

Kakatiya University, Warangal
B.A/B.Sc. (Statistics) I Year, Semester-II
(CBCS)(With Mathematics Combination)
(Examination at the end of I Year, Sem-II)

Paper-II: Probability Distributions (DSC-2B)
(4 HPW :: 4 Credits :: 100 Marks)

Unit-I

Discrete distributions: Uniform, Bernoulli, Binomial, Poisson, Negative binomial, Geometric and Hyper-geometric(mean and variance only) distributions their applications and uses.

Unit-II

Properties of distributions in unit-I: m.g.f., c.f., c.g.f., p.g.f., moments up to fourth order and their real life applications. Reproductive property wherever exists. Binomial approximation to Hyper-geometric, Poisson approximation to Binomial and Negative binomial distributions.

Unit-III

Continuous distributions: Rectangular and Normal distributions. Normal distribution as a limiting case of Binomial and Poisson distributions. Exponential, Gamma, Beta distributions of two kinds (mean and variance only) and Cauchy distribution (definition and c.f. only).

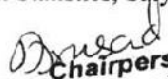
Unit-IV

Properties of distributions in unit-III: m.g.f., c.f., c.g.f., p.g.f., moments up to fourth order and their real life applications and reproductive property wherever exists.

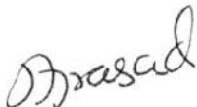
Statement and applications of weak law of large numbers, Strong law of large numbers and central limit theorem for identically and independently distributed (i.i.d) random variables with finite variance.

List of reference books:

1. Abraham, Kendall and Baker: Discrete Mathematics for Computer Science.
2. Charles M.Grinstead and Laurie Snell, J: Introduction to Probability,American Mathematical Society.
3. Goon A M, Gupta M K, Das Gupta B : Fundamentals of Statistics, (Vol-I), The World Press (Pvt) Ltd., Kolkata.
4. Hoel P.G: Introduction to Mathematical Statistics, Asia Publishing house.
5. M. Jagan Mohan Rao and Papa Rao: A Text book of Statistics (Paper-I).
6. Sanjay Arora and Bansilal: New Mathematical Statistics, Satya Prakashan , New Delhi.


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7. V. K. Kapoor and S. C. Gupta: Fundamentals of Mathematical Statistics, Sultan Chand & Sons, New Delhi.
8. William Feller: Introduction to Probability theory and its applications, (Vol-I), Wiley.
9. Hogg, Tanis, Rao: Probability and Statistical Inference, (7th edition), Pearson.
10. Telugu Academy: Sambhavyatha-Avadhī Siddanthaalu.
11. Telugu Academy: Saha Sambandhamu-Vibhajana Siddanthaalu.
12. K.V.S. Sarma: Statistics Made Simple: Do it yourself on PC, PHI.
13. Gerald Keller: Applied Statistics with Microsoft Excel, Duxbury, Thomson Learning.
14. Levine, Stephen, Krehbiel, Berenson: Statistics for Managers using Microsoft Excel (4th edition), Pearson Publication.

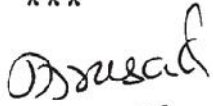

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Practical-2

Probability Distributions
(2 HPW :: 1 Credit :: 50 Marks)

1. Fitting of Binomial distribution-Direct method. (Using calculator).
2. **Fitting of Binomial distribution-Direct method.(Using MS-Excel).**
3. Fitting of Binomial distribution-Recurrence relation Method. (Using calculator).
4. Fitting of Poisson distribution-Direct method. (Using calculator).
5. **Fitting of Poisson distribution-Direct method.(Using MS-Excel).**
6. Fitting of Poisson distribution-Recurrence relation Method. (Using calculator).
7. Fitting of Negative Binomial distribution. (Using calculator).
8. Fitting of Geometric distribution. (Using calculator).
9. Fitting of Normal distribution-Areas method. (Using calculator).
10. **Fitting of Normal distribution-Areas method. (Using MS-Excel).**
11. Fitting of Normal distribution - Ordinates method. (Using calculator).
12. **Fitting of Normal distribution - Ordinates method. (Using MS-Excel).**
13. Fitting of Exponential distribution. (Using calculator).
14. **Fitting of Exponential distribution.(Using MS-Excel).**
15. Fitting of Cauchy distribution. (Using calculator).
16. **Fitting of Cauchy distribution. (Using MS-Excel).**


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