25U187 (Pages: 3) Name : .....

Reg. No : .....

FIRST SEMESTER UG DEGREE EXAMINATION, NOVEMBER 2025

(FYUGP)

(Regular/Supplementary/Improvement)

CC24USTA1MN111 - FUNDAMENTALS OF DATA ANALYSIS

(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. Classify between nominal data and ordinal data. [Level:2] [CO1]

2. Draw a frequency curve to the following frequency distribution. [Level:3] [CO1]

Marks	10-20	20-30	30-40	40-50	50-60	60-70
No of students	5	8	15	20	12	7

3. Given the following frequency distribution, calculate the cumulative frequency: [Level:3] [CO1]

Class	10-20	20-30	30-40	40-50
Frequency	4	8	12	6

4. Calculate the harmonic mean of the test scores: 70, 85, and 95. [Level:3] [CO2]

5. Calculate the coefficient of range for the following data. [Level:3] [CO3]

Marks	10-20	20-30	30-40	40-50
No of Students	5	8	15	7

6. Describe measure of dispersion. [Level:3] [CO3]

7. Provide the steps to use the `file.choose()` function in R to select a file interactively for input. [Level:3] [CO4]

8. Use R code to calculate mean and median for the following data set: 15, 22, 8, 30, 10, 25. [Level:3] [CO4]

9. Provide the R code to plot a boxplot representing the distribution of temperature readings taken over a week (in °C). Use the following temperature data: [Level:3] [CO4]
   22, 25, 20, 23, 24, 21, 19, 27, 28, 30, 26, 24

10. Provide the steps involved in downloading and installing R from Comprehensive R Archive Network (CRAN). [Level:3] [CO4]

(Ceiling: 24 Marks)

Part B (Paragraph questions/Problem)

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

11. The following table gives the scores of students in a final exam.Draw a histogram to represent the frequency distribution of scores. [Level:3] [CO1]

Scores	0-10	10-20	20-30	30-40	40-50	50-60	60-70
Frequency	3	7	10	12	15	8	5

12. Draw an ogive for the following data giving the distribution of size of farms selected at random from the series. [Level:3] [CO1]

Farm in acres	5-15	15-25	25-35	35-45	45-55	55-65	65-75
No of farmes	7	12	17	20	14	6	4

13. Calculate the median for the following data. [Level:3] [CO2]

Wages in Rs	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70
Labourers	12	18	22	27	17	23	29	3

14. Calculate the geometric mean for the following data. [Level:3] [CO2]

Wages	100-110	110-120	120-130	130-140	140-150	150-160	160-170
No of workers	10	25	36	68	32	21	8

15. Compute mode for the following data. [Level:3] [CO2]

Class	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45
Frequency	50	70	80	180	152	120	70	50

16. The following table shows the distribution of students' scores in a mathematics test. Calculate the quartiles, 40th percentile (P_{40}) and the 6th decile (D_6). [Level:3] [CO3]

Scores	10-20	20-30	30-40	40-50	50-60
Frequency	6	8	12	10	4

17. Calculate the quartile deviation for the following data. [Level:3] [CO3]

Class	0-10	10-20	20-30	30-40	40-50	50-60	60-70
Frequency	5	9	20	31	18	11	6

18. Calculate mean deviation from median for the following data. [Level:3] [CO3]

Class	20-40	40-60	60-80	80-100	100-120	120-140	140-160	160-180	180-200
Frequency	6	9	11	14	20	15	10	8	7

(Ceiling: 36 Marks)

Part C (Essay questions)

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

19. Calculate mean and median for the following data. [Level:3] [CO2]

Class	5-9	10-14	15-19	20-24	25-29	30-34	35-39
Frequency	8	12	23	12	7	5	3

20. Prices of a commodity (in rupees) for six months in two cities are as follows: [Level:3] [CO3]

City A	48	40	53	44	57	49
City B	47	41	50	46	58	47

Demonstrate the consistency of the prices in these two cities.

(1 × 10 = 10 Marks)

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