SSR DEGREE COLLEGE (AUTONOMOUS) NIZAMABAD

DEPARTMENT OF SCIENCE

STATISTICS

UNIT-I :

1. Definitions of uniform, Bernoulli, Binomial Poisson, Negative binomial and Geometric distributions
2. Derive Mean and Variance of binomial distribution?
3. Obtain Mean & Variance of binomial distribution.
4. Derive Mgf of binomial and obtain mean & Variance through Mgf?
5. Obtain CGF of binomial, then derive the Cumulants from it.
6. Find mode of binomial and Poisson dist.
7. Derive Mgf and PGF of Poisson distribution?
8. Obtain first four moments of poisson dist.?
9. Show that Poisson distribution as a limiting Case of binomial distribution?
10. Explain Negative binomial distribution? and obtain it's Mean & Variance?
11. Show that Poisson distribution as a limiting Case of negative binomial distribution.
12. Derive Mgf of geometric distribution & obtain it's Mean and Variance?
13. Derive Pgf of geometric dist. and State & prove lack of memory property?
14. Additive properties of all distributions?
15. Problems of all distributions?

UNIT-II :

1. Define Hyper-Geometric distribution and obtain it's Mean & Variance?
2. Show that Binomial distribution as a limiting Case of Hyper geometric distribution?
3. Define Rectangular distribution? obtain it's Mean and Variance?
4. Derive Mgf of rectangular distribution?
5. Define normal distribution. Obtain it's Mean and variance of it?
6. State the properties of normal distribution? and write it's importance of normal distribution?
7. Derive the Mgf of normal distribution?
8. Show that Mean = Median = Mode of normal distribution?
9. Show that the Ratio of Q.D, M.D, S.D, is 10:12:15.
10. Show that odd order moments all Zero.

UNIT-III : MOTIVATION & LEADERSHIP

1. Define Exponential distribution and obtain it's mean, Variance?
2. obtain Mgf of exponential distribution and Also derive CGF of it.
3. State & prove Lack of memory property of Exponential distribution?
4. Define Gamma distribution and obtain it's Mean & Variance?
5. Obtain CGF of Gamma distribution and it's cumulants from it?
6. Define Beta-II distribution and obtain it's Mean & Variance of it?

7. Define Beta-II distribution & obtain it's Mean & Variance?
8. Define Cauchy distribution and obtain it's characteristic function?
9. Additive property for all distributions?

UNIT-IV :

1. Define i) Population ii) Sample iii) Parameter iv) Statistic v)Sampling distribution.
2. Define chi-square distribution and state it's properties & applications?
3. Define t-distribution and state it's properties & applications?
4. Define F-distribution & state it's properties and applications?
5. Derive the relationship between t and F distributions?
6. Derive the relationship between the F & chi-square distribution?
7. Obtain Mean & Variance of chi-square obtain distribution?
8. Define Standard error and state the Standard error for various statistics?

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