**A1012**

# NAIPUNNYA INSTITUTE OF MANAGEMENT AND INFORMATION TECHNOLOGY (AUTONOMOUS)

## FIRST SEMESTER (FYUG) DEGREE EXAMINATION NOVEMBER 2025

### COMMERCE

### STA1MN111 - FUNDAMENTALS OF DATA ANALYSIS

Time:Two Hours                                                      Maximum:70 marks

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### Section A
Answer all questions.
Each question carries 3 marks. Ceiling 24 marks

1. Define Statistics.                                                                                    CO1

2. What is quartile deviation?                                                                  CO4

3. Define Deciles. How are they useful in statistics?                          CO4

4. Write the R commands to perform the following: * Addition of 25 and 15 * Division of 40 by 8 CO3

5. The marks obtained by 7 students in a test are:12, 18, 25, 30, 35, 40, 50 Find the Range and the Coefficient of Range.                                                                        CO4

6. List any three features of R as a programming language.              CO3

7. Define Median. Mention any two merits of Median.                        CO3

8. Define Arithmetic Mean and list two merits and two demerits.    CO3

9. The number of goals scored by a football team in 10 matches is given below: Goals scored (x) 0 1 2 3 4 No. of matches (f) 1 3 4 2 0 Find the mode.            CO3

10. Find the 4th decile ($D_4$) for the following data:15, 20, 12, 18, 25, 10, 30, 22            CO4

### Section B
Answer all questions.
Each question carries 6 marks. Ceiling 36 marks

11. The following table shows the marks obtained by students in a test.

Calculate the Quartile Deviation.

| Marks | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 | 70-80 |
|---|---|---|---|---|---|---|---|---|
| No. of Students | 5 | 8 | 15 | 22 | 20 | 10 | 12 | 8 |

CO5

12. Explain the merits and demerits of Arithmetic Mean.                  CO3

13. The marks obtained by 50 students in a test are given below. Find the 30th Percentile (P30).    CO5

| Marks | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 | 70-80 |
|---|---|---|---|---|---|---|---|---|
| No. of Students | 4 | 6 | 10 | 12 | 8 | 5 | 3 | 2 |

14. Why Standard Deviation is considered as the most Popular Measure of Dispersion?                CO5

15. Explain the different types of data with suitable examples used in statistics.                CO1

16. Differentiate between percentiles and quartiles with examples.                CO4

17.The marks obtained by two students A and B in 5 subjects are given below. Calculate the mean and standard deviation of marks for each student. Also state who is more excellent and who is more consistent. Subject: 1 2 3 4 5 Student A : 40 50 60 80 70 Student B : 20 60 70 90 100                CO4

18. The marks and number of students are given below. Using R programming, find the median of the discrete frequency distribution. Marks = (10,20,30,40,50) No. of Students = ( 5, 8, 15,10,2)                CO3

### Section C
Answer any one question

The question carries 10 marks.

19. The ages (in years) of 50 employees are given. Find the mean deviation about the median.

| Age | 15–20 | 20-25 | 25-30 | 30-35 | 35-40 | 40-45 |
|---|---|---|---|---|---|---|
| Frequency | 6 | 10 | 12 | 11 | 8 | 3 |

CO5

20. What are the different measures of central tendency. Discuss their merits and demerits                CO3

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