

Unique Paper Code: 32373902

Name of the Paper: Statistical Data Analysis Using R (SEE-2)

Name of the Course: B.Sc. (Hons.) Statistics

Semester: III

Duration: 2 hours

Max Marks: 50

Not as per OBE instructions

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Instructions for candidates

Attempt any FOUR questions. Write R codes for each question given in Section B along with other question related answers.

Section A

Fill in the blanks:

- Q1(a) R code used to append an observation to a vector L is given by _____ 1
- (b) A command used to extract 4th and 6th element from a vector x of 8 elements is _____ 1
- (c) In R missing values are represented by _____ which should be in capital letters. 1
- (d) Graphical window can be divided into several parts using the graphical instruction _____ 1
- (e) A command/R code abline (v = value) is used for drawing _____ line. 1
- (f) Write a statement/command to install a package to be used in R. Also, loads the same package for the current session of R. $1\frac{1}{2}$
- (g) Write the arguments used in graphical representation of R for the line type and line width. $1\frac{1}{2}$
- (h) Write R codes to obtain $P(X \leq 4)$, where $X \sim \text{Binomial}(n = 15, \text{prob.} = 0.6)$. $1\frac{1}{2}$
- (i) Write the output of the following R Codes:
X <- seq(10,90,20)
X $1\frac{1}{2}$
- (j) Can we use customized x-axis limits in a graphical representation? Give example. $1\frac{1}{2}$

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Section B

- Q2 Given the frequency distribution $x_i|f_i$, having equal class intervals, draw less than and more than ogives in a single plot and also find the median. Also draw another plot for a histogram. $12\frac{1}{2}$

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- Q3 Write R-Code to
 1) construct boxplot and qq plot to check the normality of the parent population.
 2) if the parent population is normal then construct 95% and 90% confidence interval for the population mean.
- Q4 Write a R- code for revealing the effect of increasing the values of parameter lambda in a Poisson distribution.
- Q5 t-test for difference of means when the samples are drawn from same population. Draw your conclusions based on 10% level of significance. Also interpret the results as obtained in R. Write R codes for mean, variance, median and mode for both the samples used in the above t-test.
- Q6 Write a R- code for the following
 (i) Draw a SRSWOR of size 20 from the population data frame Y of 100 students. Data frame has 3 fields viz. Name, RollNo and Marks.
 (ii) Calculate sample mean, variance and population mean and variance of a field Marks.
 (iii) Which library is required to be installed for above function.

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