

| | | | |
|--|---|----------------|-------------------|
| QP Code: D134566 | | Total Pages: 2 | Name: |
| | | | Register No. |
| THIRD SEMESTER UG DEGREE EXAMINATION, NOVEMBER 2025 | | | |
| (CUFYUGP) | | | |
| STA3MN201- STATISTICAL INFERENCE USING R | | | |
| 2024 Admission onwards | | | |
| Maximum Time :2 Hours | | | Maximum Marks :70 |
| Section A | | | |
| All Questions can be answered. Each Question carries 3 marks (Ceiling : 24 Marks) | | | |
| 1 | List the graphical functions used in R. | | |
| 2 | Write down the steps for R installation. | | |
| 3 | Write down the sufficient condition for consistency. | | |
| 4 | Define Acceptable object name. | | |
| 5 | Define Statistical Hypothesis. Distinguish between Simple hypothesis and Composite hypothesis. | | |
| 6 | What are the statistics used in testing of the mean of a population using a large sample when population variance is (i) known (ii) unknown | | |
| 7 | Define methods of maximum likelihood estimation. | | |
| 8 | Define errors in testing of hypothesis. Also explain the level of significance. | | |
| 9 | Define Chi square test for independence of attributes. | | |

| | |
|--|--|
| 10 | Define point estimation. What are the desirable properties of a good estimator? |
| Section B | |
| All Questions can be answered. Each Question carries 6 marks (Ceiling : 36 Marks) | |
| 11 | Obtain moment estimator for μ and σ of a normal population with mean μ and standard deviation σ based on a sample of size n . |
| 12 | Discuss the Chi square test for goodness of fit. |
| 13 | For the following dataset, write R commands for computing Standard deviation and coefficient of variation : 1.2, 1.4, 1.3, 1.6, 1.0, 1.5, 1.7, 1.1, 1.2, 1.3 |
| 14 | Let X_1, X_2, \dots, X_n be a random sample from $U[0, \theta]$. Find sufficient estimator for θ . |
| 15 | Show that $\underline{X}(1-\underline{X})$ is a consistent estimator of $p(p-1)$ when a random sample of size n taken from Bernoulli Distribution. |
| 16 | Define Unbiased estimator and consistent estimator. Give an example of an estimator which is consistent but not an unbiased estimator |
| 17 | Derive the confidence limit for proportion. |
| 18 | List out the applications of Chi square distributions |
| Section C | |
| Answer any ONE .Each Question carries 10 marks (1x10=10 Marks) | |
| 19 | Describe the different methods of data input in R. Also Explain Descriptive measures in R. |
| 20 | Explain Statistical inference. Also describe theory of estimation. Explain desirable properties of a good estimator. |