

RAN-2508000605020008

B. Com. (Data Sci.) (NCF-NEP) (Sem.-V) Examination March - 2026

Multivariate Techniques For Data Analytics-Major

[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.: <table border="1"> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table> Student's Signature						

- Q.1. Answer the following questions: (Any Five) 10**
- What is Multivariate Analysis?
 - What is Fisher's Discriminant Function (FDF)?
 - What is the primary purpose of Hotelling's T^2 test?
 - Define Factor Analysis.
 - Define Discriminant Analysis.
 - Differentiate between separation and classification in discriminant analysis.
 - Define Hotelling's T^2 statistic.
- Q.2. Explain the applications of MANOVA across different fields and Discuss in detail the assumptions of MANOVA. 14**
- OR**
- Q.2. A. Discuss in detail the applications of Discriminant Analysis. 07**
B. Describe the concept and applications of the Multivariate Normal Distribution. 07
- Q.3. Discuss the types of Factor Analysis with suitable examples and explain the entire PCA procedure with interpretation of principal components. 14**
- OR**
- Q.3. Write following answers:**
- Explain the process of classifying several populations using canonical variates and Mahalanobis distance. **07**
 - Explain properties of the Multinomial Distribution. **07**
- Q.4. Write short notes: (Any Three) 12**
- Briefly explain the key assumptions of Hotelling's T^2 test.
 - Explain the assumptions of discriminant analysis.
 - Write short notes on Group Centroids in multi-group classification.
 - Differentiate between ANOVA and MANOVA (any four points).
 - Explain the assumptions of Canonical Correlation Analysis.