

FACULTY OF SCIENCE
B.Sc. II-Semester (CBCS) Examination, May / June 2018

Subject : Statistics

Paper – II : Probability Distributions

Time : 3 Hours

Max. Marks: 80

PART – A (5 x 4 = 20 Marks)
(Short Answer Type)

Note : Answer any FIVE of the following questions.

1. Define uniform distribution. Obtain its mean.
2. Define Poisson distribution. State its reproductive property.
3. From a consignment, 15 record players are selected at random, one by one, and examined. Those examined are not put back. What is the probability that 9th record examined is the third and the last defective.
4. State the memory less property of geometric distribution.
5. The mean of a normal distribution is 60 and 6% of the values are greater than 70. Find the standard deviation. $P [0 < z < 1.56] = 0.44$
6. Obtain the mean and variance of exponential distribution.
7. Define Beta distribution of first kind and find its mean.
8. Define Cauchy distribution. Give its applications.

PART – B (4 x 15 = 60 Marks)
(Essay Answer Type)

Note: Answer all the questions.

- 9 (a) Define Binomial distribution. Derive its mean and mode.
OR
 (b) Obtain β_1 & β_2 for a Poisson distribution. Also comment on its skewness and kurtosis.
- 10 (a) Define hypergeometric distribution. Derive its mean and variance.
OR
 (b) Derive Poisson distribution as a limiting case of negative Binomial distribution.
- 11 (a) Derive standard deviation, mean deviation about mean and quartile deviation for normal distribution.
OR
 (b) Show that normal distribution is a limiting case of Binomial distribution.
- 12 (a) Define Gamma distribution. Obtain its moment generating function and hence find its mean and variance.
OR
 (b) Derive moment generating function of Exponential distribution. Show that the sum of exponential random variables is a gamma random variable.
