



# RAN-2411000903040001

## S.Y.BCA (NCF-NEP) (Sem.-III) Examination November - 2025 MDC-302-Statistical Methods and Data Analysis

Time: 2 Hours ]

[ Total Marks: 50

### સૂચના : / Instructions

- (1) ઉપરોક્ત દર્શાવેલ વિગતો ઉત્તરવહી પર અવશ્ય લખવી.  
Fill up strictly the above details on your answer book

Seat No.:

|  |  |  |  |  |  |
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Student's Signature

### Q.1. A. Answer Following (Any Five)

5

- What is the probability of an event that is certain to happen?  
A) 0 B) 0.5  
C) 1 D) 2
- Standard deviation is defined as:  
A) Square root of variance  
B) Average of deviations from mean  
C) Sum of squared deviations  
D) Ratio of variance and mean
- Which function in R is used to read data from a CSV file?  
A) read.csv() B) load.csv()  
C) Import.csv() D) fetch.csv()
- What will the following R code return?  
X<-10, print(class(X))  
A) "Integer" B) "Character"  
C) "Numeric" D) "logical"
- What is the extension of R script file programming?  
A) .RP B) .R  
C) .RPY D) .txt
- Which function is used to create a data frame in R?  
A) make.dataframe() B) df.create()  
C) build.df() D) data.frame()

### B. Answer Following in one or two lines (Any Five)

5

- What is list?
- Write syntax for conditional statement in R.
- What is sample?
- How to create matrix in R?
- How to combine two data frames vertically in R?
- What is range?

**Q.2. A. Answer the Following:** **10**

1. Calculate mean of following data:

|                |      |       |       |       |       |       |       |
|----------------|------|-------|-------|-------|-------|-------|-------|
| Marks          | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 |
| No of Students | 10   | 15    | 25    | 25    | 10    | 10    | 5     |

2. What are histograms, and how are they used to represent data?

**OR**

1. What is Mean in statistics? Explain the types of Mean in detail.  
2. How to use cut() function? Explain with example.

**B. Answer the Following:** **6**

1. Calculate mean of following data.

|           |    |    |    |    |    |    |    |
|-----------|----|----|----|----|----|----|----|
| Class     | 10 | 20 | 30 | 40 | 50 | 60 | 70 |
| Frequency | 3  | 5  | 8  | 12 | 8  | 8  | 6  |

2. Explain concept of random sampling and its importance.

**OR**

1. Calculate the Range and coefficient of range:  
Dataset: 12, 25, 18, 30, 22  
2. What are variables in statistics? Give difference between categorical and numerical variables.

**Q.3. A. Answer the Following:** **10**

1. Explain various methods of subsetting in R.  
2. How to import CSV file into R explain with example.

**OR**

1. How R is useful in Data Analytics?  
2. Describe subset function with proper syntax and example.

**B. Answer the Following:** **6**

1. What is data cleaning? Explain characteristics of clean data.  
2. How can you create data frame in R? Explain with example.

**OR**

1. Explain order() function in R.  
2. What is Missing data? How to visualization of missing values of a dataset.

**Q.4. A. What is Filtering? Explain in R.** **5**

**OR**

**A.** How to make data type conversion in R.

**B.** How to reshaping of data frame in R. **3**

**OR**

**B.** Explain combining data frames using cbind() and rbind() in R.