FYUG Even Semester Exam., 2025

STATISTICS

(2nd Semester)

Course No. : STASEC–151

(Statistical Data Analysis Using R)

Full Marks : 50
Pass Marks : 20

Time : 2 hours

The figures in the margin indicate full marks for the questions

UNIT—I

1. Answer any *three* questions : 1×3=3

(a) Who developed R-programming?

(b) Write one feature of R.

(c) Write a note on CRAN.

(d) Which R-function is used to remove duplicate observations in R?

2. Answer any *one* question :

(a) Write R-code to compute minimum and maximum values from

2, 4, 7, 9, 5, 1, 15, 20

(b) Write R-code to find the number of observations from

8, 11, 15, 23, 2, 4, 21, 9

3. Answer any *one* question :

(a) Write a note on different data structure available in R.

(b) Define R. Mention its three advantages and disadvantages.

UNIT—II

4. Answer any *three* questions : 1×3

(a) If we write $x\lim = c(0, 20)$, what does it indicate?

(b) ':' command is used in R for creating what? Write with example.

(c) Write down the name of logical operators used in R.

(d) Define x lab and y lab.

(Continued)

5. Answer any *one* question : 2

(a) Write R-code to draw Boxplot.

(b) How to import XLS and CSV file in R?

6. Answer any *one* question : 5

(a) Write R-code to compute cumulative frequencies. Also write R-code to draw Boxplot using the following data :

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Score :	72	75	81	93	45	71	92

(b) Write with full description, how to draw—

(i) Bar diagram;

(ii) Histogram;

(iii) Pie diagram;

(iv) Line diagram;

(v) Frequency polygon in R.

UNIT—III

7. Answer any *three* questions : 1×3=3

(a) How to draw PP-plot in R?

(b) How to add a reference line to QQ-plot in R?

(Turn Over)

(c) Write R-code to compute range in R for the following data :

2, 27, 1, 15, 25, 7

(d) Write R-code to compute square root of 29.

8. Answer any *one* question :

(a) Write down the relationship between mean, median and mode for positively, negatively and symmetrical curve.

(b) Define standard error. Write R-code to compute standard error.

9. Answer any *one* question :

(a) Write R-code to compute quartile, 5th decile, 8th decile, 13th percentile, 25th percentile, 39th percentile, 47th percentile, 85th percentile, 99th percentile for the following values :

25, 37, 39, 42, 47, 53, 06, 32, 31

(b) Write R-code to compute mean, median, variance, standard deviation for the following values :

31, 27, 29, 45, 27, 19, 25

(Continued)

UNIT—IV

10. Answer any *three* questions : 1×3=3

(a) Which package is used to compute skewness and kurtosis in R?

(b) Write down the use of scan function in R.

(c) How to obtain transpose of a matrix in R?

(d) Write the R-code to compute correlation coefficient between two variables.

11. Answer any *one* question : 2

(a) Write a note on Kurtosis. Explain different curves present in Kurtosis.

(b) Write R-code to draw a scatter plot for the following data :

x	:	20	25	35	45	95
y	:	12	21	17	21	25

12. Answer any *one* question : 5

(a) Write R-code to compute skewness and Kurtosis, covariance for the following data :

x_1	:	7	1	3	4	1	9	11	30	4
x_2	:	1	2	7	2	7	11	25	32	5

(Turn Over)

(b) Define Spearman's rank correlation. Also write R-code to compute Spearman's rank correlation for the following data :

x	:	10	15	17	21	37	41	45
y	:	09	12	21	11	17	23	41

UNIT—V

13. Answer any *three* questions : $1 \times 3 = 3$

(a) Define R^2.

(b) Define RMSE (root mean square error).

(c) Write R-code to fit polynomial of degree 2 curve.

(d) Write down the usefulness of Is () command in R.

14. Answer any *one* question : 2

(a) Write a note on adjusted R^2.

(b) How to assign a variable in R?

15. Answer any *one* question : 5

(a) Write down the equation for simple linear regression. Write R-code to fit a simple linear regression in R for the following data :

Over	*Runs Scored*
1	07
2	11
3	23
4	27
5	31
6	45
7	55
8	67
9	69
10	71

(b) Fit polynomial of degree 3, 4 and 5 curve, separately for the following data :

x	:	7	11	13	15	19
y	:	2	3	7	11	21

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