FIRST SEMESTER UG DEGREE EXAMINATION, NOVEMBER 2025

(FYUGP)

(Regular/Supplementary/Improvement)

CC24USTA1MN103 - INTRODUCTORY STATISTICS WITH R

(Statistics - Minor Course)

(2024 Admission onwards)

Time: 2.0 Hours   Maximum: 70 Marks

                                                                              Credit: 4

Part A (Short answer questions)

Answer *all* questions. Each question carries 3 marks.

1. Differentiate between primary data and secondary data.   [Level:2] [CO1]

2. Explain the differences between quantitative data and qualitative data.   [Level:2] [CO1]

3. Use the following data to compute the "Less Than" and "More Than" cumulative   [Level:2] [CO1]
    frequencies:

    Score Range : 0-5   5-10   10-15   15-20   20-25
    Frequency   : 3   7   10   5   2

4. State two advantages of using a line diagram to display data.   [Level:2] [CO2]

5. List the steps to calculate the harmonic mean and perform the calculation for the   [Level:2] [CO3]
    dataset: 3, 7, and 21.

6. Describe how to find information on a function in R using the `help()` function.   [Level:2] [CO4]

7. Name three R packages and describe their applications.   [Level:2] [CO4]

8.   Using R code, construct a sequence from 5 to 20 with an interval of 3 using the   [Level:2] [CO4]
    seq() function and display the result.

9.   How do you import a CSV file into R with column headers?   [Level:2] [CO4]

10. Create a bar plot in R using the data: categories = c('A', 'B', 'C', 'D') and values =   [Level:2] [CO4]
    c(10, 20, 15, 30).

(Ceiling: 24 Marks)

Part B (Paragraph questions/Problem)

Answer *all* questions. Each question carries 6 marks.

11. Explain the steps involved in constructing an ungrouped frequency distribution [Level:2] [CO1]

12. A company has employees distributed across different departments. The data is as follows: [Level:2] [CO2]

Department	Percentage (%)
HR	15
Sales	35
IT	25
Marketing	25

Draw a pie chart to show the distribution of employees across departments.

13. The weekly salary distribution of employees in a company is shown below. Draw the less than and greater than ogives based on the data. [Level:3] [CO2]

Weekly Salary (in $)	Frequency
200-300	8
300-400	15
400-500	25
500-600	20
600-700	12
700-800	5

14. The following table shows the cumulative frequency distribution of the heights of students in a school. Construct a frequency polygon using the cumulative frequency data: [Level:3] [CO2]

Height (cm)	Cumulative Frequency
140-150	8
150-160	20
160-170	35
170-180	50
180-190	60

15. The speeds of cars passing through a checkpoint were recorded over some time. The data is summarized as follows: [Level:3] [CO2]

Speed (km/h)	Frequency (f)
50 - 60	6
60 - 70	10
70 - 80	15
80 - 90	9

Construct a histogram to illustrate the car speeds.

16. Interpret the meaning of the median in the following frequency distribution and calculate it: [Level:2] [CO3]

Class Interval	Frequency
30 - 40	6
40 - 50	8
50 - 60	10
60 - 70	5
70 - 80	2

17. The frequency distribution of weekly exercise hours for a group of adults is shown below: [Level:2] [CO3]

Exercise Hours	Frequency (f)
0 - 2	8
2 - 4	14
4 - 6	10
6 - 8	4

Analyze and identify the mode for the weekly exercise hours.

18. Calculate the geometric mean of the following numbers: 2574, 475, 75, 0.8, 0.005.   [Level:2] [CO3]

(Ceiling: 36 Marks)

Turn Over

Answer any *one* question. The question carries 10 marks.

19. (a) The following data shows the percentage distribution of expenditure on different   [Level:3] [CO2]

    items by two families in a month. Construct a percentage bar diagram.

Item	Family A (%)	Family B (%)
Food	40%	50%
Rent	30%	20%
Utilities	20%	15%
Entertainment	10%	15%

(b) The table below shows the marks obtained by three students in five subjects.

    Construct a multiple-bar diagram to compare their performances.

Subject	Student A	Student B	Student C
Math	80	70	90
Science	75	85	80
English	70	75	65
History	85	80	75
Geography	90	85	80

20. A survey was conducted to measure a group of teenagers' daily screen time (in   [Level:2] [CO3]

    hours). The data is summarized in the following frequency distribution:

Screen Time (hours)	Frequency (f)
0 - 2	7
2 - 4	12
4 - 6	15
6 - 8	10
8 - 10	6

Calculate the mean and median of the screen time based on the given frequency

distribution.

(1 × 10 = 10 Marks)

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