

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -I EXAMINATION- 2025

BBA-V Semester (BBA)

COURSE CODE(CREDITS): 25BBWHS532 (4)

MAX. MARKS: 15

COURSE NAME: Data Analytics using Python

COURSE INSTRUCTORS: Dr. Nishant Jain

MAX. TIME: 1 Hour

Note: (a) All questions are compulsory.

(b) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems.

1. What are the fundamental building blocks required to design an effective machine learning system, especially when working with large-scale data in a real-world application like fraud detection?
[3, CO1]
2. Discuss common techniques used for data normalization and provide an example of how these techniques can improve the accuracy of data analysis models.
[3, CO1]
3. Explain the concept of feature extraction and how it transforms raw data into meaningful features, such as identifying key characteristics from a dataset of students marks at a university to improve predictive modeling.
[2, CO1]
4. Illustrate how feature selection can improve the efficiency and accuracy of a machine learning model
[2, CO1]
5. Describe how classification differs from regression in supervised learning, and give an example of a classification task in a practical setting.
[2, CO1]
6. Differentiate between training and testing datasets and explain their roles, such as in building a spam email classifier, to ensure that the model generalizes well to unseen data.
[2, CO1]
7. What challenges can arise from setting an excessively high or low learning rate during neural network training?
[1, CO1]