

FIRST SEMESTER UG DEGREE EXAMINATION, NOVEMBER 2024

(FYUGP)

CC24U STA1 MN111 - FUNDAMENTALS OF DATA ANALYSIS

(Statistics - Minor Course)

(2024 Admission - Regular)

Time: 2.0 Hours

Maximum: 70 Marks

Credit: 4

Part A (Short answer questions)

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

1. Explain the difference between the advantages and disadvantages of secondary 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 following numbers: 3, 9, and 27. [Level:3] [CO2]

5. Discuss the merits of mean deviation. [Level:3] [CO3]

6. Calculate range for the following data. [Level:3] [CO3]

Class	5-15	15-25	25-35	35-45
Frequency	5	15	12	4

7. Use R code to calculate the mean of a set of numbers : 10, 15, 20, 25, 30. [Level:3] [CO4]

8. Make a vector x in R with the values (2,4,6,8,10). Determine the number of elements in the vector using the length() function in R and present the count. [Level:3] [CO4]

9. Provide the R code to plot a pie chart showing how time is allocated in a day across different activities. Use the following time allocation data: Work: 40%, Leisure: 30%, Sleep: 20%, Exercise: 10% [Level:3] [CO4]

10. Using R code, make a numeric vector X containing the values (4, 7, 9, 3, 6, 5). Add 5 to each element of the vector and display the result. [Level:3] [CO4]

(Ceiling: 24 Marks)

Part B (Paragraph questions/Problem)Answer *all* questions. Each question carries 6 marks.

11. The table below shows the number of hours spent watching TV per day by a group of individuals. Draw a histogram to represent the data. [Level:3] [CO1]

Hours watched	0-1	1-2	2-3	3-4	4-5	5-6	6-7
Frequency	2	6	12	15	10	7	5

12. The following table provides the weights (in kg) of 50 students in a school. Draw the two ogives for the following data. [Level:3] [CO1]

Weight Range (kg)	30-35	35-40	40-45	45-50	50-55	55-60
Frequency	5	10	15	8	7	5

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

Class	0-10	10-20	20-30	30-40	40-50	50-60	60-70
Frequency	8	12	20	23	18	7	2

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

Class	10-20	20-30	30-40	40-50	50-60
Frequency	4	6	10	7	3

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

Class	10-20	20-30	30-40	40-50	50-60	60-70	70-80
Frequency	5	12	18	24	17	15	9

17. Calculate the mean deviation about the mean for the following frequency distribution of marks of 60 college students. [Level:3] [CO3]

Marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70
Frequency	4	6	10	20	10	6	4

18. The following table shows the distribution of ages in a group of employees. Calculate the quartiles. [Level:3] [CO3]

Age	20-30	30-40	40-50	50-60	60-70
Frequency	6	14	20	10	5

(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]

Marks	0-10	10-20	20-30	30-40	40-50	50-60
Frequency	5	15	40	32	20	8

20. Calculate the coefficient of variation for the following data.

[Level:3] [CO3]

Class	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
Frequency	12	18	35	42	50	45	20	8

(1 × 10 = 10 Marks)
