

# Sessional II (Syllabus)

Topics	Problems	Sections
<b>Discrete Random Variables and their distributions:</b> Distribution of random variables: Main concept of random variables (CLO-1), PMF and CDF and Types of random variables Distribution of random vector: Joint and Marginal distributions and independence of random variables	MB Questions 3.1-3.24, 3.28	MB [3.1 , 3.2]
<b>Expectation and Variance (Discrete):</b> Expectation, Expectation of a function, properties, Variance and Standard Deviation, Covariance and Correlation  <b>Families of Discrete Distributions:</b> Binomial distribution and Poisson distribution	MB Questions 3.1-3.24, 3.28  WP Questions 5.4-5.20, 5.25-5.28, 5.56-5.58,5.67,5.71	MB [3.1.1 - 3.3.5]  MB[3.4.2, 3.4.5-3.4.6]
<b>Continuous Probability Distributions</b> PDF and CDF Joint Probability Distribution, marginal distribution (CLO-2)  Mean & Variance of a Continuous Random Variable, Covariance, and Correlation (CLO-2) Normal and standard normal distributions and their applications (CLO-2)	MB Questions 4.1-4.5,4.16-4.26  WP Examples 6.1-6.8 Questions 6.3-6.9	MB [4.1, 4.2.1, 4.2.4]