

B.A/B. Sc-I Semester-II

Paper-II (ST-202)

Time: 3 Hours

M.M.:B. Sc: 40+10*

B.A: 28+7*

* Internal Assessment

Probability Distributions

Note : There will be nine questions in all. Question No.1 will be compulsory covering whole of the syllabus and comprising 5 to 8 short answer type questions. Rest of the eight questions will be set from the four units uniformly i.e. two from each unit. The candidate will be required to attempt five questions in all selecting one question from each unit and the compulsory one. All the questions will carry equal marks except the compulsory question, the distribution of marks for which will be as follows:-

B.Sc.8 marks and B.A. 6 marks.

UNIT-I

Bernoulli distribution and its moments, Binomial distribution: Moments, recurrence relation for the moments, mean deviation about mean, mode, moment generating function (m.g.f), additive property and recurrence relation for the probabilities of Binomial distribution.

UNIT-II

Poisson distribution: Poisson distribution as a limiting case of Binomial distribution, moments, mode, recurrence relation for moments, m.g.f., additive property of independent Poisson variates. Negative Binomial distribution: m.g.f., deduction of moments of negative binomial distribution from those of binomial distribution. Geometric distribution: moments and m.g.f.

UNIT-III

Continuous uniform distribution: Moments, m.g.f., and mean deviation. Gamma distribution: m.g.f., and additive property. Exponential distribution: m.g.f., moments and lack of memory.

UNIT-IV

Normal distribution as a limiting form of binomial distribution, chief characteristics of Normal distribution; mode, median, m.g.f. and moments of Normal Distribution, A linear combination of independent normal variates, points of inflexion, mean deviation about mean, area property of Normal distribution, importance and fitting of normal distribution.

Books recommended

S. No.	Title of Book	Name of author	Publisher
1.	Statistics:A Beginner's Text Vol. II	Bhat B.R., Srivenkatramana T. & Rao Madhava K.S.	New Age International
2.	Fundamentals of Mathematical Statistics	Gupta S.C. & Kapoor V.K.	Sultan chand & Sons
3.	Introduction to Mathematical Statistics	Kapoor & Sexena.	Schand
4.	Statistics	Johnson R.	Wiley Publishers
5.	Mathematical Statistics With Applications	Freund's J.E.	Prentice Hall