49 - 5.59
Probability distribution of Continuous random variable.	
Joint Probability Distribution for discrete and continuous random variable **Marginal distribution** for discrete and continuous random variable	Book: Walpole, R., et al. "Probability & Statistics for Engineers & Scientists 3.37 - 3.40 3.43, 3.44, 3.50
Mathematical Expectations: Mean & Variance of a Random Variables, Covariance, and Correlation.	Book: Walpole, R., et al. "Probability & Statistics for Engineers & Scientists 4.1 - 4.6, 4.8, 4.10 - 4.15, 4.17 - 4.23, 4.34 - 4.38, 4.40 - 4.52