

Computer Science & Business Systems
BACHELOR OF TECHNOLOGY (CBCS) (2021-COURSE)
B. Tech. Sem - III CS&BS : WINTER : 2024
SUBJECT: COMPUTATIONAL STATISTICS

Day : Wednesday
Date : 11/12/2024

W-24145-2024

Time : 10:00 AM-01:00 PM
Max. Marks : 60

N.B.:

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.

Q.1 Explain the features of Python programming language. (10)

OR

What is the significance of data wrangling in the analysis of data? Explain in detail. (10)

Q.2 Explain the working of `resample()` and `asfreq()` functions. (10)

OR

Using an example demonstrate the use of `Groupby` function. Apply it on any column of the assumed sample data. (10)

Q.3 Derive the formula for Multivariate Normal Distribution where variables are independent of each other. (10)

OR

Explain Central Limit Theorem (CLT). Also explain the significance of sample size in CLT. (10)

Q.4 Design the model for Multivariate Regression Model. Explain how it is different than Simple Linear Regression Model. (10)

OR

Explain with suitable example what Linear Discriminant Analysis is. (10)

Q.5 Explain Factor Analysis, its purpose and types. (10)

OR

Design the classic equation of Principal Component Analysis $|S - \lambda I| = 0$. (10)

Q.6 Explain the significance of K-means clustering. Also explain the pros and cons of K-means clustering algorithm. (10)

OR

What are different kinds of distances that are used to find proximity in clustering? (10)

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